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PRINCIPLES OF COMMERCE



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PRINCIPLES OF COMMERCE

A STUDY OF THE MECHANISM, THE ADVANTAGES, AND THE TRANSPORTATION COSTS OF FOREIGN AND DOMESTIC TRADE

BY

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PREFACE

In writing a book on the *Principles of Commerce*, my purpose has been to present the theory of commerce in its several important aspects, while yet so emphasizing the relations of the different branches of the subject to each other, as to give unity to the whole. In accordance with this purpose, the book has been written in three Parts (separately paged), *viz.*, (I) *The Exchange Mechanism of Commerce;* (II) *The Economic Advantages of Commerce;* and (III) *The Transportation Costs of Commerce.* Each Part has a real and close connection with the Part immediately preceding or following it; yet no one Part is written merely as an introduction to or appendix to another. Each is important in itself.

In Part I the aim is to set forth briefly the laws of money and the nature of banking, and then to show, through an analysis of foreign exchange operations, the international nature of the credit relations growing out of trade. In this Part, I have endeavored to analyze, more fully than is usually done, the interrelations of different persons, buyers and sellers, *et al.*; in the credit mechanism of exchange, — to show who are the ultimate creditors when bank checks and bank notes are used in trade and when bills of exchange (especially "long bills") are used. The flow of money from country to country is explained, and the relation of this flow to fluctuations in the rate of exchange. Emphasis is placed on the fact, ordinarily passed by without notice, that whatever may be the relation or non-relation of the

currency of a country to the currencies of other countries, its trade with them cannot all be either an export or an import trade for any great while, without introducing a tendency to a reverse flow or to equilibrium.

Part II succeeds logically to Part I. The money and credit mechanism of commerce having been described and its operation explained in Part I, Part II begins with a consideration of the gains of trade, whether the trade is within a single country or between countries. Then comes a discussion regarding the shares of two or more countries in the gains resulting from their trade with each other. Chapter III deals with the shifting and incidence of revenue tariffs on imports and exports. In the remainder of Part II, I have considered governmental interferences with and favors to trade, such as protective tariffs, bounties, navigation acts, canal building at public expense without charge to the users, land grants in encouragement of railway building, etc.; and have explained what effects are to be expected from these various policies.

Part III begins with a classification of the costs of transportation, and a discussion regarding the extent to which each class of costs does affect and ought to affect rates. The various kinds of competition in transportation are then described. Monopoly conditions are described, and the effect of monopolistic rates on commerce is discussed. Various kinds of discrimination are treated at length. In the main, this third Part of the book is given over to the theory of transportation rates; but transportation rates are here dealt with, primarily, in their relation to commerce. Whether a given level of rates is so high that, like tariff restrictions, it will prevent commerce which ought to take place, or whether it is so low (less than cost) that, like most

bounties, it will encourage commerce that ought not to take place, or whether rates are discriminatory in such a way as to affect commerce injuriously, are the questions kept constantly in view. As a protective tariff may prevent profitable trade, so may monopolistic transportation rates. As the protective policy may, perhaps, benefit persons in one section of a country at the expense of those in another section, so discriminating transportation rates may arbitrarily build up one city and ruin another. As tariff protection may divert a country's industry out of its most profitable channels, so may discriminating railroad rates arbitrarily encourage one industry in a given territory or section and discourage another. As tariff barriers may further the development of private monopoly, so may discrimination in rates among competing shippers. Yet, on the other hand, certain apparent discriminations among places, among different kinds of goods, and between different directions, are seen, upon analysis, to be not quite analogous to protective tariffs and bounties, but to be, within limits, economically defensible.

The book has been written with both the general reader and the student in view. My hope is that it may be found useful in general courses of commerce, in courses dealing with foreign and domestic exchange and trade, or in courses dealing with trade and trade restrictions and the relation of transportation rates to trade. Perhaps, also, where no undue anticipation of other courses results, it may serve as a second book in general courses on economics, following a more elementary introductory text. The range of topics treated and the interest of many of these topics to the average student would seem not unfavorable to such use. Clearness has been particularly aimed at. The discussion of

difficult or controversial questions of particular interest to professional economists has been largely relegated to footnotes.

Acknowledgment should be here made of various courtesies extended, and of the aid rendered me by a number of friends who have done much toward removing errors of statement and expression and in suggesting the addition of critical and illustrative matter. To the *Quarterly Journal of Economics* I am under obligation for permission to include, in Chapter II of Part I, substantially without change, the text of an article on *Commercial Banking and the Rate of Interest*, originally published in August, 1910. To the *American Economic Review* I owe permission to republish, as Chapter II of Part III, in practically its original form, an article on *The Competition of Transportation Companies*, first published in that periodical in December, 1914. To Brown Bros., of New York City, I am indebted for several items of needed information regarding foreign exchange methods, and both to Brown Bros. and to Mr. Jacob Seibert, Jr., editor of the *Commercial and Financial Chronicle*, I am indebted for detailed information on a number of points connected with the recent foreign exchange situation, — information which made it possible to illustrate (Part I, Chapter VI, § 9), by reference to current events, conclusions which, in my *International Trade and Exchange* (1914), were presented as purely theoretical, but which appear to have been verified by occurrences growing out of the European war. To one of my students, Mr. Lawrence M. Marks, Yale 1914, I am indebted for the calculation of seasonal sterling exchange rates, presented as a footnote in Chapter IV (§ 2) of Part I. Mr. Franklin Escher, of the Commercial Security Company, New York City, has given me the benefit of a careful

criticism of the manuscript of Part I, particularly regarding the matter of conformity of statement to business practice. To Professor F. R. Fairchild of Yale College I am indebted for a searching criticism of Part I, from the standpoint both of economic theory and of form of presentation. The late Professor G. S. Callender of the Sheffield Scientific School, Yale University, to whom I submitted the manuscript of Part II, made a number of valuable criticisms and suggestions. On Part III, I have to acknowledge a most searching and valuable criticism by Professor John Bauer of Cornell University. I am also indebted, for critical reading of selected chapters in Parts II and III, to Professors Irving Fisher, Clive Day, and H. C. Emery of Yale College. Finally, I would acknowledge, here, the aid rendered by my wife, who has assisted me in the gathering of data, in reading and criticising the entire manuscript in its various stages of completion, and in correcting the proof.

HARRY GUNNISON BROWN.

COLUMBIA, MO.,
March, 1916.

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PART I

THE EXCHANGE MECHANISM OF COMMERCE

PRINCIPLES OF COMMERCE

CHAPTER I

LAWS OF MONEY

§ 1

Quantitative Statement of the Relation between Money and Prices

PRIMITIVE trade is often a direct trading of one kind of goods for another, the process called barter. The exchange of knives, hatchets, guns, mirrors, etc., with the Indians, in return for land and furs, with which we have been made familiar in our school histories and in stories of adventure, was trade of this sort. But even the Indians had wampum, which they used as a medium of exchange, and the highly civilized countries have long since made use of money, whether of gold or silver or other material, in their commerce. A study of the laws of commerce involves, then, and may well involve as a preliminary step, a study of the laws of money. We are not likely to find that the basic principles of trade are so very different with money used than they would be if the world traded, supposing it conveniently could, goods of one kind directly for goods of another. The

money-using method of trade is more efficient. The motives for trade and the nature of the advantages from it are the same whether money is used or not. But it is worth while analyzing the commercial processes, as they are actually carried on, even in many of their modern complications. To do so, may perhaps the more clearly expose fallacies regarding trade, not uncommonly held. We shall begin, then, with a study of money, considered as an important part of the mechanism of trade.

Money, as a medium of exchange, is a kind of wealth or property for which other goods are sold and with which, in turn, desired goods are bought. It may be distinguished from other wealth or property by its characteristic of general exchangeability. A person desiring, as all do desire who are engaged in any business or regular occupation or who have capital to invest, to dispose of some kinds of goods or services in exchange for others, does not need to seek out those who both want what he has to sell and will sell what he wants to buy and with whom he can make a satisfactory trade "in kind." Instead, he sells for money, for a universally desired medium, what he has to dispose of, to whoever desires it, and, with this money as purchasing power, seeks out those who have for sale what he himself wishes to buy. The use of money is an intermediate step in what is still the exchange of goods for goods. In order that money may perform its function of facilitating trade, both goods to be sold and goods to be bought must be valued in terms of money. Money becomes a measure of value as well as a medium of exchange. One kind of goods will have a higher value, measured in money, than another kind, if its cost of production is greater, or if, for

any other reason, only the higher value will equalize supply of and demand for this kind of goods. The same relation of values, between two sorts of goods, would exist if money were not used, but the use of money makes it measurable in a generally familiar standard.

An analysis of the prices or values of one sort of goods as compared with those of other sorts, leads us to a consideration of the special forces of demand and supply, such as utility and cost of production, acting upon such goods. In studying the laws of money we need to attend not so much to the conditions determining the value of one kind of goods in relation to some other kind or kinds, as to the conditions determining the average value of goods in relation to money, and *vice versa*. We have to consider, that is, the general level of prices, and conversely the purchasing power of money.

This relation between money and other goods has several times been given a mathematical form of statement.[1] Let S represent the total amount of money (number of dollars) spent in a given community during a given period of time, say a year. Let M represent the (average) number of dollars in that community during the same period. Then the average number of times a dollar is spent during the year will be S/M. This is the velocity of circulation of money and may be called V. $S = MS/M$, and therefore, by the method of substitution, $S = MV$. In words, the total dollars spent for goods is equal to the number of dollars in the community times the average velocity of circulation of those dollars.

But the total number of dollars spent for goods is also

[1] For instance, Newcomb, *Principles of Political Economy*, New York (Harper), 1885, p. 346; Edgeworth, "Report on Monetary Standard," Report of the British Association for the Advancement of Science, 1887, p. 293; Hadley, *Economics*, New York (Putnam), 1906, p. 197.

equal to the sum of the quantities of all the kinds of goods bought, times their respective prices. Let the price per pound and the number of pounds of sugar bought be represented respectively by p and q, the price per bushel of wheat and the number of bushels bought by p' and q', and so on. Then the total number of dollars spent for goods, *i.e.* S, is equal to $pq + p'q' +$ etc. Since two things equal to the same thing are equal to each other, and since

$$S = MV \text{ and also}$$
$$S = pq + p'q' + \text{etc.},$$

therefore

$$MV = pq + p'q' + \text{etc.}$$

This is the mathematical statement of the so-called quantity theory of money, omitting, however, any reference to credit currency.[1] It asserts simply that the quantity of money times its velocity of circulation, equals the prices of goods bought with money, times the quantities bought. The conclusion follows, therefore, that if the quantity of money, M, increases, while the velocity of circulation and the volume of trade remain the same, prices will rise in the same proportion. A decrease in the amount of M would, on the same assumption, be accompanied or followed by a fall in the money prices of goods. An increase in the q's[2] or volume of trade would, other things equal, occasion a fall of prices; and a decrease in the q's, a rise of prices.

[1] For consideration of credit, see Chs. II and III (of Part I).

[2] The q's or quantities of goods should be held to include not only finished goods exchanged in trade and goods purchased for raw material, but also the additions made by labor to the utility of goods and paid for in wages and the additions made by the service of "waiting" and paid for by means of interest, dividends, etc.

§ 2

Causal Explanation of the Price of a Given Kind of Goods

A quantitative or mathematical statement of a principle is not, however, an adequate explanation of that principle. In this case, the explanation must be found in the working of the market, in competition with each other of buyers and of sellers. This means that there must be an analysis of the forces of supply and demand in relation to general or average prices, in addition to the usual study of those forces in relation to particular prices.

The price of any particular kind of goods, say the price of wheat per bushel, is commonly said to be fixed by the equation of supply and demand. But these terms are frequently misunderstood. For example, supply is sometimes thought of as the total stock. Demand is thought of as the amount wanted by purchasers, but without much reference to the exact conditions determining this amount. As a matter of fact, supply is not the total stock of a good, whatever relation it may have to this stock. Supply is different according as price is different. Hence any reference to supply should specify a price. The supply of any good at a given price is the amount which sellers are ready to dispose of at that price.[1] Thus, the supply of wheat at a price of $1.10 per bushel may be, in a given market, 1,000,000 bushels. That is, at a price of $1.10 per bushel, there are so many persons ready to sell wheat and ready to sell such quantities, that 1,000,000 bushels may be had.

[1] See J. S. Mill, *Principles of Political Economy*, Book III, Ch. II, § 4. One of the best recent presentations of the theory of supply and demand is to be found in Fisher, *Elementary Principles of Economics*, New York (Macmillan), 1912, Ch. XV.

In general, the higher the price, the larger, other things equal, will be the supply; and, similarly, the lower the price, the smaller will be the supply. If the price of any good is lower relatively to other desired goods, producers and sellers will be less inclined to bring the good to market for disposal, and may even turn their attention to other lines. If the price is higher, they will be more inclined to sell large quantities, and some may be tempted to forsake other lines to produce the good in question.

In the same way, reference to demand should specify a price. Analogously, the demand for any good at a given price is the amount that purchasers stand ready to take at that price. If at $1.10 per bushel the demand for wheat is for 1,000,000 bushels, then the number of persons wishing to buy wheat is such, and the amounts they individually stand ready to buy are such, as to make an aggregate of 1,000,000 bushels. Other things equal, demand rises as price falls, and falls as price rises. The lower the price of any good in relation to prices of other goods, the more ready are purchasers to buy it; and the higher the price, the less ready. The price of any good, whether of cotton, labor services, bills of exchange or anything else marketable, is fixed where supply and demand are equal.

It is not, however, an explanation of price merely to state that it is fixed where supply and demand are equal. It is necessary further to inquire *why* price is fixed at that point. If supply of and demand for wheat in a given market are equalized at $1.10 per bushel, why may not the price nevertheless be $1? If we assume $1 to be the price, we see that such a price represents a position of unstable equilibrium. At this price, the demand would be in excess of the supply. The persons anxious to buy

wheat are ready to buy, at this price, more than can be had, and since even at $1.10 the amounts they will buy are equal to the amounts they can get, it appears that there are many who would gladly pay more than $1 per bushel rather than go without wheat entirely. Here, then, are persons, many of whom would pay more rather than not get the wheat, the aggregate of whose desired purchases at $1 per bushel must exceed the total supply offered. If $1 is the price, some who would gladly pay that and more cannot get the wheat they desire.[1] Each intending purchaser will fear that he will be one of those who fail to get what they wish. Since all cannot be satisfied and since he himself may not be, he is likely to offer more than $1 in the hope that sellers will be persuaded to sell to him, at least. But he is not likely to offer more than $1.10. According to our hypothesis, a price of $1.10 will bring forth a supply fully equal to the demand. Even if other buyers are foolish enough to offer a higher price and are sold to in preference, yet since the demand of these others would not absorb the entire supply, a purchaser who offered $1.10 would secure the wheat desired.

As the price is kept from going below that height which equalizes supply and demand, by the competition of buyers, so, by the competition of sellers, it is kept from going above that height. If $1.10 a bushel is the equalizing price, the competition of sellers will prevent the price from being higher, say $1.15. For at $1.15 there would presumably be a smaller demand and a greater supply. That is, at $1.15 there would be sellers anxious to dispose of, in the aggregate, more wheat than buyers

[1] This explanation of the nature of competition is well set forth in Hadley, *Economics*, pp. 75–77.

would take. Some of these prospective sellers must be doomed to disappointment, and those most anxious to sell would therefore bid against each other in lowering the price to the point where supply and demand were equal. This they would do because in no other way could they be sure of selling their wheat. But they need not go below the equalizing price, because when that price is reached there are enough more buyers or enough fewer sellers, or both, to insure sales by those still in the market and desiring to sell. Even if some should offer, unwisely, to sell at a lower price, yet since these could not, by our hypothesis, satisfy the demand, all who charged the equalizing price would still find purchasers. The market price of any kind of goods, therefore, tends to be that price which equalizes supply and demand, and is prevented by the forces of competition from going above or below it.

§ 3

Causal Explanation of the General Level of Prices

Let us now apply the principles of supply and demand to the general level of prices. We shall see that much the same kinds of competitive forces which fix any one price (as above explained) in relation to other prices, fix the general level of prices of goods in terms of money. We shall consider, first, the supply of goods, including the services of labor and of "waiting" (*i.e.* investing, or putting capital into use, the service for which interest is paid) offered for money, and the demand for goods by those having money to spend. Afterwards we can reverse our method and consider the supply of and the demand for money in exchange for other goods.

Where there is only fiat (inconvertible paper) money,

the supply of goods in general, offered for money, at any level of average prices of those goods, would be just the same as at any other level of prices. This is very nearly true no matter what the money system.[1] If wheat prices are higher than corn prices, or *vice versa*, productive effort may be diverted from one line into another. But we are now not discussing changes in individual or relative prices. We are discussing only changes in the general level of prices, the average of prices. If the general level of prices should double, there is no reason to believe that the amount of goods produced for sale would on that account greatly increase. Supposing a community to be in reasonable prosperity and business activity at the lower prices, an increase of these prices would not make possible a very greatly increased production. It would not enable men to work longer hours nor would it make machinery more efficient. Neither would it stimulate the sales of goods by making such sales more profitable, since a general rise of prices simply means that money has a less value. If everything should sell for twice as much money as before, the sellers would gain nothing, for the things they desired to buy would also cost twice as much. Looking at the matter from any reasonable point of view, it must be admitted that the supply of goods in general, at a higher level of prices, would be no greater (or but slightly greater) [2] than at a lower level. Likewise, at a lower level of prices, the supply of goods would be no less than at a higher one. A lower level of prices would not mean less activity or a smaller sale of goods. It would pay as well to sell goods at a low level of prices as at a high level, since at the lower

[1] See remainder of this section for explanation of why it is not always entirely true.

[2] See next paragraph.

level the money received would have correspondingly greater purchasing power.

The lower level of prices would only decrease the supply of other goods and the higher level increase it, in one contingency, and then only to a very limited degree. When the currency system is based on a precious metal, *e.g.* gold, a lower level of prices means a higher value of gold as money. It might therefore divert some labor from the production of other goods to the production of gold for coinage. A higher level of prices might tend, in the same degree, to divert labor from gold production towards the production of other goods. To this extent only, a higher level of prices would tend to increase the supply of goods in general other than money, and a lower level of prices to decrease it.

On the other hand, a higher level of prices of goods would tend to decrease the demand for goods by persons having money to spend. For with higher prices, and no greater amount of money to spend, buyers of goods would be unable to purchase as much as at lower prices. Lower prices of goods would mean that the money of purchasers would go farther.

Let us now suppose a doubling of the amount of money. Prices would tend to increase in nearly the same proportion. Suppose prices did not rise. Then purchasers of goods would buy all they were in the habit of buying and still have as much money left to spend as they formerly spent all together. This they would endeavor to spend at once. For in modern countries money is not hoarded away, but only enough is kept on hand for emergency requirements, and the rest is spent. Those who save are spending just as effectually as any others. The difference is in what they buy. Those who save

buy factories, warehouses, railroads, farms, etc. Even though their savings are put into a savings bank, they are none the less spent for investment goods. It follows that a sudden doubling of the amount of money, if prices did not increase, would mean a demand for goods far exceeding the supply. The amount of land is practically constant. Doubling the amount of money would not enable people to work longer hours and so increase the products of labor. In a busy community the supply of goods to be sold simply *could not* be doubled except with an increase of population or invention. The increased money would therefore mean that at the old prices the demand for goods in general would exceed the supply. Purchasers would bid against each other. Prices would rise. Equilibrium would only be reached, supply and demand be equal, at a general level of prices nearly (or, if fiat money, quite) twice that which had preceded.

If prices rose equally, this would mean a doubling in the money wages of labor for the same results produced and, similarly, a doubling in the money interest, dividends or profits received for "waiting." Aside from disturbing effects during the period of transition, the *rate* of interest would be the same with the high prices as with the low. The money value of the sum waited for would be doubled and the money value of the interest would be doubled. The ratio between them would be the same as before. In other words, since prices have doubled, borrowers, for example, would require twice as many dollars as before and would also, of course, pay twice as many dollars in interest.

In the light of the principles above set forth, regarding supply and demand, we can explain why the excessive

amounts of inconvertible paper money sometimes issued by governments, issued particularly in time of war, have resulted in very exceptional rises in the price level. This increased amount of money means, at any level of prices, a greater demand for goods. Therefore, that the demand for goods may not exceed the supply, the level of prices must rise. There is another factor of importance at such times, viz. public confidence in the money issued. If there is a general belief that the money will become absolutely valueless or greatly decrease in value, then many who have goods to sell will refuse to sell them for this money, but will demand gold or silver or other goods in exchange. This decrease in the supply of goods, offered for money, will mean that only a higher level of prices than otherwise would result can equalize supply and demand. Thus is to be explained the high prices (and, reciprocally, the great depreciation of money) in such periods as the American Revolution, the Civil War, etc.

§ 4

Causal Explanation of the Value or Purchasing Power of Money, the Reciprocal of the Level of Prices of Goods

Let us look at the same problem, the general level of prices, from the other side, that of the purchasing power of money or the value of money in terms of goods. We shall consider now the supply of money offered by purchasers of goods (corresponding to demand for goods) and the demand for money coming from sellers of goods (corresponding to the supply of these goods).

Before defining supply of and demand for money, we must select a phrase to express the price of money. The value or price of money is usually expressed, not in terms

of any one thing, but in terms of all, or most other, purchasable goods. Its value or its price is measured in the amount of other goods it can buy. The value or price of money we shall therefore call the purchasing power of money.

We may now define money supply and demand consistently with wheat or coal supply and demand. First, as to supply, we may say that *the supply of money at any given purchasing power is the amount of money which would be supplied* — *i.e.* would be offered in purchase of goods — *at that purchasing power*. Just as, at a higher price of wheat, the supply in the long run would tend to be greater than at a lower price, so, at a higher purchasing power of money, the supply of money would tend to be greater than at a lower purchasing power. The supply would be greater at a higher purchasing power, because, at a higher purchasing power, it would be worth while to turn bullion into coins or even to mine more gold for that purpose. The supply of fiat money (irredeemable paper) would not be greater, but would be just the same at a higher purchasing power as at a lower. The normal supply of money at any purchasing power and during any period of time, the amount that would be offered by sellers of money (*i.e.* buyers of goods) involves, as Walker has pointed out,[1] the quantity of money and its rapidity or velocity of circulation. This velocity of circulation may be less than unity; that is, most of the money may circulate less than once if we are dealing with an instant or a short period of time. But if we are dealing with a long period of time, say a year, and with the conditions determining normal purchasing power, the velocity will

[1] *Political Economy*, Advanced Course, third edition, New York (Holt) 1887, p. 129.

perhaps be 20 or more.[1] In any case, the supply, the amount that would be offered at any given purchasing power, is the total amount which, at that purchasing power, would be on hand, multiplied by its velocity; and it may be represented, therefore, as MV.

Turning to the subject of demand, we may properly define the demand for money, at any purchasing power, as the amount of money that would be taken by sellers of goods, at that purchasing power. The demand for money comes from the sellers of other goods who wish to take money in exchange for those goods. They may be said to buy money with the goods they sell. When the money is altogether fiat (inconvertible paper) money, the amount of goods offered for money will not be affected by the purchasing power of money. With an exception shortly to be noted, this is also true in the case of such a commodity money as gold or silver. That the purchasing power is at any time greater or less, provided only it is not fluctuating, affects neither for good nor ill the sellers of goods. If the purchasing power of money is greater, they will still sell their goods as readily for money since the smaller amount of money so received will go as far as would a larger amount having a smaller purchasing power per unit (*e.g.* per dollar). But their demand for money, in the proper use of the term "demand," will not be the same. If the purchasing power of money is doubled, demand for money will be exactly halved. If the purchasing power of money is halved, demand for money will be doubled. Sellers of goods will take all the money which the goods they desire to sell will bring. If, therefore, the purchasing power of money is halved,

[1] See Fisher, *The Purchasing Power of Money*, New York (Macmillan), 1911, p. 290.

i.e. if it takes twice the former amount of money to buy the same goods, then the demand for money, the amount sellers of goods (buyers of money) will take, at this purchasing power, will be exactly doubled.[1]

The exception to be noted has already been referred to in the discussion of the general level of prices.[2] It occurs when money is based on some standard commodity, as gold, having an appreciable cost of production. To double the purchasing power of money would, in fact, probably reduce the demand for it to something very slightly less than half what it had been, for a small (relatively a *very* small) amount of labor would probably be diverted from the production of other goods to the mining of gold. Therefore, unless the value of money more than doubled (*i.e.* unless money prices of goods became less than half), the money which would be taken by sellers of the somewhat smaller stock of goods would be less than half as great. Similarly, a fall of half in the value of money would very probably divert some labor from gold mining into other lines, and so might slightly more than double the demand for money. For every one would be ready to sell his goods at twice the former price, and there would be more goods to sell. Normal demand, therefore, for money, *i.e.* long-run demand, cannot be distinguished by any exact proportion from demand for other goods. But when the money does not involve an appreciable cost of production, but is inconvertible paper, or, for any money, where an extremely short period is involved, the demand for money varies inversely with its purchasing power.

[1] Were it not for the exception next to be mentioned, the demand curve for money would be always a rectangular hyperbola.

[2] § 3 of this chapter (I of Part I).

The demand for money by sellers of goods may be said to be the money value at which they would sell those goods; therefore, the prices times the quantities; therefore, $pq + p'q' +$ etc. The purchasing power of money is fixed where supply is equal to demand, where $MV = pq + p'q' +$ etc. The equation of exchange may be regarded as simply a mathematical mode of stating that the p's, the purchasing power of money, must be such that supply of money equals demand, *i.e.* that $MV = pq + p'q' +$ etc.

§ 5

The Theory of Bimetallism

The laws of supply and demand serve to explain the effects of the various monetary systems which have been tried in different countries. Important among those monetary systems is bimetallism. Bimetallism involves the concurrent circulation of two metals at a fixed legal ratio. Both metals are coined by government, for those bringing the metals to the mints, in any desired quantity, and coined without charge or for the mere cost to government of coining. Both metals, when so coined, are legal tender for the payment of debts and taxes, at the value ratio fixed. Thus, bimetallism at 16 to 1 meant, for the United States, that the amount of silver in the silver dollar should be approximately 16 times the amount of gold in a gold dollar, that gold and silver should both be coined freely and without limit, and that a debtor should be able to liquidate the same debt with 100 silver dollars as with 100 gold dollars.

Bimetallism may succeed if the legal ratio is not too far from the market ratio of values existing when the system

is started. If the amount of silver in the legal silver dollar is worth 98 per cent as much as the gold in the gold dollar, or 98 cents, then the system may succeed.[1] It will succeed because the possibility of using 98 cents' worth of silver, if coined, to pay a $1 debt (or tax) previously payable in gold,[2] will stimulate the coinage of silver. This extra demand for silver will increase its value. Otherwise expressing the matter, we may say that the withdrawal of silver from the arts, tending to cause a decreased supply of silver for arts uses, will increase its value. The greater quantity of money will tend to make somewhat higher prices and a somewhat lower value of a dollar (whether gold or silver). This may discourage the coinage of gold or even cause the melting of some gold coin into bullion. We may say that the less demand for gold has made its value fall, or that the melting of gold coin and the consequent greater supply of gold in the arts has made its value fall. The sequence is, then, flow of silver from bullion into coin, slightly depressed value of coin, flow of gold from coin into bullion. Silver has risen in value. Gold has fallen. Probably the silver dollar is, therefore, now worth the same as the gold dollar instead of 98 per cent as much. If the bullion content of the gold dollar came to be of the less value, debtors would prefer to coin gold and the flow would be in the opposite direction, but likewise towards the establishment of equilibrium.

Suppose, however, that the amount of silver in a silver dollar is worth only 40 per cent of the gold dollar (which was more nearly the case with the silver dollar when its

[1] Cf. Fisher, *Elementary Principles of Economics*, pp. 230, 231.

[2] Or money, on a parity with the gold, other than silver money coined for account of the debtor.

free coinage was advocated in 1896). Then the danger would be that, long before the increased demand for silver as money and its decreased supply in the arts, coupled with the decreased demand for gold as money and its increased supply in the arts, had brought about the desired equilibrium of value, the gold would be entirely driven out and the money used would simply be silver instead of gold. The whole question would be whether the scarcity of silver in the arts and the plentifulness of gold in the arts would be sufficiently marked to make the relative values the same as in the legal ratio, before silver enough had been taken from the arts uses to fill all the money circulation; and then, whether sufficient additional supplies of silver could be got from the mines to drive out the gold without forcing the margin of production unprofitably low, *i.e.* without mining, at a loss, from poor mines.

For one country alone, the prospects of success in establishing bimetallism would be much less bright than for a group of important commercial countries. For if one country tried it alone, endeavoring by free coinage to make 40 cents' worth of silver equal to $1 worth of gold, it would have to absorb into its currency, not only silver from within its own borders, but silver flowing to it from all the world, and its own demand in relation to such a great supply might increase the value of silver relatively little. And, as the silver drove out the gold, the latter would not fall rapidly in value through congesting the arts, but would be distributed to the money supplies, as well as the arts, of all other countries.

§ 6

The Value of Subsidiary Money

At the present time, in the United States, France, and elsewhere, there exists the so-called limping standard, *i.e.* there are silver coins the bullion value of which is not equal to their face value, but the amount of which is strictly limited. In the United States, there are a certain number of silver dollars and silver certificates. The silver in the silver dollars is worth perhaps about half of their face value. But they cannot drive out gold because not enough are coined to produce such a result. Any money, even paper, if put forth in very limited quantities and made legal tender for the payment of debts and taxes, may circulate at par with gold. The possibility of using it for debts and taxes creates a demand for it, and others will take it because they in turn can pass it to those having such uses for it. A general public confidence in and willingness to take it at the legal value, is developed. On the other hand, the limitation of its quantity means a limited supply. The demand for it equals this supply, at a value equal to par. Where a limited amount of money is issued by coining metal of less value than the money, or by printing paper, this is done by government exclusively on its own account. Otherwise there would be special favor shown, at the general expense, to those persons for whom the coining was done.

Making paper or other money redeemable in gold is merely a way of making the forces of demand and supply automatic in keeping up the value of such credit money.[1] If for any reason, *e.g.* overissue or lack of confidence, the value of such money sinks below the value of the gold

[1] Cf. Fisher, *The Purchasing Power of Money*, pp. 262–263.

in which it is redeemable, the holders of the paper money at once present it in large quantities for redemption. This immediately decreases the supply of it, and thus automatically prevents its entire driving out of gold. Prompt redemption at the same time gives confidence and so maintains a demand for it. But the limitation of supply, automatic or otherwise, is important, for no amount of confidence can prevent a fall in the value of money which increases indefinitely in quantity. An increase in gold itself tends to raise prices and lower the value of gold. An increase of paper money tends to increase prices in paper. Redeemability prevents prices in paper from ever rising higher than prices in terms of gold.

In the case of paper money, the receiver is really a creditor. He gets a credit claim, not real wealth. The paper money evidences a right based on its general acceptability, or on its redeemability by government, to an amount of wealth or income services equal to the value of the money. The issue of paper money is a species of borrowing by government; but no interest is paid, because the holder, unlike the holder of government bonds, has, if the money is generally acceptable, a demand claim. He does not need, therefore, to wait for his desired goods any longer than he wishes to, but can spend the money and get goods at any time from another, who can do likewise with a third, etc. He does not need, therefore, to be in the position of a creditor longer than his own convenience dictates. The general acceptability of such money, if it is generally acceptable, makes the holder willing to forego any other interest.[1]

The money of the United States includes gold and silver

[1] See Ch. II (of Part I), §§ 3, 4.

coins, gold certificates, silver certificates, United States notes (greenbacks), treasury notes, and subsidiary coins (quarters, dimes, etc.). There are also bank notes, but these may be better considered, along with other bank credit, in the next chapter. All the paper money except silver certificates is redeemable by law in gold. Silver certificates are redeemable in silver. No law expressly makes the silver dollars redeemable in gold; but it is the duty of the Secretary of the Treasury to maintain the parity of the silver coinage with gold, and in practice any kind of our money is exchangeable at the United States Treasury for any other kind. Even without this practice, the limitation on the number of silver dollars and their full legal tender quality would doubtless maintain them at par value, although the value of the contained bullion is much less.

§ 7

The Value of Money as Related to the Value of a Standard Money Metal

Most countries have now the gold standard. All money is redeemable in or in some way related to gold, and the value of money tends to equal the value of the mint equivalent in gold. So long as gold is coined freely, and in any quantity desired, into money, the value of gold as money and as bullion must be the same. For if gold coin came to have more value than gold bullion to be used in the arts, then persons having gold bullion would hasten to get it coined. The consequent increase of money would raise the prices of goods and lower the value of money. The decrease of gold for use in the arts would increase its value in that use. Equal value in the two uses must soon be reached. If, on the other hand,

gold as money should have, at any time, a less value than the same amount of gold as bullion, then all newly mined gold would be used in the arts and little or none coined, until gold in the arts was so plentiful and money so scarce as to make the values even again. Gold money, if full weight, might even be melted into bullion, if it were worth enough more in the latter use to pay for the trouble.

Eventually, then, since, when the gold standard is in force, the value of money and the value of gold bullion tend to be the same, both depend upon the amount of gold mined relative to the use for it. The cost of production of gold, and, therefore, the number and richness of gold mines, is not without an influence, in the last analysis, on the level of prices, and on its reciprocal, the purchasing power of money.[1]

§ 8

The Level of Prices and the Value of Money in One Country or Locality as Related to the Level of Prices and the Value of Money in Another

Before concluding this chapter, something should be said regarding the relation of the quantity of money and prices in one locality or country to the quantity of money and prices in others.[2] The subsidiary and credit money of one country is commonly not received in other countries. Gold or silver (at present, with the gold standard general, chiefly gold) is passed from one country to another in payment for goods or services or to redeem obligations.

[1] These facts are mechanically expressed in Fisher, *The Purchasing Power of Money*, pp. 96–111.

[2] For a fuller statement see Fisher, *The Purchasing Power of Money*, pp. 90–96.

Between different countries, the gold passes only by weight, but since gold coin and bullion are related in all gold standard countries, the effect of the flow of gold from one country to another is to decrease, relatively, the quantity of money in the one and to increase it, relatively, in the other. Between parts of the same nation, all legal tender money, whether gold, silver, or paper, passes freely.

What are the laws of this flow? Obviously, money, like all things else, flows to those places where it has the greatest value, where it can buy the most of other things. That is, money flows from those places or countries where prices of goods are high, to those places or countries where prices are low. Goods are bought where they can be bought the cheapest. Money goes to pay for the goods. Hence, money flows to those places where there are low prices. But low prices means high purchasing power or value of money. Therefore money flows to those places where its value is high. When, however, one country has an inconvertible paper money unrelated to the money of another, no such flow can take place. When paper money is first issued in one country it tends, by raising prices, to cause purchases abroad, where prices have not thus been raised. As the paper money is not legal tender elsewhere, gold must be sent to pay for the goods thus bought. The continuing issue of paper money may drive all the gold out of the currency of the country issuing the paper. Until it does so, the effect on prices applies to other countries as well; the effect is distributed over all. Though the paper circulates only in the issuing country, it displaces gold and pushes the gold into other countries. But, when enough paper money has been issued completely to drive out

gold, no such further effect on other countries can be produced. Trade will still take place.[1] Commodities of one sort are bought and commodities of another sort are sold. Gold itself may be traded back and forth. But the currency of the one country is absolutely unrelated to the currencies of others.

§ 9

Summary

In this chapter we have been concerned chiefly with the laws of money, an important part of the mechanism of civilized commerce. We saw, first, that the general level of prices of goods varies, other things equal, with the quantity of money. This fact was mathematically expressed in the so-called "equation of exchange,"

$$MV = pq + p'q' + \text{etc.}$$

Analysis of the causal relations between quantity of money and prices led us to demand and supply and the ordinary forces of competition as an explanation. It was seen that increased money involves higher prices of goods to equalize supply of and demand for those goods, and, conversely, a lower purchasing power or value of money, to equalize supply of and demand for that money. Supply of money might be determined by government in the case of inconvertible paper but is generally a matter of the production of the precious metals, especially gold. The possibility of successful bimetallism was shown to depend upon the ratio chosen and the relative amounts of money of each metal available under that ratio. Supply and demand acting through the money and bullion markets tend to bring market ratio to equivalence with

[1] See Ch. VI (of Part I), §§ 7, 8.

legal ratio, but may not have the effect of doing this before one metal is driven out of circulation. The limping standard and paper money were shown to depend upon limited quantity of the paper money or the over-valued (in comparison to weight) silver (or other metallic) money, and upon their legal tender qualities. The supply is limited; the demand kept up. Redeemability automatically tends to prevent oversupply of credit money or that loss of confidence which decreases demand for the money. With free coinage of gold, the value of gold as coin and as bullion tends to be the same. Finally, we saw that the flow of money from place to place or country to country is a flow from where it is cheap to where it is dear, from where it buys little to where it buys much, from where prices of goods are high to where they are low.

CHAPTER II

THE NATURE OF BANK CREDIT

§ 1

How and When Credit Takes the Place of Money

CREDIT is given whenever goods are sold for a promise to pay, for a tacit obligation to pay later, or for some form of claim upon a third party such as a bank. The characteristic of all credit is the fact that the person disposing of goods to another does not immediately receive payment in the form in which he is entitled, ultimately, to receive it; but receives, instead, a right to future payment, a right commonly evidenced by some kind of commercial paper. Most frequently this evidence is the check on a bank, showing the title of the receiver or payee to money from the bank on demand; or the bill of exchange, showing a title of the payee to money from the drawee, sometimes on demand and sometimes on a definitely agreed date.

The term "currency" we shall use generically to include money, which is generally acceptable in exchange for other goods, and those credit rights, less generally acceptable, which are, nevertheless, largely used as media of exchange and therefore serve as money substitutes. Such credit instruments as checks, bills of exchange, and promissory notes, act as substitutes for money only if the rights to the sums which they have reference to are transferred to third, fourth and other parties. Only in such

cases, therefore, can these credit instruments or the rights which they certify be considered as currency. If a promissory note is given by one person to another and kept by the second until maturity, the use of the note merely means that money is paid from the one person to the other at a later date instead of an earlier. There is no saving of the use of money in the sense that credit takes its place. But if A owes B $100 and B owes C the same sum, and if A's promissory note to B is used by the latter to pay C, then the use of money is to some extent avoided. A eventually redeems his note by paying C the money. Money is passed once instead of twice.

The ordinary check, sometimes called the "customer's check," is similarly used. A may give to B a check for $100. B, though he does not perhaps use the same check to pay C, uses the same demand right or claim on the bank. He sends in the first check and has it credited to his account. Then he gives his own check to C. C may collect from the bank or may in turn pay a fourth party by check, and so on. In practice, the sums owed by the different parties will probably not exactly balance. B may pay C by giving the latter a check evidencing the right to draw the sum received by B from A plus other sums received by B from D, E, F, etc. But however this may be, the principle is the same. Thus, the bank deposit, or right to draw from a bank, takes the place of money in effecting exchanges of goods or services. The use of bills of exchange also facilitates the balancing off of obligations against each other, without the payment of coin.[1]

[1] See Ch. III (of Part I), § 1.

§ 2

How Commercial Banking is Carried On

Credit instruments, or credit rights — for the paper is in each case but evidence of the underlying obligation — act as substitutes for money primarily through the intermediation of commercial banking,[1] and foreign exchange banking. Commercial banks constitute an important part of the mechanism of trade. Their work facilitates internal trade and, in connection with the work of foreign exchange banks and brokers, facilitates external trade as well. It is estimated that nine tenths of the total business in the United States is carried on through the use of bank credit.[2]

Bank deposits (rights to draw from a bank or banks), which circulate by means of checks, may come into being in any one of several ways. One may become a depositor by directly depositing money (or the right to draw money, received by check from some one else, but this merely registers a transfer of a deposit and does not create one). One may become a depositor by borrowing from the bank in which the deposit is to be. If A goes to his bank and leaves there $50,000 cash, he thereupon is said to have deposited such an amount in the bank and can draw on this sum at will by issuing checks against it in favor of any persons to whom he wishes to make payments. But A may also go to the same bank, give his endorsed note or other satisfactory security, and borrow $50,000. This money he leaves on deposit. The bank is then said to lend its credit. What A has bor-

[1] Savings banks and investment banks perform, of course, important functions, but do not have a part in providing a substitute for money.

[2] See Fisher, *The Purchasing Power of Money*, New York (Macmillan), 1911, pp. 317, 318.

rowed is not money but the right to draw money by check, at will. The bank is under as much obligation to redeem his checks on demand as if he had directly put money into the bank. On the other hand, A is under obligation to pay the bank, when his note matures, the amount borrowed plus interest.

It should be readily apparent that a bank can, in ordinary times, redeem all checks presented for redemption, without keeping for that purpose a cash reserve which at all nearly equals its liabilities. The total value of deposits which a bank is under obligation to pay out on demand, may be $500,000. Yet it is certain that all the depositors will not call for their money at the same time. Instead of drawing it out, most of them send checks back and forth to and from others who do likewise. A cash reserve of $100,000 may be ample. Putting the matter in the opposite way, we may assert that if there is $100,000 in cash in such a bank, the bank can lend its credit, *i.e.* more deposits or rights to draw, to the extent of (say) $400,000.

We have said that different depositors in a bank liquidate their obligations to each other by giving checks. There is, then, simply a change on the bank's books. Any amount of obligations can be thus balanced. Different persons are made successively creditors of the bank for larger or smaller sums. The situation is complicated, but the principle is not changed, when depositors of different banks have business dealings with each other. In this case, which is a decidedly usual one, the banks become successively each other's debtors and creditors and have to settle through a clearing house. Bank A may have accepted and paid cash for, or credited to depositors, many checks on Bank B. Bank B therefore

owes Bank A. Similarly, Bank C may owe Bank B, etc. All of these complicated obligations are balanced by a clearing house, so that each bank pays what it owes net or receives what is owed to it net, and a great deal of flow of money is avoided. In other words, the principle of cancellation is applied whenever possible between banks, just as it is in any one bank to the depositors in it.

§ 3

Analysis of Relations Involved in Commercial Banking

But our analysis of the nature of commercial banking is not complete until we go back of the banks and examine the relations to each other, through the banks, of those who deal with the banks and with each other.[1]

When a man borrows from a bank (giving proper security and receiving credit on the bank's books), he is getting command over present wealth in return for a promise to repay wealth in the future. Those who provide him with this present wealth must *wait* before being repaid. Lending always involves giving up something now and getting something in the future, *i.e.* lending always involves waiting.[2] In order, then, that any one may borrow from a bank, some person or persons must be the lenders, must be ready to give up goods in the present for goods in the future, must *provide waiting*. The bank itself is, for the most part, only an intermediary. It brings together a supply of waiting, but it does not, to any considerable extent, furnish that supply. It places

[1] The argument of this and the following section is substantially the same as that presented by the writer in the *Quarterly Journal of Economics*, August, 1910, in an article entitled "Commercial Banking and the Rate of Interest."

[2] Though there may also be waiting where there is no lending but only investing.

loanable funds at the disposal of borrowers, but it is not itself the ultimate lender.

The persons who provide the waiting, *i.e.* who are the real lenders, may be divided into two classes: (*a*) those who, in return for goods, receive checks from borrowers of the banks (or personal notes or "acceptances," which the banks discount[1]). (*b*) Those who have deposited money in the banks.

Both of these classes have claims on the lending banks, claims which, taken all together, cannot be redeemed by the banks except as those who have borrowed, those who are indebted to the banks, make good the claims of the banks on them. When a man has accepted a check from one who has borrowed of a bank, and has given goods in exchange for this check, he has actually given present wealth in exchange for a mere right to draw on the bank. He may, therefore, so long as he does not exercise this right, be regarded as a lender. If he passes a check for a like amount to another, in return for goods, the other becomes the lender, since this other now has the right to draw, and has given up for it present wealth. If, instead of passing a check to another, the original payee avails himself of this right to draw, taking money from the bank, then some one who has deposited cash in the bank vaults may be looked upon as the lender, since his money has been taken from the bank and the borrower is expected to make good the subtraction. Thus, either the original receiver of a deposit right from a borrower, or some one to whom he passes this right, or some depositor whose cash is withdrawn to redeem the check, may be regarded as a lender. One person after another holds, for a time, the right to draw money from

[1] See § 4 of this chapter (II of Part I).

a bank, and delays using that right. In the aggregate, there is a very great deal of such delaying or waiting on the part of persons who are entitled to money whenever they desire it, but who do not find it convenient to claim it at once. Each of them knows that he can collect from a bank, at will, or can pass his claim to another, at will, for any desired goods. Yet commonly there is an interval during which such a person remains a creditor or lender, preferring the convenience of an available bank account to the immediate possession of other goods. Commercial banking has as a function to combine and coördinate such sporadic potential lending or sporadic waiting, so as to put at the disposal of borrowers a sum total of actual lending which is fairly constant in amount. If A leaves his claim on a bank untouched for one week, B for two weeks, and C for a week and a half, because convenience so dictates, why may not D, in the meanwhile, be using the capital which they do not yet wish to use? By bringing all these parties together, commercial banking enables D to get the use of capital without at all inconveniencing A, B, or C. Each of these can get his capital to use whenever it is convenient, but, in practice, all of them will not want it at the same time.

It may be objected that the foregoing treatment is too concrete to be true. In any individual case of borrowing, it is perhaps not legitimate to pair off each borrower with one or more ultimate lenders, assuming that a particular holder of a deposit (or two or three such) is the real lender to some special borrower. Banks bring together borrowers and lenders in large numbers, and there is no logical way to assign two or more into pairs or small groups. But it cannot be denied that if the total of loans is taken, the ultimate lenders are the total number of acceptors of

checks and depositors of money, both of which classes are depositors in the broad sense, because both are possessors of the right to draw. Since the receivers of checks are as much holders of rights to draw, that is, of deposits, as are the cash depositors, we may say that all the borrowers are in debt to all the holders of deposits and that the latter are lenders to the former. When a borrower of a deposit has not transferred it, he may be regarded as indebted to himself, since his right to draw may be regarded as in the main backed up by his own promise to pay. The interrelations of banks through a clearing house merely extend these relations to persons depositing in, borrowing from, and receiving checks on, other banks. The principles are the same as in the case of a single bank.

The upshot of the matter is that modern commercial banking makes it possible for men to do business with each other by becoming, successively and alternately, through the banks as intermediaries, each other's debtors and creditors; while yet no one of them needs to remain a creditor or lender longer than suits his convenience.

§ 4

Why Commercial Banking Commends Itself to Business Men, both as Lenders and Borrowers, so that Commercial Bank Credit becomes a Substitute for Money

Thus bank credit acts as a substitute for money. Its use is simply a process by which persons become, so to speak, successively each other's creditors, in such way as ultimately to cancel obligations with only a little use of cash. But we have yet to see, fully, just why bank credit is able to displace money, to a large extent, as a medium of exchange. It does this by conferring an

advantage upon both borrowers and ultimate lenders. Ultimate lenders, as such, are benefited by the convenience of a banking service for which they do not have to pay. Borrowers are benefited in that they can borrow on better terms from banks than would otherwise be possible.

We have already seen that commercial banking combines and coördinates waiting which would in any case be done. Such waiting includes, for example, the waiting done by a man who has money in his pocket which he intends to spend. It may be a long time before he does spend it, but he knows that at any time he may spend it, and when it is convenient he will do so. Practically everybody finds it desirable to keep part of his assets in ready cash, to use as occasion may require. The convenience of having the ready cash compensates for the loss of the interest that might be received from various investments, and so may perhaps be regarded as, itself, a kind of interest. The same holds true of bank deposits subject to check demand. Business firms must keep part of their assets in such form as to be able to meet current expenses and occasional emergencies. They usually keep considerable amounts to their credit in some bank. Even in the absence of banks, money would have to be kept on hand, and there would be a great deal of sporadic waiting remunerated only by the convenience of having cash on hand when wanted.

The lender, therefore, that is, for example, the receiver of a check on a bank, who becomes a depositor and supplies waiting, is not injured but rather is benefited by commercial banking. He can draw upon his account at will, and this account is both safer and more convenient (especially for making large payments and payments of

odd sums) than the equivalent of ready cash would be. There are, consequently, many persons who would be and are lenders, without any further payment of interest than the deposit service of banks. The lending involves, in each case, only such waiting as is convenient and as would be done anyway. And it is more satisfactory to have the bank deposit, thus making this waiting available as lending, than to keep all quick assets in cash. From the side of the ultimate lenders, there is no difficulty in seeing how bank credit may be substituted for money, to a large extent, with advantageous results. It should be noted that the ultimate lenders are, by making their waiting available to borrowers, really adding to the wealth-producing efficiency of the community. Were it not for this bank credit, *i.e.* this combination of sporadic waiting, borrowers could only be similarly provided for by the use of money. But a quantity of money corresponding to such possible bank credit, supposing the money to be of standard money metal, *e.g.* gold, would be a tremendous capital investment and would involve, therefore, great expense. An equivalent additional investment in other capital, if made possible by a partial substitution of safe bank credit for specie money, is more profitable to the community. The same total amount of capital is thus made to produce larger results.

Let us now consider the interests of the borrowers. They also will be ready to encourage the system, because it enables them to secure loans at relatively favorable rates. The banking system combines and coördinates, as we have seen, a great deal of waiting which would be done in any case. This it puts at the disposal of short-term borrowers, so adding to the supply of loans. If borrowers will avail themselves of these loans, which will,

obviously, on the principles already set forth, take chiefly the form of bank credit rather than of cash, a lower rate of interest becomes possible. But it becomes possible only because borrowers are making use of waiting which would in any case be done, only because such use enables society to get along with less of other currency, presumably with less of gold, and so enables a larger amount of society's total capital to be held in other forms.[1]

These conclusions apply no less when the formal arrangement is somewhat different. Not infrequently A buys goods for which he gives his promissory note to B. B endorses this note and deposits it with his bank, and thereby secures a deposit account. The bank is under obligation to honor B's checks upon it for the amount for which A's note was discounted. But A is under obligation to pay the bank. Taking a large number of such transactions, we may say that all the makers of notes so deposited, along with other debtors to banks, are in debt to all the holders of bank deposits, and that the latter are creditors of the former. Business takes place by means of different persons assuming, successively, the position of creditors, through the banks as intermediaries, to such persons as A. The fact that sporadic waiting is brought together, undoubtedly tends to give A's personal note more value, *i.e.* makes the interest

[1] The same principle applies to government paper money, as was shown in Chapter I (of Part I), § 6. In that case, the government is the borrower and pays no interest. So far as bank credit makes impossible the issue of so much paper money by government, the lower interest to borrowers from banks does not involve economy in the use of gold and lower average interest. For then the government itself, having to borrow by issuing more bonds than would, perhaps, be necessary if it issued credit money, must pay interest which, otherwise, it would not have to pay. This conclusion does not mean, of course, that inelastic government paper money is to be preferred to elastic bank credit; nor does it mean that government paper money is to be preferred to bank credit, on other accounts.

he has to pay somewhat lower. The bank can give more for the note than it otherwise could, just because its own creditors will not all want cash at once, just because its lending power (for the bank is making itself a creditor of or lender to A) is made greater by the existence of the sporadic waiting which it has combined; and since the bank can give more for the note to B, B can give more for it (in goods) to A.

The principle is the same if B deposits, not A's promissory note, but a bill (or draft) on A, payable in some 30 or 60 days, for goods shipped to A. This draft will be presented to A for his signature as soon as possible. That is, A will be expected to acknowledge his indebtedness by "accepting" the draft.[1] The bill (or draft) thus becomes, in effect, A's promissory note indorsed by B.

In Europe, particularly in England, still another method of securing bank credit is common. This is the method of bank acceptances.[2] The would-be borrower, A, instead of directly borrowing of his bank a checking account, or instead of giving his creditor, B, a promissory note, for deposit, if desired, in B's bank, or instead of having B make out a draft directly upon him, gets some bank to agree to "accept" (*i.e.* become responsible for the payment of) drafts which B may draw upon this bank up to an agreed amount. A can then pay to B whatever is owing to the latter, by arranging to have B draw a draft upon the bank with which the agreement has

[1] For fuller discussion of such "bills of exchange" and their security, see Ch. III (of Part I), § 7.

[2] For a description of acceptances and a study of their effects, see Lawrence Merton Jacobs, "Bank Acceptances," National Monetary Commission, 1910. See further, also in National Monetary Commission, Paul M. Warburg, "The Discount System in Europe," pp. 7–13.

been made. The bank in question will undertake to pay the draft when it becomes due, say in 60 days. But the agreement is that before it does become due, A shall provide the bank with the necessary funds. The bank with which the agreement is made, guarantees payment to B, but does not expect to draw upon its own resources in making such payment. B can deposit the draft with his own bank for credit. B then has a right to draw from his own bank on demand; his bank has a claim upon the bank with which A made the above described arrangement; and this bank has a claim upon A. B, or those receiving from him checks upon his bank, may be regarded as the ultimate creditor or creditors; A is obviously the ultimate debtor. The banks are intermediaries. Also, the banks have brought together the waiting of those who successively, for periods dictated by their own convenience, become creditors of the banking system by receiving checks or deposit rights based on the draft for which A is ultimately responsible. Further, the fact that this sporadic waiting is made available as actual lending, means that B's draft on the bank will be discounted at a somewhat lower rate than it otherwise probably could be, and will therefore bring a better price. Since the draft for a given sum has thus a somewhat higher value to B than it would else have, the latter will be ready to charge A in payment for any definite amount of goods sold, a somewhat lower price than otherwise. In effect, because of the waiting made available by the banking system, A borrows at a lower rate of interest. The same principle is involved if, as frequently happens, A himself draws a draft upon a bank which agrees to "accept" it, and sells it to another bank for credit. Those who receive A's checks on this

credit, in payment for goods, are then the ultimate lenders in the sense above explained.

Whatever the formal arrangement by which bank credit is utilized, the charges to the borrowers or debtors (for, in the last analysis, it is always the borrowers or debtors who pay) must be enough to cover the cost of banking service. These charges must remunerate the banks for concentrating waiting where it has the greatest usefulness. They must cover salaries of bank officials, depreciation of bank property, interest on the capital invested by the banks themselves, and compensation for the risk to the banks, of insolvency, for the banks, though chiefly go-betweens or intermediaries, do nevertheless *insure* the credit of borrowers. If all the borrowers failed to make good, the banks must fail; but within limits the banks can and do guarantee depositors. This they do, largely, by maintaining cash reserves of perhaps $\frac{1}{10}$ to $\frac{1}{4}$ of their deposits, according to conditions and the requirements of law, from which they can liquidate as many of their demand obligations as are likely to be suddenly presented for payment at any one time. On these reserves, as on their other capital, the banks expect to realize a reasonable interest.

In other words, the payments made by borrowers must cover the cost of banking plus a fair return on banking capital. These payments would not do this if the demand for loans from banks were very small, and if such demand could be sufficiently met by the funds of depositors who would be willing to pay the cost of banking, for the sake of the convenience of banking service. The demand for bank loans, however, is far in excess of what could be supplied by means so trivial, and is, indeed, sufficient to throw upon borrowers or

debtors as such, the whole cost of banking service. When those who, through the intermediation of banks, are the ultimate lenders or creditors, have become such by having the promissory notes of or drafts on their debtors discounted, the creditors may seem to be paying the cost of banking. But, in such cases, they have, presumably, made allowances for the bank rate of discount, in the prices they have charged for goods sold, and the debtors, therefore, really pay for the services of the banks.

The payments by borrowers or debtors may be regarded, then, as real interest payments in the sense that the ultimate lenders profit by the existence of a place of deposit other than their own vaults, for which they do not have to pay, and profit further by the facility of check payments thus made practicable. If no money interest is received by the ultimate lenders, the amounts paid by borrowers are, in the long run, because of the competition of different banks, determined by the labor cost of rendering the service, plus the interest (including compensation for risk) on the cost value of the machinery, such as buildings, necessary reserves, etc., used in bringing borrowers and real lenders together. If, however, there is not a sufficiency of this "convenience waiting" to be had to supply the demand for loans at the mere cost of concentration, then the banks will bid against each other, not so much to cut down the charge for the service performed for borrowers, as to get deposits. Hence we are beginning to see direct interest, though at low rates, very generally offered on deposits subject to check, either on monthly balances or otherwise.

§ 5

Application of Principles Arrived at, to Bank Notes

The same principles apply to bank notes as to bank deposits. The bank note, when issued on the sole responsibility of a bank, is, like the deposit, a credit obligation of the bank to the holder. The holder is entitled to specie or other legal tender money on demand. As with deposits, these rights to draw circulate from hand to hand in payment for goods. And as with deposits, the real lender or creditor is the person who receives the bank notes, which represent only a claim in payment for goods sold; while the ultimate debtor is the person — or the persons — who has borrowed the bank's credit in this form, either directly or by any of the methods just described in relation to deposits, and is under obligation to repay. The bank is a legally responsible intermediary, but is chiefly dependent, in the long run, for means to redeem, on repayment of loans by its debtors. The bank, in the main, is merely an intermediary, although, as with deposits, part of its own capital serves as an insurance fund to cover all contingencies which are reasonably likely to occur.

But the holders of bank notes are frequently given, by government, greater protection against loss than the holders of deposits. In Canada, for example, the note-issuing banks have to contribute to a special reserve fund to redeem the notes of failed banks, besides which note holders have a prior lien. In the United States, note holders are insured against loss by the Federal government, which makes itself ultimately responsible for all notes issued in conformity with the national banking law, and, therefore, for all bank notes issued, since a

10 per cent tax on other bank notes effectually keeps them out of circulation. The notes issued by national banks are based chiefly [1] on government bonds. Each national bank must have purchased bonds of the United States, the par value and also the market value of which shall be at least equal to all its notes in circulation. These bonds must have been deposited with the Comptroller of the Currency. The banks must also have deposited in cash a redemption fund of 5 per cent of the face value of their notes. In consideration of these safeguards, the United States assumes ultimate responsibility for the redemption of the bank notes in case of the failure of any bank, and, in fact, undertakes to redeem the notes currently for those persons presenting them, out of the 5 per cent redemption fund. These bond-secured bank notes will, however, be gradually withdrawn over a period of years. The recent Federal Reserve Act permits their gradual retirement and, in addition, the 2 per cent government bonds, on which alone they can be based, may, as they mature, be permanently withdrawn. The recent Federal Reserve Act, however, creates from eight to twelve [2] Federal reserve banks through which Federal reserve notes shall be issued. Back of these the Federal reserve banks must keep a 40 per cent gold reserve, of which not less than $\frac{1}{8}$, or 5 per cent, shall be in the Treasury of the United States. These notes are to be, in each case, a first lien upon the assets of the bank through which they are issued. But the government makes itself ultimately responsible for their redemption. The notes

[1] The provisions of the Aldrich-Vreeland emergency currency measure will shortly be superseded by those of the Federal Reserve Act of 1913. The Aldrich-Vreeland Act cannot be availed of after July 1, 1915. The new law is already (August 1914) being put into operation.

[2] Made twelve by the Organization Board.

are issued to the Federal reserve banks for them to lend out, at the discretion of the Federal Reserve Board, a government regulating body. They partake in part of the character of government paper money and in part of the character of bank notes. It is customary in European countries also, to safeguard especially bank notes as contrasted with deposits. The holder of a deposit is supposed to become a depositor only deliberately and after consideration of the financial soundness of his chosen bank. But bank notes circulate from hand to hand as "money," are received often in the form of wages by the comparatively poor, and are not usually scrutinized to see from what bank they come; nor is the soundness of the bank usually considered.

§ 6

Quantitative Statement of the Relation of Money, together with Bank Credit, to Prices

The foregoing explanation of the nature of commercial banking operations makes clear, it is hoped, that these operations economize the use of money and why they do economize such use. The rights to draw from banks, thus circulating in place of government or "lawful" money (whether these rights are evidenced by checks or by bank notes) we may call M', and the average velocity[1] with which they circulate, V'. Then our equation becomes[2]

$$MV + M'V' = pq + p'q' + \text{etc.}^3$$

[1] Estimated by Fisher, *Purchasing Power of Money*, p. 285, as averaging, in recent years, towards 50.

[2] Stated in Ch. I (of Part I), § 1, without the inclusion of bank credit.

[3] The equation of exchange has been so stated as to include credit, by Kemmerer, *Money and Credit Instruments in their Relation to General Prices*, New York (Holt), 1907, p. 75; and by Fisher, *The Purchasing Power of Money* p. 48.

The general level of prices is somewhat higher and the value of money is somewhat lower, because of the additional use of credit. The conditions of supply and demand require a somewhat higher level of prices, just as we have seen that they do when there is more money. Gold is cheaper. The demand for it is less. It does not need to be produced, and cannot profitably be produced, at such a low margin, *i.e.* from such unfavorable sources of supply, as would otherwise be worth while. But this bank credit is not altogether an *addition* to currency; it decreases the amount of gold money, and so is largely a *substitution* of a cheaper for a dearer currency.

But if bank credit can thus take the place of money, is there any limit to such substitution? Why might not credit expand and prices rise, or money be pushed out, indefinitely? The answer is that the amount of bank credit is pretty definitely related to the amount of money. In the first place, a certain amount of cash is needed in the banks, to maintain confidence. The amount so needed bears a relation to the amount of bank credit, and must be some reasonable per cent of such credit. Otherwise, the public is likely to become frightened and demand cash, and this cash cannot be paid. A margin against such contingencies is always essential and, for national banks of the United States and Federal reserve banks, as well as frequently for State banks, is required by law. Reference has just been made[1] to this requirement in the case of the Federal reserve notes. So the total bank credit is related to the total bank reserves or cash in the banks.[2] Banks maintain the proper relation between deposits and reserves, by adjusting their rates of interest (or dis-

[1] § 5 of this chapter (II of Part I).

[2] White, *Money and Banking*, third edition, Boston (Ginn), 1908, p. 197.

count) charged to borrowers. If the deposits are in danger of becoming too great, relative to the reserves, a higher charge to borrowers will discourage borrowing, and so will limit the increase of those deposits which originate in the borrowing of deposit rights (or in the discounting of notes and acceptances).

The total bank credit is related, also, to the total cash in circulation.[1] Bank deposits passed by means of checks are absolutely unavailable for very many transactions. They are unavailable when the maker of a check is unknown, and they are unavailable, practically, for small payments, such as street car fares. Even bank notes cannot fill up the entire circulation when, as is usually the case, the government allows them to be issued only in relatively large denominations. The smaller denominations are needed and government money is used. Business convenience, then, also compels a relationship between the quantity of bank credit and the quantity of government money.

Since the quantity of bank credit is related in these two ways to the quantity of government coined and government issued money, changes in the latter tend to bring proportionate changes in the former. It is still true that prices depend upon the quantity of money, though the dependence is in part indirect. The demand for goods comes from those who have bank credit to offer as well as from those who have only money. And we may now speak, not merely of the supply of money and the demand for it, but of the supply of currency (including both money and circulating credit), and the demand for it.

[1] Fisher, *The Purchasing Power of Money*, p. 50.

§ 7

Fluctuations of Bank Credit

But though the amount of bank credit is thus related to the amount of money, the ratio between them is slightly rhythmic rather than definitely constant. During periods of hope and confidence, bank credit tends to expand, and prices to rise. During periods of distrust and depression, the volume of circulating credit tends to be smaller, and prices to be lower. When prosperity is generally expected, business men are anxious to extend their credit by borrowing of the banks for the purchase of merchandise and for other business purposes. The banks can then increase their deposits by making loans, as much as their available reserves will permit. When, for any reason, doubt and fear prevail, even low discount rates may not induce an equal amount of borrowing.

The sharpest changes in the relation of the quantity of circulating bank credit to the quantity of money come as the consequence of panic. So far as a panic is foreseen, the banks endeavor to prepare themselves for it by decreasing their demand liabilities in relation to their cash on hand or reserves. That is, they cut down their loans by raising their rates of discount. As the panic spreads, the necessity of such a policy becomes evident to nearly all the banks. Any bank may suddenly find itself subjected to the danger of a run upon it, and dares not increase the danger by making extensive loans. Those banks upon which there actually are runs, find themselves with depleted reserves, and are peculiarly unable to extend credit. The bank rate of discount, then, rises

rapidly, while the volume of bank credit, M', decreases, and prices fall.

At such a time of stress, a great national bank (or a few great banks) which keeps large reserves beyond the requirements of ordinary years, is a tower of strength, and can usually prevent any general collapse of credit. Such an institution is the Bank of England, which holds itself responsible for the credit structure of the nation, and maintains always an emergency reserve. In the United States, the recent Federal Reserve Act (of 1913) directs the establishment of not less than eight or more than twelve [1] Federal reserve banks. All national banks, and all other banks which become members of the system,[2] are required to keep a portion of their reserves in one of the Federal reserve banks. The aim is to have a large part of the nation's banking reserve concentrated in these few large banks so that ample means may be available in time of panic for the aid of any sound bank which finds itself threatened by the unreasoning fear of depositors. The Federal reserve banks are themselves required to keep each a 35 per cent reserve in lawful money against deposits and a 40 per cent reserve in gold against the Federal reserve notes which they have outstanding. This requirement insures the maintenance in ordinary times of a reserve which may be needed in case of a financial crisis. But when there is financial crisis or the fear of it and many banks are curtailing their loans, one of the things most needed is the assurance that credit can be secured by those whose assets are good and whose business is dependent upon credit. At such a time new reservoirs of credit may need to be opened

[1] Made twelve by the Organization Board.

[2] With a temporary exception stated in the act.

until the old ones, temporarily closed, are again unlocked. The new law therefore provides that the Federal Reserve Board, the government regulating body, may temporarily suspend any of the reserve requirements, but only by levying a proportional tax on the banks so favored.

But while it is desirable that the violent credit fluctuations associated with crises should be avoided, some seasonal rise and fall of bank credit is desirable. In agricultural countries, particularly, the amount of trade immediately after the crop season is greater than at other times, and an alternate expansion and contraction of bank credit, corresponding to the expansion and contraction of business, tends to keep prices more stable rather than to make them less so. In the United States, the circulation of the Federal reserve notes provided for in the new currency bill, and the gradual retiring of the old bond-secured bank notes, will tend to an elasticity of bank credit in the form of notes, comparable to, though perhaps less than, the elasticity of deposits. The new law requires that no Federal reserve notes originally issued by one Federal reserve bank shall be paid out by another such bank but shall be sent promptly for credit or redemption to the issuing bank. The effect of this provision must be to give at least some slight elasticity to the volume of these notes. For the notes will be lent out as business conditions favor, and will pass into circulation. They will then be used by borrowers, along with other means of payment, to liquidate debts to the various banks, will flow in considerable volume to the Federal reserve banks, and must then be cancelled against other debts or redeemed. Bank deposits in the United States are normally elastic, and will doubtless continue to be so. The

banks lend perhaps nearly all their reserves will support, at certain times, and at other times accumulate reserves in preparation for the season or seasons of largest lending.

§ 8

Summary

Let us now bring together, in brief compass, the main conclusions of this chapter. We saw, to begin with, that credit does not really act as a substitute for money unless there is the possibility of cancellation, unless the same credit (though not necessarily the same paper evidence of it) circulates more than once. It usually does this in the case of the bank deposit or right to draw from a bank. This right to draw, circulating by check or draft, is a substitute in trade for legal tender money, tends somewhat to increase the total supply of currency, and tends to drive out other currency.

Analysis of the relations of the various parties concerned, to each other, showed that, apart from their function of insuring the credit of borrowers by risking some capital of their own, banks are really but intermediaries between those who borrow of them, and the real lenders. These lenders are the depositors, since it is the depositors who have given up present goods by depositing, in the banks, money which they might have spent, by accepting checks in return for goods sold, or by receiving the promissory notes of or drawing drafts on the purchasers of the goods, and having such notes or drafts discounted by banks. If the borrowers as a whole were unable to repay, then the banks would be unable to pay the depositors what the latter were entitled to. What the banks do is to bring together borrowers

and lenders, making available to borrowers, in the form of loans, sporadic waiting which would in any case exist. Through the institution of commercial banking, trade is carried on by means of people becoming successively and alternately each other's creditors. The demand for loans from borrowers is sufficient to throw upon them the cost of maintaining the banking system. Nevertheless, the existence of that system, by making possible the bringing together of sporadic waiting, tends to make the interest charge to borrowers lower than it would probably otherwise be. Bank notes involve the same principles as bank deposits, though the holders of bank notes are commonly protected or insured to a greater degree by government than depositors.

Bank credit is related to the quantity of money by the habits and business requirements of the community and by the necessity of a sufficient reserve. But the relation between bank credit and money is rhythmic rather than exactly constant. The fluctuations seem to be, in large part, closely connected with the alternation of business confidence and business distrust, and with the occurrence of panics. The banking system should be so well organized and conservatively managed as to minimize such fluctuations of credit. On the other hand, a certain degree of elasticity in bank currency, making it expand and contract according to the *seasonal variations of trade*, appears to be desirable.

CHAPTER III

The Nature and Method of Foreign Exchange

§ 1

The Function of Bills of Exchange

In the last chapter we saw that in the most highly civilized countries, particularly the English-speaking countries, the largest part of trade is carried on by means of bank credit. This form of credit, circulating by means of checks, is, in the United States, of almost universal use as to all large scale dealings within a city or other circumscribed area.

We saw, also, that the use of this bank credit, through checks or bank notes, is merely a means by which borrowers and lenders are brought together, the bank being but an intermediary; that it is a means by which one person or firm can become, in the sense explained in the preceding chapter, a debtor successively to a second, third, fourth, fifth, etc., so that money has only to pass from the first through the bank or through two or more banks and a clearing house, to the last. All the intermediate transactions may then cancel, or cancellation may at times be complete, so that no balance remains. Cancellation of these serial and opposing debts thus becomes our principal means of carrying on modern business. And trade is still, in the last analysis, as in primitive barter or as where money is the medium, an exchange of goods for other goods. We buy goods and become, in

effect, debtors. We sell goods and become creditors. The debts cancel and we have traded goods for goods.

Bills of exchange enable us to extend this system of credit beyond the town or city, beyond the state, beyond the nation. Business firms separated hundreds of miles from each other can become debtors and creditors of one another through the intermediation of the banking and exchange system. The credit structure becomes international. Through the commercial and the exchange banks, a New York firm can become, in effect, successively the debtor of a London firm, another London firm, a Glasgow firm, a Berlin firm, a Boston firm, and another New York firm. That is, these different business houses successively become claimants of the banking system, through their receipts of checks or drafts from one another, or through their drawing bills of exchange on one another, or both, of the sum, or part of it, originally borrowed from a New York bank, as a deposit, by the first mentioned New York firm. In trade between nations, or between widely separated parts of the same nation, credit is used, debts in large part cancel, and money is used to a relatively small degree.

Bills of exchange or drafts serve in large part, then, the same purposes as ordinary checks. Over long distances, however, whether business crosses national boundaries or not, the "customer's check" is not likely to be satisfactory. The receiver may have hard work to cash it or to get for it an immediate addition to his bank balance. In the distant locality to which the check is sent, nobody, probably, knows the maker well, or knows whether the maker's check is good. In this regard, the bank draft is superior. Or the creditor may not wish to wait for what is owed to him, until a check arrives

from his debtor. In this regard, a commercial draft is superior.

Foreign and domestic exchange are in principle the same. The former involves payments between persons in different countries, countries which have, generally, different currencies and which are often separated from each other by natural barriers. Domestic exchange involves dealing between different parts of the same country, but parts too far from each other for the ordinary, convenient use of checks.

§ 2

The Nature of Bills of Exchange

Let us now inquire what is the nature of the bill of exchange. Suppose, to take the simplest possible case, that B owes to A the sum of $1000, and that A owes a like sum to C. The form of settlement will be that of the bill of exchange if A orders B to pay C. When B complies with the order, his debt to A and A's debt to C are both liquidated. Usually the bill of exchange involves an exchange banker or broker as one of the parties. But in any case it is always of the form: A orders B to pay C.

The reader may at once note that in so far the bill of exchange resembles the ordinary check, which is, in fact, but one species of bill of exchange. But a distinction can be made, based partly upon the relation of a bank or banks to others concerned. In the case of the "customer's check," A, the drawer, is a mercantile or industrial establishment or a person, while B, the drawee, is always a bank. In the case of the commercial draft, A and B are usually persons, or commercial or industrial establishments (except that, as with the "bank acceptances" de-

scribed in the previous chapter,[1] B's bank may be designated by him as the drawee in his place), while C, the payee, is usually, though not necessarily, a bank. In the case of the *bank* draft, both A, the drawer, and B, the drawee, are banks. The payee may be a person or an ordinary business firm. Furthermore, a check is always a demand claim (a demand draft of one bank on another is frequently called a "check"), while a draft may or may not be. We shall have occasion to notice, later on, the significance of some of these different relations. What we have here to emphasize is that the bill of exchange or draft and the ordinary check are exactly alike in involving three parties, of whom one orders a second to pay a third; and that the distinction rests, in part, upon the position which the bank or banks concerned, if any, occupy in relation to the other persons or person.

§ 3

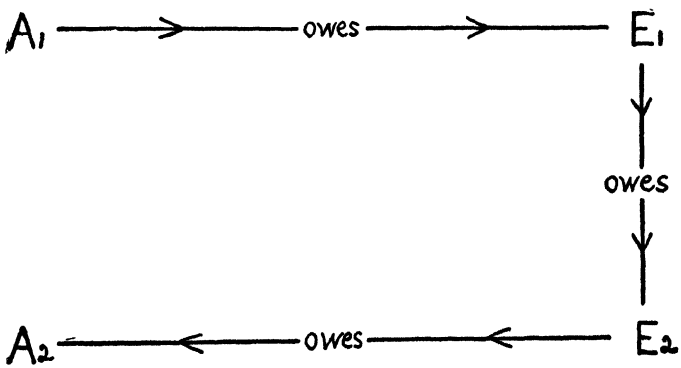
How Bills of Exchange Might be Used to Settle Obligations, Assuming no Banks

If credit is to serve appreciably as a medium of exchange or substitute for money, then when credit is given there must generally be three parties. When there are but two persons concerned, the giving of credit is usually only a postponement of payment. There is not an avoidance of the use of money, except in those comparatively rare cases where B's debts to A now are balanced, or partly balanced, by later obligations incurred by A to B. Then, of course, credit may lead to cancellation. If three or more persons are concerned, in addition to banks or other intermediaries (and even if banks are

[1] § 4 of Ch. II (Part I).

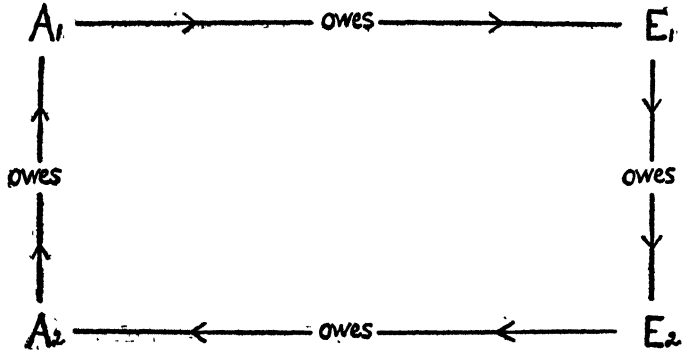
included in the three, this would be true in form), cancellation always takes place.

But we have yet to see just how bills of exchange or drafts are used to balance obligations in foreign trade. To begin with, we shall take, as being the simplest, a case seldom realized in practice, namely, where four parties can settle up their various debts without resort to any bank, exchange broker, or other go-between. Suppose that an American merchant, whom we shall designate as A_1, owes to an English manufacturer, E_1, the sum of £100 ($486.65), while the latter owes as much to an English merchant, E_2, who in turn owes an equal sum to an American manufacturer, A_2. We may represent the situation, graphically, as follows:



Obviously, if the parties all know each other and know of the situation, they can very easily settle all three debts with but one use of money. E_1 may make out a bill on A_1 ordering him to pay E_2. Thus E_1 cancels his debt to E_2. E_2 may then indorse the bill, making it payable to A_2, thus liquidating his (E_2's) debt to A_2. Finally, A_2 presents the bill to A_1, who cancels his debt

to E_1 by paying it. Thus, three debts have been paid with but one use of money. Suppose that, in addition to the other debts, A_2 owes \$486.65 to A_1. Then our diagram would be:



A_2 might then pay by indorsing the bill to A_1, who would, therefore, have only to pay himself. In that case, four debts would be settled with no use of money at all.

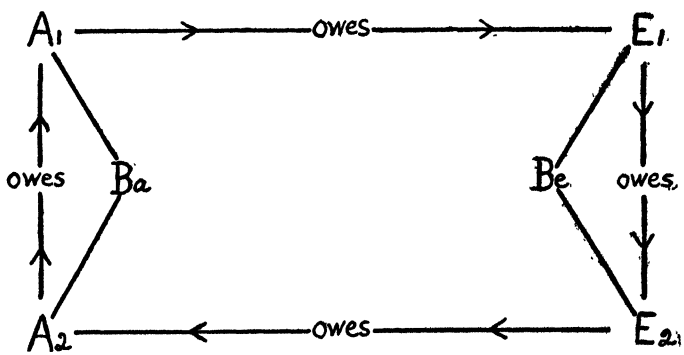
§ 4

Settlement of Obligations by Drafts (Bills of Exchange), through Intermediation of Banks, Assuming Creditors to Draw Drafts on Debtors

Our illustration, however, must be modified if it is to picture the usual commercial practice. The different parties having occasion to use or to pay drafts or bills of exchange cannot be expected, ordinarily, to know each other. They must therefore deal with middlemen, with the so-called exchange bankers or exchange brokers. When foreign exchange is carried on through the intermediation of bankers or exchange brokers, each bill of exchange is still of the form, A orders B to pay C. But

an exchange banker is now in the position of both A and B, or of C.

There are several ways by which debts can be settled through the use of the exchange banking machinery. One way is for the creditor to draw upon the debtor, ordering him to pay a bank. Another is for the debtor to remit to the creditor by sending the latter a bank draft. Let us take up, first, cases where the creditor draws on the debtor. We will suppose the same four persons, A_1, A_2, E_1 and E_2, but will now assume what is the usual, if not indeed the universal, fact, that they deal with each other through middlemen. These middlemen may be two banking houses dealing in foreign exchange, one, B_a, an American bank, and the other, B_e, an English bank. We shall suppose, as before, that A_1 owes E_1, E_1 owes E_2, E_2 owes A_2, and A_2 owes A_1. All that is needed for cancellation is that the parties be brought together. Diagrammatically this situation is:



E_1 makes out a draft on A_1 ordering A_1 to pay B_e. E_1 may be said to sell this draft to B_e. E_1's bank, B_e, may then give E_1 the money, but will more probably (since E_1 is likely to prefer it) put the amount to his credit as

a depositor. B_e sends this draft, directly or indirectly, to B_a for collection. B_a will subtract it from the credit account of its customer, A_1. So far, no money has been used. E_1 has an addition to his deposit account. A_1 has suffered a subtraction from his. E_1 has the claim on the banks which A_1 has lost. E_1 may now settle his obligation to E_2 by a check on B_e. E_2 then realizes an addition to his deposit account with B_e, while E_1 suffers a diminution of his bank account. Next, A_2 may make out a draft on his debtor, E_2 (or, as where E_2 has arranged for "acceptances," directly on E_2's bank), ordering E_2 (or his bank for him) to pay B_a. B_a may send this draft to B_e for collection. A_2 now has an addition to his deposit account in B_a. E_2's bank account is decreased. Lastly, A_2 settles with A_1 by check on B_a. A_1 has now an addition to his bank account which may cancel the original subtraction, while A_2 suffers a subtraction which may be equal to the previous addition. Four debts may have been cancelled, with no use of money. In any case, there has been less use of money because of the use of drafts, for the banks concerned compare accounts, and only net balances have to be paid in money or in gold. The use of bills of exchange extends to trade between nations, and equally to trade between widely separated parts of the same nation, the operation of the bank credit system.

Even if we suppose that B_a (for example), the exchange bank which collects the draft on A_1, is not the bank in which A_1 regularly keeps a deposit account, nevertheless the rule that trade is carried on by a cancellation of credits, still holds. Though B_a, upon receiving from B_e the draft drawn by E_1 upon A_1, cannot then directly subtract the amount from A_1's account, it can call on A_1

for payment. Either the draft will be made payable to A_1's bank and by that bank subtracted from his deposit there, or it will be presented directly to A_1 himself, in which case he will probably pay it by giving B_a a check on his own bank. In any case, then, E_1's bank account will probably be increased and A_1's bank account decreased by virtue of the draft.

On the other hand, A_2's bank account will be increased when he sells his draft on E_2, though he sells this draft to an exchange dealer not engaged in a regular banking business. For such an exchange dealer will presumably pay him for his draft by means of a check upon some bank, which he can then deposit for credit in his own bank. His deposit account is increased and E_2's is decreased by the transaction. In any case, B_a, or some other exchange bank, has to pay A_2, directly or indirectly, and receives payment, directly or indirectly, from A_1; in any case, B_a collects one draft for B_e and sends one draft to B_e for collection. In any case, there is cancellation, and the shipment of gold is wholly or partially avoided. A_2 may pay A_1 by check as above suggested, or, if they are widely separated, A_1 may draw a domestic draft on A_2 and deposit the draft in his bank for credit. The draft will go to A_2's bank or to A_2 for collection and A_2's bank account will be decreased.

Attending only to the international relations involved, we may say that A_2's draft on E_2 constitutes part of the supply, in the United States, of bills on England. The desire of an American bank, *e.g.* B_a, to purchase this bill, signifies a demand, in the United States, for bills on England. This demand may be said, in the last analysis, to result, partly, from the necessity which some American bank (or banks) is under, of remitting to an English

bank or banks, after collecting for the latter; and so may be said to result, to some extent, from the supply, in England, of commercial drafts on Americans. We may assert, therefore, that the supply of such commercial bills on America, in the English market, corresponds, in part, to demand for bills on England, in the American market, and, in part, gives rise to this demand. The basic principle is of course similar in the relations between different parts of the same country. In general, supply in one place, of commercial bills on another, gives rise to demand in the other, for bills on the first.

To avoid misunderstanding, it should be pointed out that foreign exchange, in the complications of practical business, is often three cornered, four cornered, etc., involving merchants and banks of several countries. Thus, Americans may have purchased goods of English merchants; the latter may have bought goods in Germany; and Germans may have imported goods from the United States. Supposing the creditors in each case to draw upon their debtors,[1] there would be sold in England, drafts on merchants in the United States; in Germany, drafts on English purchasers; and in the United States, drafts on Germans. The drafts in England, on Americans, would be sent to American banks for collection. The American banks must then settle with their English correspondents. This would create a demand for drafts on foreign countries, but might not directly create a demand for drafts on England. For the American banks might purchase drafts on Germany and send these in settlement to their correspondents in England. These drafts would be collectible through German banks, which might settle

[1] See, however, § 5 of this chapter (III of Part I).

by purchasing, and sending to their English correspondents, the drafts on England drawn by German exporters. In practice, then, the supply in England of drafts on the United States may not directly give rise to a demand in the United States for drafts on England. Instead, it may lead to a demand in the United States for drafts on Germany, and to a demand in Germany for drafts on England. These complications should not be overlooked, but, since they introduce no new principle, they may, for simplicity, be ignored in most of our study.

§ 5

Settlement of Obligations by Bank Drafts, when Debtors Remit to Creditors

Obligations between persons in widely separated places may also be cancelled through the use of bank drafts. Instead of creditors *drawing* on their debtors, the debtors then *remit* to their creditors. What method shall be adopted in each case will depend upon the understanding between the parties concerned as creditor and debtor. If A_1 owes E_1 and is to pay by means of a bank draft, he may go to the bank, B_a, and request such a draft payable to E_1. This he will pay for out of his deposit with B_a, or by a check on whatever bank he has an account with, or (conceivably but rarely) with money. The draft A_1 gets is really a kind of check made out by one bank on another. B_a makes out an order upon B_e (or some other English bank) requiring payment to E_1. This order is handed by the American bank to A_1, who sends it to E_1, and the last named person is then in a position to present the draft for cash or, more probably, credit, to B_e or to his regular deposit bank. E_2 may simi-

larly settle with A_2 by getting a draft from B_e ordering B_a to pay A_2. We may suppose E_1 to settle with E_2 and A_2 with A_1 by check, as before. Or we may suppose that they are separated from each other by considerable distances and likewise settle with each other by using bank drafts. The matter of form is unessential. In any case, most obligations, both international and intranational, can be settled by cancellation, through the banks.

Where settlement is made by the use of bank drafts, there must, of course, be some arrangement between the banks concerned, such as deposit accounts kept by each with the other, so that all of these drafts will be honored without question. There is no need of any special arrangement in the case of checks, since these can be sent at once, and with no appreciable loss of time in transit, through a clearing house, to the bank on which they are drawn. But with bank drafts, used where the distances are greater, the situation is otherwise.

Where bank drafts are used, these constitute part of the supply of drafts, and the demand for them is a demand by persons and by business houses, who have remittances to make, as well as by banks. Thus, a part of the supply, in the United States, of bills on England is made up of the drafts of American upon English banks; and a part of the demand, in the United States, for bills on England is the demand for bank drafts, by business houses having obligations to meet in England and desiring to meet them in that way.

Third, cancellation may take place by the use of both of these methods, *i.e.* by both drawing and remitting. For instance, A_2 makes out a bill on E_2 ordering the latter to pay B_a. B_a sends it to B_e for collection (or discount). B_a thus gets a claim upon or a credit with B_e. A_1 desires

to remit a bank draft to E_1. He seeks of B_a, such a draft. B_a, having purchased A_2's draft on E_2 and secured a credit balance in England, is able to sell A_1 a draft on B_e payable to E_1.

This is the way in which, as a matter of practice, most of our transactions with England are settled. When Englishmen owe us, we usually draw drafts upon them or their banks, *i.e.* we draw upon London. We do not, as a rule, arrange for them to remit drafts on New York. On the other hand, if we owe them, the understanding commonly is that we shall purchase drafts on London and remit. American banks, then, buy drafts on London from those Americans having English debtors, send these drafts to their London correspondents, and, on the balances in London so secured, sell drafts on their London correspondents to Americans having English creditors. The opposite operations are indeed carried on, but they are much less common. In general, it may be said that other countries draw drafts on England in much larger volume than England draws upon them.[1]

Three-cornered exchange, also, may involve chiefly bills on London. Thus, if Americans have exported cotton to England and imported mechanical instruments from Germany, while Germany has purchased cloth of England, drafts on London may be used in part for all three settlements. American exporters of cotton will draw drafts on the English purchasers. These drafts may be used, in part, by American banks, for remittances to Germany, as a basis for the sale of bank drafts to American importers who must remit to Germany. German banks will, in turn, send these drafts on the

[1] Clare, *The A.B.C. of the Foreign Exchanges*, London (Macmillan), 1893, p. 12.

English importers of cotton to England, in order to maintain balances there for the sale of drafts to remitting German importers of cloth.

London is, in fact, the world's greatest financial centre. Partly, perhaps, because banking is most fully developed in England, partly because of the magnitude of England's foreign trade and the fact that payments have to be made to English exporters by merchants of all other countries, drafts on London are nearly everywhere in demand. Sellers of goods, in most parts of the world, usually prefer to take advantage of this fact and realize on their sales at once. On the other hand, English exporters more usually, though not always, wait for remittances from foreign purchasers of their goods. The loss of time necessarily incident to exchange transactions falls, then, except as it is allowed for in higher prices of goods sold, more largely on English manufacturers and merchants and less largely on other countries.

Coming back to the consideration of trade between England and the United States, we may conclude that drafts drawn by American business houses on English business houses (or upon banks properly designated by the latter), and drafts drawn by American banks upon English banks, are both part of the supply, in the United States, of bills on England. The demand for such bills has also a twofold source. It comes, first, from those persons and firms other than banks, who have obligations to meet in England which they wish to meet by remitting bank drafts. Second, the demand comes from banks which may desire bills of exchange on England for either or both of two purposes: in order to maintain accounts in England, against which they may sell bank drafts; and, though less frequently, in order to remit

funds to English banks which are sending to them, for collection and settlement, drafts on American business men. As there is, in the United States, both supply of and demand for exchange on England, so there is, in England, both supply of and demand for exchange on the United States. The case is similar in our commercial relations with other countries, and in the relations of different parts of the United States itself, to each other.

§ 6

How Exchange Banks Make Profits

A market may be defined as the coming together of buyers and sellers. It therefore involves all the mechanism necessary to facilitate their intercourse. One may speak of a general market or of a local market, of a market in one or in another place. Thus, there is the New York market for the buying and selling of exchange on London. A bank in New Haven, Conn., may be a part of that market if it buys from and sells to it. That market includes, besides the commercial and industrial organizations which buy or sell drafts, all middlemen of whatever class who engage in the trade.

The middlemen may be divided roughly into three classes.[1] First may be mentioned banks which do a regular foreign exchange business, buying bills from those who have them to sell and selling their own drafts on foreign correspondents to persons desiring to remit. Much of this business is done by foreign exchange banks which carry on little or no other business. Some of it is done by ordinary commercial banks, such as United

[1] Cf. Escher, *Elements of Foreign Exchange*, New York (The Bankers Publishing Company), 1911, p. 60.

States National banks, in addition to their other banking business. Second, we may call attention to those exchange dealers whose principal business is to buy commercial and bankers' bills, and to resell them, chiefly to banks. Third are the independent brokers who make small commissions by bringing buyers and sellers together. These do not invest their own capital, do not, that is, buy bills of exchange in the market, but assist those desiring to sell bills to find buyers, and *vice versa*.

The bankers and brokers engaged in the business of foreign exchange make their money from commissions and by the difference between what they pay for exchange and what they get for it. Thus, when a bank sells its own drafts drawn upon a correspondent bank, it will probably expect to receive a better price than it is willing to pay for the commercial drafts it buys and remits. Its credit is probably better than the credit of most mercantile and industrial establishments, and its drafts, therefore, more to be desired. And it will hardly care to engage in the business without receiving some profit as a reward or payment for its services.

It might be supposed that business men, *e.g.* in the United States, desiring to remit to foreign creditors, would sometimes buy, through the intermediation of exchange brokers, the identical bills drawn by other American merchants on their foreign debtors, instead of remitting by means of bank drafts. This, however, while perfectly possible, is seldom done in practice. Perhaps one reason is that the business man desiring to remit has much more confidence in the credit of a bank than in the credit of any other company, and hence prefers to buy a claim on a bank to use in remitting. Another and a very practical reason is that an exchange

bank can give a draft enabling the debtor to pay the exact sum owed. Were he to buy merchants' bills, it would be difficult, if not impossible, to make out an even sum, since they would be for various amounts dependent on the requirements of previous transactions. It falls, therefore, to the lot of the banks to buy up bills of exchange or drafts of various amounts, and sell their own drafts, in such sums as are desired, against the credit they thus obtain abroad.

§ 7

Various Types of Drafts

Bills of exchange run for various lengths of time before payment. Some of them are sight drafts, payable on presentation. Others, 30-day bills and "long bills," such as 60-day and 90-day bills, are payable only after the lapse of a definite period following presentation to the drawee. Bills of exchange, furthermore, may be drawn upon and by persons of various degrees of credit. The credit of both drawer and drawee is important, since, as in the case of checks, if the drawee fails to honor a bill, the drawer or maker of the bill is liable to the payee. Both of these considerations, therefore, namely the length of time a bill is to run, and the credit of the drawer and drawee, affect the bill's value.

Bills of exchange may be either "clean" bills or documentary.[1] Clean bills are those which have no attached documents giving security, but depend for their value and salability solely on the reputations of the drawee (who must pay the bill) and the drawer (who is responsible to the holder if the drawee fails to pay). A bank

[1] Escher, *Elements of Foreign Exchange*, pp. 45–52.

draft is an example of a clean bill. Frequently a merchant's draft on another merchant is a clean bill, but this is not so universally the case.

Very usually a merchant's or manufacturer's draft is documentary, *i.e.* has documents attached. Suppose A_2 ships £1000 worth of merchandise to E_2. He may then draw a bill on E_2 ordering the latter to pay £1000 to B_a. Before doing this, however, or at any rate before disposing of the draft, A_2 will get from the transportation company by which the goods are shipped, a bill of lading for the goods. He will also, probably, insure the goods against shipwreck or other loss or damage in transit. The bill of lading certifies the claim of A_2, the shipper, upon the transportation company, to have the goods delivered to the consignee. The consignee eventually secures the goods by presenting the bill of lading to the transportation company. Likewise, the certificate of insurance certifies A_2's claim upon an insurance company, in case of damage or loss. A_2, having made out the draft on E_2, will attach to this draft the bill of lading and the insurance certificate, before disposing of it to any bank. Possession of these documents is then some protection to the bank in case payment is refused. If neither the drawee nor the maker of the draft will or can reimburse the bank, the goods may be sold, because usually hypothecated, and the proceeds applied to that purpose.

A banker, however, is not, supposedly, an expert in the business of selling the goods in question, and may not be able to realize the best price for them without going to considerable expense. Also, the market may not remain steady and the goods may not for that reason sell for enough to cover the bank's advance. The business reputation and the financial standing of the maker

and of the drawee are therefore almost always of importance in determining the value of a draft. If their credit is not established, the maker or drawer cannot hope to receive quite as large an amount for his bill as otherwise he might.

Documentary commercial drafts, other than sight drafts, may be "acceptance bills" or they may be "payment bills." Acceptance is a formal acknowledgment of obligation by the drawee. When a draft is presented to him for acceptance, he writes the word "accepted" and his signature, across its face. Where, as in England, "bank acceptances" are commonly used, a merchant's bank may undertake to "accept" drafts for him and so becomes the drawee. When an acceptance bill is drawn, the drawee has sufficiently good credit so that his acceptance of the draft gives him possession of the bill of lading and therefore of the merchandise; though the draft may be for 90 or 120 days after sight, during which length of time the drawee is not called upon for payment. In the case of the payment bill, the drawee's credit is less good. Though acknowledgment in the form of acceptance will be asked for, he cannot obtain the merchandise consigned to him by merely accepting the bill of exchange, but must actually pay it.[1] If, however, a 30-day, 90-day or other payment bill is paid by the drawee before maturity, he is allowed a rebate or discount from the face of the bill.

In the case of perishable goods, *e.g.* produce, payment cannot be allowed by the purchaser to run, lest the produce spoil. He pays the draft at once, therefore, under

[1] Escher, *Elements of Foreign Exchange*, p. 49. When documentary drafts are made payable a very few days after sight, the documents are apt to be delivered only upon payment. *Ibid.*, p. 52.

the rebate of interest arrangement.[1] But this rebate will be less than the market rate of discount on the draft. For it is not to be expected that an exchange banker should pay a high price for a draft, only to receive from the drawee less than he paid the maker. The banker is likely to safeguard himself against such a contingency by paying for the draft as little as the least he can expect to receive. Looking at the matter from another point of view, we may say that the allowance made for payment before maturity is not likely to be so large as seriously to affect the value of the draft to the maker or seller.

Documentary payment bills sent to England by American banks for collection cannot, in general, be discounted. The principal reason for this is that such a bill is payable at the option of the drawee on any date prior to maturity. If the goods are not perishable and the drawee does not immediately require them, they may be warehoused until he desires them. When this time comes, he obtains the bill of lading by making payment on the draft. It is convenient, therefore, that the draft should remain, until payment, with the banker who originally presented it for acceptance, in order that the drawee may know where payment should be made, when he desires to acquire possession of the merchandise.[2] On the other hand, acceptance bills drawn on English merchants or English banks are usually sold at a discount in the London discount market by order of the American bank which remits them.

[1] Escher, *Elements of Foreign Exchange*, p. 49.

[2] Margraff, *International Exchange*, Chicago (Fergus Printing Co.), 1903, p. 115. German banks themselves discount payment bills remitted to them, though at a rate of discount higher than the market rate, while English banks do not. See Margraff, p. 135.

§ 8

The Sale of Demand Drafts against Remittances of Long Bills

After what has been said regarding the discount of bills of exchange, the reader will easily see how banks can sell their own demand drafts against remittances of so-called long bills, *i.e.* bills of 60 days, 90 days, etc. An American bank, B_a, can find out by cable at what rate bills "to arrive" in London on a certain date or by a certain steamer will be discounted. B_a thereupon buys the bills here of persons having debtors abroad, or of other bankers or exchange dealers. It sends these bills to its London correspondent, say B_e, with orders for immediate discount, *i.e.* sale. The sum realized constitutes a balance abroad to the credit of the American bank, a balance upon which it then sells its own demand drafts [1] to Americans wishing to make remittances. A demand draft is sometimes sent by telegraph and is then called a "cable." [2] It should be noted that B_a has a balance abroad long before the bills sent abroad by it for credit have matured, since these bills it has ordered sold in the London discount market, and they have got into the possession of persons or houses which buy such bills as investments. In the United States there is no such discount market. Drafts made out in England on American debtors, after being purchased by English banks, are forwarded to American correspondent banks for collection, but are generally held, after "acceptance," for account of the forwarding English banks, until maturity, instead of being sold.

[1] Escher, *Elements of Foreign Exchange*, p. 79.
[2] *Ibid.*, p. 71.

It follows that, as a rule, the real creditor of an English firm on which an American has drawn a 60-day or 90-day draft is not the American, for he has had the draft discounted and has received cash or credit. Nor is it the American bank, which has had the draft sold in the London market and received a credit balance with its correspondent or has thereby liquidated a debt. It is rather the purchaser of that draft, in London, who must wait (unless he resells it) 60 or 90 days until it matures and he can collect from the debtor firm in England. Or we may go one step farther back and assert that the ultimate creditors are depositors (holders of rights to draw) in that English bank which buys the draft in question, or from which the buyer of the draft borrowed the means to buy it.[1] On the other hand, when a draft is made out by an English firm on an American, payable say 60 days after sight, the English bank which discounts it is the creditor, and, therefore, ultimately, its depositors are the creditors. For the draft will not usually be purchased by an American investor, but will be held by the correspondent bank, for account of the English bank, until maturity. The original English debtor has received payment, but for the time being this payment has come from other English capital which will only be reimbursed when the American firm pays.

As a matter of usual practice, however, long drafts are not drawn upon American debtors. The absence of a discount (or, more properly, a rediscount) market here means that importers have one less avenue of credit open to them. Were there such a market, drafts drawn upon

[1] "The enormous amount of bills held by the discount companies and bill brokers in England is to a very large extent carried by them through loans on call from the banks." Paul M. Warburg, *The Discount System in Europe*, National Monetary Commission, 1910, p. 18.

them could be rediscounted and held until maturity by whatever bank or person offered the best rate. Such a bank (and, therefore, ultimately, its depositors) or person would be the real source of credit. It is not easy to say just why we have not, in the United States, a rediscount market. Custom and prejudice may be largely to blame. In general, bankers in the United States have regarded it as evidence of financial weakness for a bank to attempt to rediscount the notes of its customers. Furthermore, the national banking law, as interpreted by the courts, has made it illegal for any national bank to "accept," for account of its customers, drafts upon it.[1] In England, banks continually accommodate their customers by thus accepting drafts. The customer is responsible, in each case, to the accepting bank, and must reimburse the latter before the draft is due, but acceptance of the draft insures it and makes it salable. The Federal Reserve Act of 1913 specifically permits banks which become members of the system thus to "accept" drafts drawn upon them,[2] and it empowers the Federal reserve banks to rediscount the commercial paper of member banks. The law is intended, doubtless, among other things, to further the development of a rediscount market.

§ 9

Summary

Before taking up a study of the forces determining the rate (or rates) of exchange, let us briefly restate the principal conclusions regarding exchange, already reached. First, taking up our analysis where it was left by the

[1] See Jacobs, Bank Acceptances, National Monetary Commission, 1910, pp. 4; 9.

[2] Under conditions prescribed by the law.

previous chapter, we saw that bills of exchange or drafts simply extend to trade between widely separated districts the possibilities of successive debtorship and creditorship and of debt cancellation, which in circumscribed areas are brought about through the use of checks. As in the case of checks, banks are really but intermediaries through whom and by whose arrangements, cancellation takes place. A consideration of the different varieties of method in settling obligations over long distances served to reënforce the general conclusion. These obligations are usually settled in either of two ways: first, the creditor may draw a draft upon his debtor payable to the creditor's bank or to some other designated party; second, the debtor may purchase a bank draft with which to remit to his creditor. Assuming, in trade between England and the United States, either of these methods to be used from both sides, or assuming one method from one side of the water and another from the other side, we reach alike the same result. The use of drafts and the intermediation of banks make possible an international network of credit relations which could not otherwise exist. The usual practice is for American creditors to draw on their English debtors and for American debtors to remit to their English creditors.

When the various ways of settling obligations through the use of bills of exchange had been set forth, we were ready to inquire of what, in any country, the supply of drafts upon another country is made up. We found it to be composed of two classes of drafts: those drawn by the creditors of the first country upon their debtors in the second, offered for sale to exchange bankers; and those made out by banks in the first country upon their correspondent banks in the second, sold to debtors in the

first country who desire to make remittances to the second. Demand for drafts, also, proved to have a two-fold source, springing, on the one hand, from debtors desiring bank drafts for remittance and, on the other, from banks desiring commercial or bank drafts to settle with or maintain balances in, correspondent banks. Analysis of the relations involved made it clear that supply in one country (or territory) of drafts upon a second, brings about demand in the second for drafts on the first.

The exchange market was briefly described and it was shown how exchange dealers make a profit from their transactions, being able to buy exchange somewhat more cheaply and sell it at somewhat higher rates, than merchants, manufacturers, etc. Next, bills of exchange were classified as sight drafts and long bills, according to the time to elapse before payment, and as documentary bills and clean bills, according as documents, such as a bill of lading, do or do not secure them; and documentary bills, other than those payable at sight, were in turn subdivided into acceptance bills and payment bills according to what conditions the drawee must fulfill to secure goods consigned to him.

Finally, the process of selling demand drafts against remittances of long bills was briefly described. It was pointed out that this can be done by American banks by sending drafts on English firms to England for discount; but that in the absence of a rediscount market here, the reciprocal operation is unusual. Instead, long drafts on American firms, in those relatively infrequent cases when they are drawn, are generally held till maturity for account of the remitting London banks. The comparatively large discounting, in England, of bills

drawn by Americans on their English debtors, means that the capital which enables the Americans to get immediate funds, comes largely from those other Englishmen or English banks, who buy these bills in the discount market, or from the depositors of the banks where the funds for purchasing the drafts are secured.

CHAPTER IV

The Rate of Exchange

§ 1

The Meaning of Par of Exchange

Bills of exchange or drafts are certificates of property rights, *i.e.* they certify rights to payment and, therefore, rights to enjoy the benefits of various amounts of wealth. These rights, like other property, are subjects of purchase and sale, and have a price in any market where they are bought and sold. Also, the ruling price, at any time, of drafts, like the price of other goods, is fixed by supply and demand.

Exchange between countries may be said to be at par when a demand draft on either country sells in the other for the equivalent in coin of its face value, plus or minus only the insignificant expense of banking service.[1] For instance, the mint par between England and the United States is £1 = $4.8665. This means that the material (gold 11/12 fine) in an English pound sterling of full weight, is just equal in value, supposing both to be in the same place, to the material which would be contained in $4.8665 of gold coinage (9/10 fine) of the United States. Exchange, therefore, would be at par between England and the United States if a demand draft on London for £100 was worth, in New York,

[1] For a bank might be purchasing good commercial sight drafts for very slightly less and selling its own drafts for very slightly more.

$486.65. In domestic exchange, say between New York and Chicago, par of exchange is $1 = $1, for the standard of value is in both places exactly the same.

The rate of exchange, however, may go above or fall below par. Sight or demand drafts for the same amount may realize different sums on different dates. Our problem is to explain, by a study of supply and demand, why the rate of exchange, *e.g.* between England and the United States, ever varies from par, and why it is fluctuating rather than steady.

§ 2

The Supply of and the Demand for Bills of Exchange

At the beginning of our discussion on the rate of exchange, it is important to get clearly in mind the meaning, in this connection, of the terms "supply" and "demand." In talking about other goods, *e.g.* wheat, we insist that "supply" means supply *at a price*, and that "demand," likewise, means demand *at a price*. Adopting, here, an analogous sense, we may say that the supply, in the United States, at a given price or rate and for any given period, of drafts on England, is the total of those drafts which sellers would part with, at that price or rate. The supply of bills tends to increase as the price or rate rises and to decrease as the rate falls.[1] On the other hand, the demand, in the United States, at a given price or rate and during any given period, for drafts drawn upon English firms, is the total of such drafts which buyers of drafts stand ready to purchase at that price. The demand for drafts tends to rise as the price or rate falls and to fall as the rate rises.[2] As, in

[1] See §§ 4, 5 of this Chapter (IV of Part I), §§ 1, 3 of Ch. V (Part I), § 9 of Ch. VI (Part I).

[2] *Ibid.*

the United States, we have a supply of and a demand for bills of exchange on England, so, in England, there is a supply of and a demand for such bills on the United States. Since the rate of foreign exchange is fixed by supply and demand, at the point, of course, where supply and demand are equal, we have next to determine what forces affect supply and what forces affect demand, and how these forces operate.

The supply, in this country, of drafts upon any foreign country or upon all foreign countries together, is determined by obligations, agreements or desire of foreigners to make payments to us.[1] This is obviously the case with commercial drafts drawn on foreign purchasers of American goods. These drafts come into our exchange market because foreign debtors are under business obligations to the makers of the drafts. But it is no less true of bank drafts drawn to accommodate American debtors wishing to remit. The bank draft is drawn upon a foreign bank which is, or which puts itself, under obligation to pay to the American bank's order. A draft drawn on a foreign bank wishing to lend here for profit, is determined by desire of the foreign bank so to invest. All drafts, therefore, offered for sale in our market, are based on the necessity which foreigners are under or their desire to make payments to some of us.

Conversely, the *demand* here for drafts on foreign countries, is determined by our obligations to them and by our occasion to make voluntary payments to them. This demand, as we have seen,[2] has a twofold source. It comes from business houses, etc., which wish to buy bank drafts for remitting to their creditors and other

[1] See, however, paragraph after next.

[2] Chapter III (of Part I), §§ 4, 5.

persons abroad; and it comes from American banks which wish to buy commercial drafts for remitting to their correspondents. These American banks have occasion to remit, largely to maintain foreign balances on which to sell their own drafts, but partly because English firms have drawn upon American debtors and settlement must be made through American banks to which the drafts on Americans have been sent for collection. These American banks will, therefore, wish to buy drafts on England in order to remit. The more usual practice, as we have seen,[1] is for our English creditors to await remittances by their American debtors, in drafts on London.

So far as foreign debtors choose to settle by remitting drafts on American banks, obligations from abroad to us do not increase the supply, here, of drafts on foreign countries. But the effect on the rate of exchange is the same, for our banks, by honoring these drafts, in so far are relieved from the necessity of buying drafts on foreign countries to keep square with their foreign correspondent banks. In other words, there is a decrease, here, of demand for drafts on foreign countries, instead of an increase of supply. But the rate of exchange is affected in the same way and to the same extent in either case.

The supply, here, of drafts on foreign countries, may be said to depend, chiefly, on the following sources of obligation and voluntary payments from them to us, though some of the obligations are more likely to be settled by remittance and therefore to increase demand abroad for drafts on the United States and decrease demand here for drafts on foreign countries, rather than

[1] Chapter III (of Part I), § 5.

to increase supply here of drafts on foreign countries. The items in group 5 are perhaps most likely to be settled by remittances. Following are the groups:

1. Purchase, abroad, of American merchandise.

2. Purchase by foreigners, from Americans, of transportation, banking, insurance, and other services.

3. Purchase, abroad, of American securities, and repurchase or redemption of foreign securities held here.

4. Agreements by which foreigners make short time loans to Americans, and (which amounts to the same thing) [1] agreements by which our bankers may draw finance bills on foreign banks; repayment of such short time borrowing done by foreign banks from American banks.

5. Payment of interest, dividends, rent, etc., on American investments abroad, remittances to Europeans travelling in the United States, etc.

On the other hand, the demand, here, for drafts on foreign countries, depends in the main on corresponding sources of obligation and voluntary payments, as follows:

1. Purchase, by Americans, of merchandise from foreign countries.

2. Purchase, by Americans from foreigners, of transportation, banking, insurance, and other services.

3. Purchase, by Americans, of foreign securities, and repurchase or redemption of American securities.

4. To make short time loans abroad, to repay short time loans from abroad and (which is fundamentally the same thing) to repay obligations incurred by American banks which have drawn finance bills on foreign banks.

[1] See §§ 4, 5 of this Chapter (IV of Part I).

5. Payment of interest, dividends, rent, etc., to foreigners who have invested money here, remittances to Americans travelling abroad, remittances to families abroad of immigrants living here, etc.

Though the lists above given correspond, it must not be assumed that the payments in one direction under any particular item are the equivalent of the payments under the same item in the other direction. In many cases the difference is very great. Thus, practically nothing is paid by foreigners to Americans for the transportation of goods, unless we include in this item the transportation in the United States itself, of goods eventually to be shipped abroad. But Americans pay, every year, millions of dollars to Englishmen for the transportation services of Great Britain's merchant marine. Similarly, the balance of payments for banking services would be against the United States, since London is the principal banking center of the world. Again, remittances by immigrants in the United States to their families in Europe would not be balanced by payments of any similar nature made by Europeans to people here. Contrariwise, payments by Europeans to Americans for merchandise might be considerably in excess of similarly caused payments in the opposite direction.

Since the United States is still, in large part, an agricultural country, its exports tend to be periodic rather than uniform. The largest exports from the United States are in the fall after the crops have been harvested. But the things we buy flow to us in a more steady stream. Hence there is, in the fall, a relatively large supply of drafts on foreign countries, for sale in the United States, and a comparatively low price for them or low rate of

exchange.[1] Banks can then purchase these bills more cheaply as a rule than at other times, and will therefore be able to sell their own demand drafts at lower rates.

§ 3

The Effect on the Exchange Market of any Country of Disturbed Political or Industrial Conditions in That Country and in Other Countries

Investments for long periods, nowadays, take place largely through the purchase of stocks and bonds, though also through the purchase of real estate, the loaning to individuals on mortgage security, etc. The buyer of a bond is a lender to the government or company whose bond he buys. The buyer of stock has a right to residual gains. The entire western European world is now a possible market for American securities, whether these securities represent public or corporate indebtedness or rights to corporate profits. To some extent, the United States furnishes a market for European securities, but to a far less extent. Europeans have, in the past, invested more here than Americans have invested in Europe. The English people, for instance,

[1] The truth of this statement is evidenced by statistics compiled by one of my students, Mr. Lawrence M. Marks, Yale 1914, from successive volumes of the *Commercial and Financial Chronicle*. Taking the highest and lowest quotations for each month, of exchange on London, and averaging all the Januaries, all the Februaries, etc., for the years 1906–1910 inclusive, Mr. Marks arrived at the following results:

January	4.872	July	4.872
February	4.875	August	4.8685
March	4.8725	September	4.866
April	4.8715	October	4.8665
May	4.875	November	4.8695
June	4.876	December	4.869

Cf. also Clare, *The A. B. C. of the Foreign Exchanges*, London (Macmillan), 1893, pp. 135, 136.

have been large accumulators, and so have forced the rate of interest in England down to a comparatively low level. Here, the rate of interest has been higher. Consequently, Englishmen have made large purchases of American securities. And, to a considerable extent, they still hold these securities, despite the tendency during the last few decades for American industry to be financed in greater degree by American capital.

Largely because of foreign interest in American securities, the exchange market may sometimes be much affected by American financial troubles. If, for a while, prosperity threatens to forsake us, many foreign holders of our corporate securities may become alarmed and endeavor to dispose of their holdings even at sacrifice quotations. American capitalists may therefore be induced, to some extent, to buy these securities back again. So far as this effect is realized, there is a tendency for the rate of exchange on other countries, *i.e.* the price of drafts on these countries, to rise. For it puts American investors under obligation to remit to those from whom securities have been purchased; or, if the foreign sellers have drawn drafts upon America, then American banks must purchase drafts on foreign countries in order to settle with their correspondents. In either case, the demand, here, for drafts on other countries rises.

If, on the other hand, investments which Americans may have in other countries, *e.g.* in Mexico or in certain of the South American republics, seem to be rendered unsafe because of threatened political disturbance or open revolution, then the endeavor of Americans to dispose of such investments will tend to increase the supply of drafts on such countries and so may lower the rate at which these drafts sell.

§ 4

Analysis of the Relations Involved in, and Explanation of the Results of, Short Time Loans Made Ostensibly by Foreign Banks, through the Intermediation of the Exchange Market

One of the sources given in our lists, of the supply in one country of drafts on another or others, is short time "loans" (*e.g.* 60 or 90 days) by banks. Some of the banks in one country may choose to "lend"[1] in another country.[2] Let us suppose that a London bank, B_e, wishes to "lend," in the United States, the sum of $50,000. It would cable its New York correspondent, B_a, to draw on it a draft payable in perhaps 90 days after sight. This draft could be sold in New York to another exchange dealer or banker, and the sum realized loaned, for account of the London bank, to an American firm or business man.

The loan made may be a so-called "sterling" (likewise mark or franc) loan, or it may be a "currency" loan.[3] In the case of the sterling loan, it is agreed that the foreign bank shall receive a definite commission or payment from the borrower, for allowing him to raise money by a draft upon it. If the loan is a sterling loan, the borrower (the American business house getting the use of the funds) takes the risk of fluctuation in the rate of exchange during the life of the loan. The American bank, B_a, draws a draft on B_e payable to the American borrower. This draft is for so many pounds sterling. Hence the arrangement is called a "sterling" loan.

[1] Who is the real lender will appear later in this section.

[2] See descriptive discussion in Escher, *Elements of Foreign Exchange*, New York (The Bankers Publishing Co.), 1911, pp. 85, 86.

[3] *Ibid.*, p. 87.

The borrower, to whom the draft is given, gets his money or his bank credit by disposing of the draft at the best price he can get. When the 90 days are up, it devolves upon him to purchase a demand draft, payable to the lending bank, B_e, and turn it over to B_a for remittance. The lending bank must honor, at the end of the 90 days, the draft drawn on it by B_a, for this will have reached London, and payment will be due 90 days after presentation. But B_e will by that time have received the bank draft purchased by the borrower, and so will be able to pay without any drain on its resources. It has gone through the form of lending while not parting with a single pound. It has only taken upon itself the obligation to pay, 90 days after sight, a sum which it was practically certain to receive (although there was, of course, some risk) equally soon from the American borrower.

The "currency" loan is different only in the formal arrangements. It serves the same purpose. B_a does not, in this case, hand over the draft on B_e, for the borrower to sell, but itself sells the draft to another bank or dealer. It then gives the borrower cash or credit in terms of American currency. That is why it is called a currency loan. The borrower gets dollars, not a claim to pounds sterling requiring to be converted into dollars. When the time comes for repayment, the borrower settles with B_a and B_a settles with B_e. The borrower pays an agreed rate of interest. The lending bank, B_e, is subject to a risk of fluctuation in the rate of exchange. If this bank foresees a probability that exchange will fluctuate favorably to it, then it will prefer to make the currency loan; if unfavorably, it will prefer to make the sterling loan.

We have seen that the so-called lending bank, B_e, is at no time out actual funds by virtue of its transaction. It lends only in name. Yet the American borrower gets funds in the form of cash or bank account, and eventually buys goods with these funds. Somewhere there is a real lender, an ultimate creditor. Who and where is he? The answer is: he is the man or firm who buys the draft when it is offered for sale in the London discount market, or the depositors of the bank from which this man or firm borrowed the means to buy. For the draft on B_e, having been sold in the United States to an exchange dealer or bank, would be sent by the American bank to its correspondent bank in London, and by the latter sold to whoever cared to invest in it. This English investor it is, or the depositors of a bank from which he borrows, who gives up early income for later. He (or they) is giving up present goods for future goods. He is the one, or these depositors are the ones, because of whose accumulations the whole transaction is possible. The American business man borrower gets, if not cash, a bank account, just as if he borrowed it from B_a, and with this bank account he buys goods. But instead of being indebted to B_a and through B_a to its depositors,[1] he is indebted, in the case of the sterling loan, to B_e, through B_e to the English purchaser of the draft, and through him to the depositors in any bank from which he gets the means to purchase; in the case of the currency loan, to B_a, through B_a to B_e, through B_e to the English purchasers of the draft, and finally to depositors in this purchaser's bank. The English bank is but a nominal lender. The English (or other) purchaser of the draft in the London discount market,

[1] See Ch. II (of Part I), § 3.

and, in the last analysis, the depositors in his bank, are the real lenders. In Chapter II we saw that commercial banking combines and coördinates sporadic convenience waiting so as to make available to borrowers in the form of loans, a considerable amount of this waiting, waiting which would in any case be done because of convenience, and which, except for commercial banking, would be of no use to borrowers. Here we see that the sporadic waiting done by bank depositors in one country, may be the means of providing borrowers in another country, with funds. As is to be expected, the waiting or ultimate lending, in the case of these drafts, is done more largely abroad, and the borrowing so made possible is done more largely by Americans.

Foreign loans of the kinds we have been describing, *i.e.* sterling and currency loans, may, if most largely made in the spring and early summer, help to tide over the periods of the year when the United States has a surplus of payments to make abroad, so that these payments need not be so large. Instead of our sending large amounts of specie abroad, English purchasers, in the London discount market, of drafts drawn upon "lending" London banks, and, through these purchasers, depositors in English banks, may become temporarily our creditors. They lend to us by providing, for a time, the capital to liquidate obligations from us to English manufacturers and merchants, obligations for which, if we could not get temporary credit, specie would have to flow. Then when the crop season comes and the pressure of obligations is more markedly the other way, we pay the holders of these drafts by transferring to them part of our claims upon purchasers of our exports. Instead of money flowing, first from here to England, for

example, and then, in the fall, from England back to us, less will have gone either way.[1] During the winter, spring, and early summer, our net indebtedness abroad would perhaps have required considerable gold shipments. But any drafts drawn during this period upon English banks, nominally lending banks, are available for purchase by American exchange bankers who must make remittances abroad. The shipment of gold abroad is thus avoided. Then in the fall when we are selling considerable amounts of grain and other products and drafts on England are low in price, and when large imports of gold might result, in payment for our exports of wheat, cotton, etc., these imports of gold are made less by the fact that those Americans who have received the temporary loans (or, in the case of currency loans, the banks which act for them) have now to liquidate their obligations by purchasing drafts on London.

The comparatively high rates of exchange on England during the seasons when we are exporting less than we are importing, and the comparatively low rates in the fall, tend to make these dealings worth while. Those who thus borrow during our surplus importing season, *e.g.* late spring or early summer, sell their drafts at a relatively high price and buy later for remitting, if in the fall, at a lower price. The London bank which engages in the operation will intend to receive its share of the gain resulting from this situation; at least in the case of the currency loan, as we have seen,[2] it clearly gets the benefit of a favorable movement in the rate of exchange on London; and we should therefore expect

[1] Cf. Goschen, *The Theory of the Foreign Exchanges*, third edition, London (Effingham Wilson), 1896, pp. 38–41.

[2] See description at beginning of this section.

it, other things equal, to engage most gladly in the lending operation described, at the very times when its doing so would avoid, or decrease in amount, successive and opposite shipments of gold.

§ 5

Finance Bills, What they Are, Whose Accumulations Make them Possible and What are their Results

The case of a finance bill [1] is not greatly different from that of a bill drawn on a foreign bank which expresses a desire to lend. There is, indeed, a difference, but it is superficial rather than fundamental. In the case of the bill drawn on a foreign lending bank, the foreign bank is lending as an investment for its own profit. In the case of the finance bill, the drawing is done for the convenience and profit of the drawing bank, in our illustration the American bank. In this case, the English bank does not request the American bank to draw on it to the end that the English bank can profit by so-called lending. On the contrary, the American bank gets the *permission* of the English bank to draw a draft on the latter. For in the case of the finance bill the English bank is under no obligation to the American bank. The latter, therefore, has no right to draw a draft on the former except by permission. Arrangement is accordingly made between the banks. The American bank, B_a, is given the right to draw on the English bank, B_e, in return for a fee or commission. B_a then draws on B_e, sells the draft in the market, and, for the time being, *e.g.* 90 days, has the use of so much extra currency.

[1] Escher, *Elements of Foreign Exchange*, pp. 94–98, gives a brief description of the finance bill.

B_a's credit is good enough so that B_e is willing to "accept" the draft or drafts, in confidence that when the 90 days after sight are up, and payment is demanded, it will already have received remittance from B_a. It will at no time be out any money. The finance bill is therefore not greatly unlike the class of bills previously described, drawn on foreign lending banks.

As in the case of the lending operation, so in the case of the finance bill above discussed, some American (or Americans), is borrowing from abroad. In the case of the finance bill, the borrower is the American bank which gets the 90-day control of currency, and, through the bank, any person or persons who are thus enabled to borrow from it. Here, as before, the real lender is the person, or firm, in England, who purchases the draft in London, whither it has been sent for sale in the discount market, and through him the depositors in the English bank or banks, whose convenience waiting gave him the means to invest in the draft. B_a owes B_e, but B_e owes this holder of its draft, and he, in turn, is indebted, through a bank as intermediary, to the depositors of that bank, whose convenience waiting provided him with the means of purchase.

Like the short-term loan operation, the finance bill — also really a loan from abroad — may serve to tide over a period of surplus imports, so that gold need not so largely be shipped out at one season of the year only to be shipped back again in a couple of months. If, in the spring and early summer, when we are perhaps importing largely and exporting less, and have, therefore, a surplus indebtedness, our banks are allowed to draw finance bills, these drafts come into the market and are available for use in paying off part of the balance

of obligations. We therefore pay previous obligations by making new ones. Considered as a nation, we postpone payment; for what one group of persons pays, another group has borrowed. Then, in the fall, when there would otherwise be a balance of obligations from others to us, this balance is diminished by our postponed obligations to them. Not only, then, are there smaller shipments of gold abroad in the earlier period, but also there are smaller return shipments at the later.[1]

It needs, however, to be demonstrated that finance bills will most probably be drawn by American banks at those times when we have a balance of obligations to meet, thus relieving the pressure, and serving, as above suggested, to obviate the necessity of gold shipments. The theory of individualism, as distinguished from socialism, is, that in serving their own interest, men are, in their economic activities (except where certain unfair methods of business are improperly permitted, or certain classes of wealth or income not really earned are unwisely secured to individuals), serving the public interest. Let us see how the individualistic philosophy applies in this case. In that part of the year when the United States owes largely, the price in the United States of exchange on foreign countries, is high. It pays B_a, therefore, to draw finance bills, and sell them at this high price.[2] On the other hand, the excess of obligations towards us in the fall, and the consequent excess of drafts on foreign debtors, for sale here, makes the price of these drafts at that time low. B_a can therefore buy drafts to repay, at a low price. If necessary,

[1] Goschen, *The Theory of the Foreign Exchanges*, pp. 38–41; also Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 78.

[2] Or itself forward them for discount and credit abroad.

the loan can be renewed by the drawing of a new draft to replace the old, in cases where it is some time before the rate falls. B_a therefore profits, besides the interest which can be earned during the time it can invest or loan the amount, by the difference between the price of the drafts at one time and another, minus, of course, B_e's commission. Such drafts are, therefore, other things being equal, most likely to be drawn by profit-seeking banks at the very times when they will serve the purpose of avoiding gold shipments.[1]

§ 6

How a Bank in One Country and a Bank in Another May, through the Aid of the Exchange Market, Invest in One of the Countries for Joint Account, without Either Bank Using its Own Funds

Another variety of this species of draft is that sometimes drawn when an American and a foreign bank invest here on joint account.[2] B_a may see that it can purchase certain securities cheaply at the time, securities which can probably be sold, later, at a substantial profit. But B_a has use for all the funds under its own immediate control, and does not wish to invest any of these funds in such securities. It suggests, therefore, to its English correspondent, B_e, that both go into this investment, on joint account, securing the means through the use of exchange. B_a then draws on B_e a draft maturing in say 90 days after sight, which is sold in New York. With the proceeds the securities are purchased and held

[1] Cf. Clare, *The A.B.C. of the Foreign Exchanges*, 1893, p. 86; also Escher, *Elements of Foreign Exchange*, p. 97, and Margraff, *International Exchange*, Chicago (The Fergus Printing Co.), 1903, p. 39.

[2] Process described in Escher, *Elements of Foreign Exchange*, pp. 133–135.

for 90 days or perhaps a less period. They are then sold, presumably at a profit, and remittance is made to B_e. The draft on B_e was purchased in New York, sent to London, and sold in the London discount market. By the time the purchaser presents it to B_e for payment, B_a has remitted. Neither bank has sacrificed the use of its own funds. As in the other cases, the capital is really furnished, in the last analysis, by the purchaser, in the London discount market, who has bought the draft, or, in all probability, by the depositors of a bank from which the purchaser borrowed the means to make the investment. Thus it is that an American and an English bank can invest here, for joint account, in securities, without either of them providing the means. The capital is really put up by an Englishman or Englishmen, but not by the English bank on which the bill is drawn. As in the case of lending by a foreign bank and the case of the finance bill, so here, there would be some additional stimulus, other things equal, to the drawing of such drafts on foreign banks at those times of the year when drawing them would decrease the shipments of gold.

§ 7

Analysis of the Relations Involved in a Letter of Credit

The exportation and the importation of goods may often be greatly facilitated by so-called letters of credit.[1] These letters of credit make possible the drawing of bills of exchange on other parties than the actual debtors, and at times such an arrangement is very helpful. As above suggested, this form of commercial credit may be used to further either import or export trade. Since

[1] Described by Escher, *Elements of Foreign Exchange*, pp. 143–160.

it will facilitate importation and since exportation by us is importation by some other country, it must facilitate exportation also.

The use of a letter of credit is as follows. A man importing goods, say from South Africa into the United States, desires to get possession of them at once, but is not in a position to pay for them until he can himself dispose of them for currency. He cannot, therefore, pay for them by remitting a bank draft. On the other hand, the South African exporter desires to receive his pay immediately. The American importer goes to his bank, say B_a, and asks for a letter of credit. If the circumstances warrant it, B_a issues such a letter, which is in the form of a request on B_e, the London correspondent of B_a, to accept, up to a given amount and under specified conditions, the drafts of the South African exporter. The London bank is informed that such a request on it has been issued to the importer. The American importer sends this letter to South Africa, and the exporter there is then in a position to draw a draft on the London bank, B_e, instead of on the American importer or his bank, B_a. If the draft is drawn for 90 days after sight, the American importer has that length of time to settle. The goods are billed to his bank, B_a, which issued the letter of credit; and the bank will probably let him take over the goods upon his signing a trust receipt securing the bank. The draft drawn in South Africa is sent to London, presented, "accepted," and sold in the discount market. The bill of lading and insurance certificate were attached to the draft to begin with, but when the latter is "accepted" the London bank detaches all documents and sends them to the New York bank so that the goods may be

secured upon arrival. By the time the draft is due, the American importer has paid his bank and it has settled with the London bank. This then is another illustration of borrowing by a business man or business men in the United States, the real lender or creditor being the purchaser of the draft, in the London discount market, and through him the depositors in some English bank.

One of the chief reasons, in fact, for the use of a letter of credit, is to enable the exporter to draw on London or some other well-known banking centre. His draft will then bring the highest possible price. London, as the principal banking and exchange centre of the world and a great exchange discount market, is most frequently the place drawn on. The exporter can get immediate payment [1] and the importer can get credit.

§ 8

Place Speculation or Arbitraging in Exchange

Just as there may be place speculation and time speculation in the case of commodities, so both of these types of speculation, or something analogous to them, exist in the case of drafts. Corn may be sent from a place where it is relatively cheap to a place where it is relatively dear. This is arbitraging in corn. Similarly there is arbitraging in exchange.[2] Arbitraging in exchange involves the purchase of drafts on one place and the sale of drafts on another. Thus, if in New York exchange on London is high while exchange on Paris is

[1] If the letter of credit is "confirmed" by the bank made drawee, then payment is absolutely guaranteed to the exporter, even before his bill is "accepted." See Margraff, *International Exchange*, Chicago (Fergus Printing Co.), 1903, pp. 88, 89.

[2] Described in Escher, *Elements of Foreign Exchange*, pp. 98–101.

low; and if in Paris, exchange on London is fairly low, an arbitraging transaction would be profitable. The arbitrager in New York would buy exchange on Paris, would instruct his Paris correspondent to buy exchange on London, and would then be able to sell in New York, exchange on London. Thus the cheaper exchange on London, available in Paris, is shifted to New York. Exchange on London is sold from Paris where it is cheap, to New York where it is dear. This activity by arbitragers, of course, tends to limit the variations in price at different places, of exchange on any one point. It is seldom possible to make a very considerable per cent gain by such transactions.

§ 9

Time Speculation in Exchange

Besides arbitraging or place speculation, there is also time speculation in exchange. As with produce, *e.g.* wheat, this speculation in time may be speculative holding, buying and selling of futures, and (a part of future selling) selling short. Suppose a New York bank to purchase bills of exchange on London and to send them over for discount (*i.e.* sale), either for immediate discount or for discount as occasion requires. The New York bank is then accumulating in England a basis for its own drafts.[1] If, at the time, bills of exchange on England are purchasable at a low price, the New York bank will be more likely to buy, and later, when exchange is higher, it will be under greater temptation to sell. If the New York bank buys exchange when the

[1] Cf. Clare, *The A.B.C. of the Foreign Exchanges*, p. 87; and Escher, *Elements of Foreign Exchange*, p. 30.

rate is low, then its buying tends to keep up the rate, and when it later sells, at relatively high prices, its selling tends to keep the rate down. This kind of transaction, therefore, acts on the exchange market just as speculative holding of wheat acts on the wheat market, namely in the direction of equalization. Such speculative holding of exchange, in so far as it exists, serves to decrease the alternate import and export of gold. When exchange here, on England, is low because of the excess of obligations from them to us, a part of this excess of obligations may take the form of available credit for American banks with English banks. So much, therefore, of the excess of obligations, need not be settled by the shipment of gold. Later, when gold tends to flow from the United States to England, this accumulated credit in England obviates the necessity of so great a flow of gold as would else occur. We may say that, since part of the money which was collectible by American banks (though perhaps collectible only through the London discount market), is allowed to remain as a credit in England, either as bank credit or as long bills not discounted but held for account of American banks,[1] the later obligations to England are paid partly by drawing on that credit instead of shipping gold.

There is also the buying and selling of futures in exchange. To illustrate, an exporter may know long in advance that he is to ship goods of a certain value at a given time. He will then be able to draw a draft on the purchaser of these goods. But if he waits until he has sold the goods before making any arrangements regarding his draft, he simply takes the risk of selling

[1] For further explanation of the nature and method of these transactions, see Ch. VI (of Part I), § 2.

the draft on his debtor for whatever is the ruling price at the time of the sale. He can, however, contract ahead for the disposal of his draft to some exchange dealer or banker, at an agreed price.[1] He is selling or agreeing to sell future exchange.

Sometimes a bank remits drafts to its foreign correspondent, some of which, being payment bills, cannot be immediately discounted for cash.[2] These bills will, of course, with few if any exceptions, eventually be paid; and if there are very many of them, then the remitting bank can estimate, because of the constancy of averages, at about what dates they will be paid. This bank is therefore in a position to promise that it will sell demand drafts on its correspondent abroad, at given dates and for given amounts. It promises to sell these drafts at some future time when it can be sure of having the balance abroad on which to draw.[3] In this case the future selling is done by a bank. By making such an arrangement, the bank guards itself against the risk of unfavorable exchange rate fluctuations. By selling futures against futures a bank can relieve itself entirely from risk of such fluctuations. The bank buys or contracts to buy, an exporter's future bills, and at the same time sells or contracts to sell, its own.

As in other dealing, so in foreign exchange, one kind of "future" selling is selling "short." To sell "short" is to agree to sell at a future time, without having, at the time of making the agreement, the means to deliver, but relying upon later purchases to "cover" the shortage. A man sells wheat short if he contracts, say in March,

[1] See Escher, *Elements of Foreign Exchange*, p. 35.
[2] See Ch. III (of Part I), § 7.
[3] Escher, *Elements of Foreign Exchange*, p. 101.

to sell for May delivery, counting on his ability to purchase the wheat in May, in order to make good the agreement. Similarly an exchange dealer sells short if he agrees to sell a draft, *e.g.* in June for August delivery, but has, when the contract is made, no bank balance abroad or salable drafts held in his name in some foreign bank, on which he may draw. He relies upon August purchases of bills to provide this foreign balance. The same in principle as short selling is the finance bill already described, and other similar bills. In the case of the finance bill, one bank does not merely promise to sell at a future time; it actually does sell, in the present, a draft on another bank where it has at the time no credit balance and no deposit of discountable bills. This draft, though sold in the present, is of course for future payment. It is a draft for 60 or 90 days or for some other period. It requires to be "covered" before maturity. Hence it may properly be classed with or alongside of other short selling.

§ 10

Summary

The starting point of our discussion of the rate of exchange has been supply and demand. At any given time the price, say in New York, of drafts on London, *i.e.* the rate of exchange on London, is fixed where supply of and demand for such exchange are equal. Thus, exchange may go above or below par, the mint equivalent in coinage.

Going back of supply and demand, we found that these depend upon purchases and sales, investments, interest and dividends, etc. Whatever tends to increase

the total payments to be made by Americans to Englishmen tends to increase the demand here for drafts on England. *Vice versa*, whatever increases the total payments to be made from them to us increases the supply here of drafts on England (or decreases the demand).

Analysis of the short time loan by a foreign bank, of the so-called finance bill, and of investment here by an American and a foreign bank for joint account, led to the conclusion that in all cases the borrower was the business firm here which profited by the loan, while the ultimate lender was the person in the London or other discount market who bought the bill and held it till maturity, or the depositors of the bank from which such a buyer obtained the means of purchase. In the case of some of these bills, most of all, perhaps, the finance bill, there is probably a tendency for more to be sold, other things equal, at those times of year when gold must otherwise be more largely exported; and to be redeemed, later, when gold must otherwise be more largely imported. The letter of credit is a scheme to get immediate payment for an exporter, a period of credit for an importer, and a chance for the exporter to make out a draft on an important financial centre and therefore a more salable draft than he might else have. As with the finance bill, short time loan, etc., the credit is really furnished by investors or by bank depositors in the discount market of the big banking centre, most likely London, where the draft is sold.

Exchange is speculated in, much as are wheat, corn, stocks, etc. There may be arbitraging in exchange, *i.e.* sending exchange on some point, from where it is relatively cheap to where it is relatively dear. Exchange

may be, in a sense, held for a rise, thus tending to steady the exchange market and decrease the flow of specie; it is subject to "future" dealings; it is sold "short." The finance bill is really, in principle, a kind of short selling of exchange. An agreement to sell at some future date, relying upon purchases of exchange in the meanwhile, to cover, is clearly selling short.

CHAPTER V

THE RATE OF EXCHANGE AND THE FLOW OF SPECIE

§ 1

The Upper Limit to Fluctuation of the Rate of Exchange, Determined by the Cost of Exporting Specie

WE have seen that, by the use of finance bills and other similar arrangements, the excessive obligations of a country to other countries during any short period may be in part balanced by the reverse obligations of a later period. We have also seen that, by speculative holding (accumulation) of exchange, the surplus obligations to a country during an earlier period may be used to offset, in part, the obligations incurred by it in a later. But sometimes there will be a net balance of obligations in one direction for several months or a year or a series of years. If so, the obligations probably will not be liquidated for the most part by postponement or by exchange accumulation. The demand for bills with which to meet a long continued balance of indebtedness will hardly be satisfied by the sale of finance bills or other bills of similar nature, for the bankers of a country cannot be indefinitely adding to their obligations of this sort and not repaying. Neither will the supply of bills caused by a long continued excess of obligations to a country be taken care of by speculative purchase and holding for a rise, since there is a limit to the amount which bankers can afford to invest in such speculative holding. If, therefore, our obliga-

tions are larger for any great length of time than the obligations to us, there will be a great demand for bills of exchange with which to remit and there will be a relative scarcity of such bills. Consequently, the price of bills or the rate of exchange on other countries, which will equalize supply and demand, must maintain a fairly high average. On the other hand, if obligations to us are for a long period in excess, the rate of exchange here, on foreign countries, must be fairly low, else the supply of drafts on these countries will exceed the demand.

Are there any limits, upper and lower, to the rate exchange may reach? Are there any limits, for instance, upper and lower, to the price that drafts on London may command in New York? If there are, what forces determine these limits?

Let us consider, first, the question of an upper limit of exchange. The price in the United States, of drafts on England, will not go above par by much more than the cost of shipping specie. For if it does so, either the demand for such drafts will decrease, or the supply will increase, or both, to such an extent that supply will exceed demand. A rise of exchange above par by more than the cost of specie shipment must decrease the demand for drafts, because many of those in this country who are debtors will, if their debts are large, find it cheaper to ship specie than to buy drafts. It is true that in some cases the debts of merchants, etc., are settled by their English creditors drawing on them. But if so, the bills drawn on these Americans have to be sent to American banks for collection and these American banks must then settle with the English banks sending the drafts. And if the rate of exchange goes above par by more than the cost of shipping gold, American banks

having large remittances to make will prefer to ship gold rather than to buy for shipment the more expensive bills of exchange. As a matter of fact, merchants, manufacturers, etc., will rarely have the facilities and knowledge or the large indebtedness to warrant their shipping gold, and will continue to send drafts. But debtor banks frequently do ship gold. We may say, then, that at a rate of exchange much farther above par than the cost of shipping specie, the demand here for drafts on England (and other foreign countries) would fall short of the supply. Therefore, such a rate could not continue.

We arrive at the same conclusion from a study of the supply side of the market. If the rate of exchange, *i.e.* the price of drafts, rises above par by more than the cost of specie shipment, then it will pay some banks, even though they owe nothing, to export gold. The gold will be exported to a consignee, say a foreign correspondent bank in London. Then the American bank can count on having a balance or drawing account in the London bank, in the same manner as if drafts had been sent. On this balance, the American bank can draw its own drafts for sale in the United States, at the high ruling rate, to persons having remittances to make. By so doing, the bank adds to the supply, here, of drafts on England, and the ordinary business man has no occasion, himself, to ship gold. So a rise in the price of drafts on England, beyond a certain point, will tend to increase the supply of such drafts. And at a price which exceeds par by much more than the cost of shipping specie, supply would almost necessarily exceed demand, because the shipment of specie on which to sell drafts would be so profitable. It follows that the rate of exchange cannot, ordinarily, be expected to exceed par by much more than the gold

shipment cost. It is kept down by forces on the supply side of the market, as well as by forces on the demand side.

We may fairly assume the cost of gold shipment between New York and London to be, for large quantities, about $2 per £100, including charge for transportation, insurance, and all other expenses. Then, since par between New York and London is $486.65 = £100, the price in New York of sight drafts on London could not much exceed $488.65 = £100. So soon as it gets as high as that or higher, it becomes as cheap or cheaper for New York banks to settle their indebtedness to English banks by purchasing and shipping gold as by purchasing and shipping drafts. A draft on London for £100 would cost, if exchange were at its highest point, $488.65 or more. But if $486.65 in gold could be shipped to London for $2, making a total expense of $488.65, no New York bank, having a remittance to make, would pay a higher price for a draft. Hence the demand for drafts on England must fall. Likewise, so soon as exchange gets higher than $488.65 = £100, it becomes profitable for New York banks to purchase gold, ship it abroad, and sell drafts drawn on the credit so secured. $486.65 in gold plus $2 for shipment, loss of interest, insurance, etc., makes $488.65, total expense. The $486.65 is worth in England, mint equivalent, £100. If a draft on the English consignee for £100 will sell for more than $488.65, it is obviously profitable to ship gold and sell drafts. To ship drafts instead of gold might be less profitable, because of their high price. Because of gold shipments, the supply of drafts on England must be greater.

The cost of gold shipment, however, may, under the

pressure of special circumstances, go far above $2 per £100; and this cost is, therefore, a somewhat elastic rather than a definitely rigid limit to the possible rise of exchange. For example, the prospect of a great European war caused insurance rates on gold shipments to Europe to rise as high as 1 per cent on July 30 and 31 of this year (1914).[1] Such charges, nearly $5 per £100 for insurance alone, at a time when there was a strong movement in foreign countries to sell securities and realize gold, and when, consequently, the United States was exporting gold, made possible a rise in exchange rates much above the usual upper limit. In fact, the foreign exchange market seems to have been, in this case, completely demoralized by the suddenness of the crisis.[2] The immediately ensuing outbreak of war on an extended scale brought a sudden check to trade in general, including the export of gold. One vessel, the *Kronprinzessin Cecilie* of the North German Lloyd Company, which had left New York July 28 carrying over $10,000,000 in gold and silver consigned to English and French banking houses, returned with her cargo to the United States (Bar Harbor, Me., Aug. 4) rather than risk capture.[3]

§ 2

Some Details Connected with the Exportation of Specie

A number of details of the gold export operation may now claim our attention. Let us consider first the loss of interest during transportation of the gold. If it takes seven days to transport the gold and if the draft drawn upon it is sold when the gold is shipped and goes abroad

[1] See *New York World*, July 31 and Aug. 1, 1914.
[2] *Ibid.*, July 31, 1914.
[3] *New Haven Evening Register*, Aug. 4, 1914.

at about the same time, this draft can hardly be honored in less than seven days. The purchaser of the draft, therefore, must pay for it seven days before his foreign creditor can receive the money, and so must lose seven days interest. The alternative to such a purchase would be to wait seven days and buy a cable. If he buys the banker's draft on the gold he will, presumably, pay very slightly less for it in consequence of this period of waiting. Accordingly, the price received by the drawing bank is very slightly less. Any demand draft, however, other than a cable, must suffer such a deduction for interest. And demand drafts drawn when goods are shipped, on the consignees, cannot usually be cables, since the consignees cannot be expected to pay for goods before receiving them. Any exporter, then, may be said to lose interest in the same way. He ships goods which may not reach their destination for several days or weeks. If they arrive on the same steamer as his draft (which is at once shipped by the purchasing American bank), the draft may be made payable at sight. But even then there is time lost. Had the goods been sold at home, this loss need not have occurred. It is one of the deductions from the benefits of trade between widely separated areas, that wealth in transit is temporarily kept out of use. The American exporter may get more for his goods, if sold in England, than he could get at home, and the English buyer may get these goods more cheaply than if he purchased them in his own country. This gain to both parties will presumably exceed all losses, including the loss of time, incident to handling and transporting the goods. Otherwise the trade would not take place. But the cost of transportation makes the net gains considerably less than they would else be, and the loss of

time involved makes them somewhat less. The exporter of any goods, then, may be said to lose something in interest when he sells a sight draft on the consignee, though the price he receives for the goods may make the transaction well worth while. The gold exporting bank is no exception. This slight loss, however, is not ordinarily reckoned as one of the expenses of exporting gold. The banker thinks of the price his draft brings, as his receipts, and does not regard the slight reduction below what it would yield if collectible at once, as an expense. Insurance of the gold, transportation charges, etc., are deductions, along with the cost of the gold, from his gross returns, and these he regards as his expenses.

When gold is exported, it must be assayed, weighed, etc., on arrival, and, since this requires some three days, there must be subtracted interest for that time from the shipper's gross profit. If the draft drawn upon the gold is a sight draft, it may be presented and paid three days before the gold shipped can rightly be credited to the drawer. If so, there is technically an "overdraft" on which interest has to be allowed by the American gold exporting bank[1] to the English consignee bank. That is, this interest must be deducted from the balance in England on which the American bank can draw. When the American bank exports gold as the cheapest means of settling a debt, there is the same loss of time, and so, in a sense, loss of interest, during assaying, weighing, etc., as well as during transit.

Still another detail should be mentioned. In New York, or at any United States subtreasury, gold is always purchasable with dollars (*e.g.* United States notes, gold

[1] See Escher, *Elements of Foreign Exchange*, New York (The Bankers Publishing Co.), 1911, pp. 114, 115.

certificates or silver) at the same rate or price. An ounce of pure gold is always worth $20.671, and an ounce of gold 9/10 fine is worth $18.604. The subtreasuries aim to have bar gold available, but if the supply is exhausted, then gold coin can be secured for export. There is no question, therefore, here, as to the cost of the gold to be shipped. But there is some variation in the amount of coin of the realm which the specie may be worth on arrival in Great Britain. This is because, while the bank of England is by law compelled to pay £3 17*s.* 9*d.* per ounce for gold, the mint equivalent of an ounce is £3 17*s.* 10½*d.* Any one can get the larger amount for his gold by waiting to have it coined. But on account of the delay and consequent loss of interest while the gold is being coined, together with the labor of weighing and assaying, the bank is not compelled to give the mint par for gold; though, to relieve others of the necessity of waiting, it is under obligation to give for it the somewhat less price stated above. The bank, however, may have sufficient use for gold, for reserve, export, or other purpose, so that it will bid the full mint price or even more. If all gold coins were full weight, the bank would never bid more than the mint price, since coined gold could be used and it would be cheaper to use coined gold for any purpose for which the gold bars (or bullion) might be desired, than to pay a higher price for the latter. The price of gold would, in that case, fluctuate between £3 17*s.* 9*d.* and £3 17*s.* 10½*d.* In fact, it may and sometimes does go slightly above the latter price, because the bank may be purchasing gold with worn coins, which, while within the legal limit of tolerance in England, would have to pass by weight if exported. The American bank which exports gold to England cannot tell, there-

fore, just what it will be worth on arrival (though doubtless some one could be found to guarantee a price). The money value on arrival will depend, slightly, on what is being offered for gold at the time.

Sometimes the export of gold involves a triangular operation.[1] For instance, B_a wishes to get a balance with B_e in England, on which to sell drafts. Drafts on England, here, are high, and B_a does not wish to buy any in such a market. But it may happen that in Paris, drafts on London are below par. The high rate in New York of drafts on Paris, however, tends to discourage arbitraging. Instead, B_a can ship gold to its Paris correspondent, B_f, and order the Paris bank to buy a draft on London. This draft is sent to London for discount, and B_a then has a balance in London, with B_e, on which it can draw at a profit above cost.

§ 3

The Lower Limit to Fluctuation of the Rate of Exchange, Determined by the Cost of Importing Specie

As the rate of exchange has an upper limit, though of course a slightly elastic one, so also it has a lower limit. If exchange falls below par by much more than the cost of importing specie, either the supply of drafts on foreign countries must decrease, or the demand for such drafts must increase, or both, to such an extent that demand exceeds supply. The supply of drafts on foreign countries would tend to decrease, because those having collectible debts abroad in any considerable quantities, on which they desired to realize, would find it cheaper to pay for the importation of specie than to sell at so great

[1] See Escher, *Elements of Foreign Exchange*, p. 120.

a discount, drafts on their foreign debtors. Suppose, for example, that exchange in New York on London were below $484.65 = £100. Then any New York bank, or other person, desiring to call back funds held in London or to collect a debt from there, would prefer to pay $2 per £100 for importation, and have $486.65 minus $2, or $484.65 for each £100, than to get less than that amount by selling a draft at a very low rate of exchange. This applies, of course, only when the circumstances (or agreement) are such that the creditor is obliged to bear the risk of exchange fluctuations. Otherwise, the debtor would be expected to remit draft or specie. But wherever settlement is to be made at, in this regard, the creditor's risk (and this might be the case, for example, where a creditor bank has decided to withdraw funds which it has itself put on deposit abroad), the effect of a very low rate of exchange on any point would be to decrease the supply of drafts on that point and substitute importation of specie. With exchange so low, it would pay better for banks to withdraw their balances from abroad than to sell drafts upon those balances.

A low rate of exchange, below $484.65 = £100, would also tend to increase the demand for drafts. For such a rate of exchange would make it worth while to import gold for profit. £100 of full weight English money would be worth, in this country, $486.65. Subtracting $2 as cost of transportation, insurance, etc., there is left $484.65. If the gold can be purchased with a draft on an English bank, a draft which, because of the low rate of exchange, costs less than the above sum, the operation is profitable. (It is not intended to assert that the importation of so small a sum would be profitable. Rather is it here assumed that the £100 is only a part of a much

larger sum.) The low price of drafts, then, stimulates the demand for drafts as a means of paying for English gold. Thus, on the supply side as on the demand side, there is a limitation on the extent to which exchange can fall. The lower limit of exchange fluctuations, like the upper limit, is not, however, absolutely and permanently fixed, since the cost of shipping gold may vary, — for example, by higher insurance rates in war time. In practice, the ordinary business man does not himself import gold but takes advantage of the demand for his drafts by banks which use the drafts to pay for gold. With importation of gold from England, as with exportation to England, allowance must be made for the possible slight fluctuation in the price of gold in terms of pounds sterling.

§ 4

Circumstances which May Cause the Rate of Exchange to Fall Below what is Usually its Lower Limit

But the rate of exchange may sink considerably below what is ordinarily the gold shipping point or so-called specie point, in times of panic or of great financial disturbance accompanied by a relatively large supply of exchange.[1] The principles involved are the same at such times as always, and the factors to be considered are the same, but one of these factors, loss of time or loss of interest, comes to have exceptional importance. If, when panic conditions prevail, sellers of goods have bills on foreign purchasers, they will be anxious to realize on these bills at once. In a crisis, both cash and credit are relatively hard to get.[2] At the peak of the crisis, there is a so-called stringency. Interest rates are high. The sellers of

[1] See Goschen, *The Theory of the Foreign Exchanges*, London (Effingham Wilson), 1896, pp. 49–52; also Bastable, *The Theory of International Trade*, London (Macmillan), 1903, pp. 85, 86.

[2] See Ch. II (of Part I), § 7.

drafts do not want to lose interest and will, therefore, sell at a low price so as to get cash immediately. Especially if their creditors are pressing them hard or bank loans are difficult to get, they must make the most of every available resource, at once. Rather than wait for importation of gold, they would sell drafts at a considerable reduction below the usual price. It is the same when the creditor is a bank. If, at such a time, it has occasion to draw on a foreign balance, it will desire, like others, to get control of such resources at once, and may accept an unusually low rate of exchange rather than resort to importation. Neither will a bank, at such a time, be likely to import gold for profit unless the profit is exceptionally great. To buy gold abroad is to subject itself to a considerable wait pending the arrival of the gold, during which time part of its funds are unavailable for other business. But during a crisis a bank is least liable to desire, even temporarily, to part with funds. It will be induced to do this only by hope of an exceptional profit, only, that is, if the price of the exchange which it must use to buy foreign gold is below the usual gold importing point. Some few creditors may be in a position to secure immediate payment by cable. But those whose claims are based on the export of goods cannot expect thus to be paid in advance of the goods' arrival. Furthermore, at a time when the balance of indebtedness is from foreign countries to us (and it is such a time that we are considering), a part of that indebtedness must be settled by shipments of gold and so necessarily requires an interval of waiting while the gold is in transit. It is this necessary wait, most unwelcome at a time of stringency, which forces the rate of exchange below the usual specie point.

§ 5

The Cost of Money Shipment in Domestic Exchange

It should be noted that the principles of domestic exchange are not different from those of foreign exchange. Money has to be shipped from one part of the United States to another, as it has to be shipped between countries, and it costs something to ship it. But in domestic exchange the distances average less and the expense is smaller. The express companies will carry $1000 from New York to Chicago for 40 cents.[1] To carry $486.65 across the ocean, pay for insurance, weighing, assaying, etc., costs about $2 (in large quantities), or over $4 per $1000, making an expense more than ten times as great.

Of course even the trifling charge of carrying money about our own country might well affect the price of drafts to that extent, and in fact it does so when banks buy and sell domestic exchange of and to each other. But in dealing with customers, it is usual for the banks to pay no attention to this expense. On the contrary, they pay to their customers when buying the latters' drafts, and charge them when selling drafts to them, a more nearly flat rate, which includes only a proper fee for bank services, reasonable interest for time elapsing before maturity, and reasonable insurance for the possibility of non-payment. The up and down fluctuations of exchange between the shipping limits are borne by the banks, and, since they gain about as much by one set of fluctuations as they lose by the reverse changes, they just about make, on the average, a fair return for their service to the community.

[1] See Taussig, *Principles of Economics*, New York (Macmillan), 1911, Vol. I, p. 466.

As a matter of fact, such a small proportion of the total business done requires shipment of actual money that the expense, considering the low cost of domestic shipments, may well be regarded as negligible. To illustrate, a New York bank might have sold $1,000,000 of drafts on Chicago and bought $998,000 of drafts on Chicago. It might then be necessary to ship $2000 to Chicago at a cost of 80 cents. But this would be an expense for the entire business transacted, extremely small, and the bank might well ignore it. At any rate, such, in domestic exchange within the United States, is the custom.

§ 6

The Long Run Effect of a Balance of Payments from One Country to Another, for Commodities or Services

So far we have discussed chiefly the more immediate effects, upon the exchange market, of given conditions. Let us now consider some of the long run or ultimate effects. These depend mainly on the relative prices or levels of prices of goods in different countries. We have seen that the determination of the level of prices in any country is expressed in the equation

$$MV + M'V' = pq + p'q' + \text{ etc.},$$

where M is money, M' is bank deposits, V and V' are velocities of circulation, the p's are the prices respectively of different kinds of goods, and the q's are the quantities of these goods. We have seen, also, that M' tends to increase or decrease in sympathy with M. We have, therefore, drawn the conclusion that if, in any country, M increases faster than the q's, prices will rise, while if M decreases, they will fall.

Bearing in mind these facts, let us now consider the long run influences of the following sources of exchange, on the rate of exchange and on the flow of money:

a — Payments for commodities.

a' — Payments for services, *e.g.* freight, banking, etc.

b — Payments of funds for investments, *e.g.* international lending and investing.

c — Payments of interest, dividends, etc. on such investments.

c' — Payments from home funds to persons of one section or country, travelling in others.

c''— Payments to families of immigrants.

Regarding payments for commodities, it is to be noted that these are generally purchased where they can be got most cheaply. If we can buy most commodities more cheaply in England than here, then there will be a demand for exchange on England with which to pay for them, and exchange on England will rise. If such a condition (large purchases from England) lasts for any great while, the rate of exchange will probably go high enough to encourage the exportation of gold. As a consequence, since in each country there is a relation between gold bullion and money,[1] M, and therefore M' also, will increase in England and decrease here. Prices will rise there by comparison, and fall here. We shall cease to buy so much in England, and England will buy more of us. Great purchases by us of foreigners tend, therefore, to cause great purchases by foreigners of us. Money flows one way or the other because commodities are purchased, all things considered, where they are cheapest. Briefly, commodities are bought where prices are low; the rate of exchange elsewhere on these low price places

[1] See Ch. I (of Part I), § 7.

is therefore high; gold is therefore shipped to the low price places, and, since it is in large part coined, because of the law of flow between bullion and coin, prices in those places tend to rise. Though equilibrium is ever being departed from, it is ever tending to be restored.

But this does not mean that if, for instance, wheat is cheaper in the United States than in England, and England buys wheat of us, we then, when English prices have fallen and ours have risen, begin in turn to buy wheat of England. Wheat never becomes cheaper there than here. What is more likely to happen is that, when our prices rise and theirs fall, they will buy less of our wheat than before, and either raise more themselves, buy more elsewhere, use a substitute, or simply get along with less. We, on the contrary, when prices have fallen in England and risen here, will perhaps buy more cotton cloth in England, and either make less here, buy less elsewhere than in England, substitute it for another kind of cloth, or use more cloth.

A purely superficial consideration might lead to the conclusion that we can always buy goods in England more cheaply when exchange on England is low. A lot of English goods worth £100 or, in our money, at the mint equivalent, $486.65, might cost $489 if exchange were high and only $484 or some $5 less, if exchange on England were low. But the conclusion that low exchange on England means an opportunity to buy goods there more cheaply applies with certainty only on the supposition that other things are equal. And the very fact that exchange on England is low is evidence that other things are not equal. Low exchange on England indicates, as we have seen, a large supply of drafts on England. Therefore it probably indicates that we have been selling

to England a relatively large amount and buying from England a relatively small amount of goods. The presumable cause of this situation is relatively high prices there and relatively low prices here, as compared with other times or seasons. To be specific, at the time when low exchange would enable us to buy in England £100 worth of goods for $484, it is probable that prices in England are comparatively high and that £100 will buy less there than at other times, compared with what money will buy here. Expressing the fact in general terms, we may say that, when money has flowed from here to England in such quantities as to make their prices higher and ours lower, it pays to sell to them rather than to buy from them, even though, at such a time, exchange on England is below par. Low exchange on foreign countries does tend to stimulate importation, and high exchange to stimulate exportation, but exchange fluctuations are too narrow to be of determining influence. If, for example, Americans purchase largely in England, the necessity of remitting will make exchange on England high, and will in so far discourage further purchases from England, while encouraging sales to England and encouraging English merchants to purchase goods here. But exchange cannot rise high enough to influence, very strongly, the importation and exportation of other goods, because so slight a rise causes shipment of gold (which, because of its great value in small bulk, is inexpensive in proportion to value, to ship).[1] It is quite likely, then, that excess buying of Americans from abroad, will not be checked or give rise to corresponding purchases by foreigners from this country, until a flow of gold has changed relative price levels.

[1] Cf. Ch. VI (of Part I), § 9.

Payments for freight, banking, and other services affect exchange in the same way as do payments for commodities. For example, payments for ship transportation services are supposedly made where these services can be secured most cheaply. Thus, a maritime nation like Great Britain could sell to us the services of her ships; and the resulting flow of money towards Great Britain and higher prices there of various goods, would give rise to their purchase of such goods, *e.g.* wheat, from us. Great Britain might be said to export transportation, banking, and other services, and to import food.

Summarizing the conclusions of this section and combining them with previous conclusions, we may assert (1) that the rate of exchange in one country on another depends upon the supply of and the demand for drafts; (2) that the supply of and demand for drafts depends on the direction of obligations and other occasions for making payments between the countries; (3) that the direction of obligations, etc., depends largely upon the surplus of commodities and services purchased by one country of another; and (4) that the surplus of commodities and services purchased by one country of another depends upon the relative prices of those commodities and services in (or as sold by) the countries concerned.

§ 7

The Long Run Effect of International Investments upon the Rate of Exchange and the Flow of Money

We have next to examine the long run effect of international (or interterritorial) investments upon the rate of exchange and upon the flow of money. If, for example,

Englishmen invest in the United States, if we borrow of them or sell securities and other property to them, what is the immediate effect? It is to increase the supply, here, of drafts on England, or decrease the demand for such drafts,[1] and so to lower the rate of exchange on England; and to increase the demand in England for drafts on the United States, raising there the rate of exchange on us (though this fact is obscured by the custom of quoting the rate in England, as here, in American money). Then it becomes worth while for American banks to import and for English banks to export, gold. As a second consequence, therefore, gold flows from England to the United States. Since much of this gold, because of the laws of interflow between gold bullion and gold coin[2] is a subtraction from English money and an addition to American money, prices will tend to fall in England and will tend to rise in the United States. Then it will become profitable for us to buy more goods in England, while England will buy less goods of us. As a next consequence, the obligations from us to them will be in excess, and the rate of exchange on London will rise. Therefore, gold will be shipped back again in return for other goods.[3] This return flow must continue until English and American prices (supposing no new influences to intervene) are in about the same relation as before the lending or investing began. That means that in each country the quantity of money must be in about the same relation as before to the quantity of goods. Speaking roughly, we may say that the invested money flows back for goods, or that what is really invested is

[1] See Ch. IV (of Part I), § 2.
[2] See Ch. I (of Part I), § 7.
[3] See Taussig, *Principles of Economics*, pp. 468–471.

usable capital. If Englishmen invest in the securities of a new American railroad, what we really get from England may be steel rails, engines, etc., or cloth, coal, and other goods to be consumed by us while we are making the rails and engines. International lending and investing is most decidedly a lending and investing of capital wealth in such forms as are here suggested, and not merely a flow of money.

Foreign investments here may, in fact, take largely the form of usable capital, without the intermediation of these stages of inflow and outflow of money. The fall in the rate of exchange on foreign countries, consequent on such investments, itself tends to make foreign goods slightly cheaper in terms of American money and so to encourage, somewhat, importation of usable capital, even before the tendency to importation is accentuated by the change in relative price levels.[1] And if gold does flow in to some extent, the tendency for it to flow out for other goods may show itself so quickly that, aside from the first slight inflow, the purchase of capital goods abroad keeps pace with the investments made by foreigners here. In effect, the foreign investors send us, perhaps almost at once, capital other than money.

§ 8

The Long Run Effect of Various Other Payments from One Country to Another

The third group of purposes for which bills of exchange and money are sent from country to country, is to pay interest, dividends, and profits on investments, to send remittances to persons travelling abroad, and to send

[1] Cf. § 6 of this chapter (V of Part I).

remittances to the families of immigrants. We have just seen that, when foreigners invest here, such investment, in the long run, is an investment of consumable goods, or of the machinery of production, or both. In the long run, what flows here is goods rather than money. After a time, interest is earned on the bonds foreign investors have purchased, dividends are declared on the stock, etc. Having secured the use of foreign capital, we must pay interest on it. There arises then a demand for exchange on foreign countries in order to pay these investors their profits. This demand makes exchange on foreign countries high (while on us it is low), and it becomes worth while for gold to be shipped from us to them. The same kind of result occurs if and when the invested capital is itself repaid (*i.e.* if American investors buy back from foreigners American land, securities, etc.). Consequently foreign prices tend to rise and ours to fall. Therefore, foreigners buy more goods of us than previously, and the money flows, chiefly,[1] back here. In the last analysis the interest and dividends received are practically all in the form of food, raw material, manufactured goods, etc., and are not merely money.

So, in the last analysis, remittances to Americans travelling abroad and to the families of immigrants, have the same result. Our countrymen travelling abroad receive from home, in the long run, not money, but goods. Of course they may purchase chiefly European

[1] Not, perhaps, entirely, because the somewhat larger amount of goods in foreign countries, consequent on the flow back to us, for goods, of the interest and dividends money, may require a little more money to be circulated. But the rapidity of circulation of money and the fact that it is the basis for bank credit circulating even more rapidly, would seem to signify that a very large increase in the quantity of goods abroad would call for but a slight increase in money.

goods, but, if so, they thereby put some Europeans in a position to get American goods. In the long run, it is chiefly goods other than money which flow in trade.

§ 9

Summary

Though the use of bills of exchange obviates, to a large degree, the necessity of shipping money or gold, nevertheless, as we have seen, balances must be thus settled. A continuous balance of obligations in one direction will cause gold to be shipped, by affecting the rate of exchange. It will become cheaper to settle indebtedness by shipping gold, and the exportation or importation of gold may be undertaken for profit. A high rate of exchange, here, on any country, will cause shipments of gold to that country; a low rate will cause importations of gold from that country. Exportation of gold to any country will tend to keep down the price of drafts on that country by decreasing the demand for them (debts being settled by gold) and by increasing the supply of them (drafts being drawn on consignees when gold is shipped for profit). Importation of gold from any country will, analogously, tend to keep up the price of drafts on that country by decreasing the supply of drafts (gold being imported instead of drafts being drawn), and by increasing the demand for them (to purchase foreign gold imported for profit). The rate of exchange can, therefore, go above or below par by only about the cost (with perhaps a reasonable profit) of shipping specie. But at a time of stringency, when most business men in a country desire to secure funds as quickly as possible, the rate may go somewhat lower than what would usually be the gold importing point.

In the long run, specie tends to flow to those places where other desired goods are cheapest (and specie, therefore, of most value or purchasing power in comparison with those goods), and from places where goods other than money are high. So lending and investing between countries is really, in the main, a lending and investing of capital goods rather than money; for the flow of money changes the relative levels of prices of the countries concerned, and brings about a reverse flow. The same principle applies to the payments of interest and dividends, remittances to persons abroad, etc. The use of bills of exchange and money complicates these business relations of countries and territories; but it does not change the essential fact that trading, lending, investing, and profiting involve, in the last analysis, capital and consumable goods rather than money. Money (as well as bills of exchange, etc.) is a part of our machinery of production, but only a part, and it is as a part of this machinery that it is of use in international and interterritorial business relations.

CHAPTER VI

Further Considerations Regarding the Rate of Exchange

§ 1

The Price of Long Drafts Determined in Part by the Rate of Interest or Discount

The price, here, of bills of exchange on any given country, at a given time, may be regarded as being made up chiefly of two factors. These are, the rate of interest or discount, and the pure rate of exchange. The pure rate of exchange is the rate on demand or sight drafts. As to these there is no element of time except, of course, the time required for the carriage of the drafts from the one country to the other. Ignoring the slight interest thus involved, some $\frac{1}{50}$ of the yearly rate, we may say that the rate of exchange on sight drafts is pure exchange. It is the rate of exchange on sight drafts, which we have in mind when we say that exchange can ordinarily fluctuate only between the specie points or shipping limits.

But with other drafts, the rate of interest or discount is an important fact to consider. Many of these drafts are drawn to run for periods of 60, 90, and even 120 days after sight. Since payment on such a draft cannot be required before maturity, the investing purchaser of the draft is in the position of a lender or investor until then, unless, of course, he sells to another. As a lender or investor, he will wish to get interest on his investment, and since the amount he is to receive at

maturity is definitely fixed, he can secure interest only by paying somewhat less than this amount when he buys the draft. In short, the investing purchaser must discount the draft for the time it has to run, and the amount of this discount will depend upon the rate of discount or the rate of interest. Since the investing purchaser is sure to discount the draft, the exchange bank which buys it in the first instance, intending to have it sold in the exchange market, must also discount it. Thus, even if exchange here, on England, were above par, say $488.65 = £100, a draft for £100 having some time to run might, because of the element of time, be selling for $482.

It may be noted in passing that an importer can, in effect, secure a cash discount on his purchases by remitting a 60-day or 90-day draft. Suppose he has purchased £100 worth of goods in London, payment to be made in 90 days. If it is agreed that he shall remit, he can, just before maturity of the debt, buy a draft and send it. But he can also, if he prefers, buy immediately a draft payable in 90 days. If he does this, he will get the draft at a discount. His goods will cost him less because he is prepared to pay at once. As a matter of fact, banks frequently sell such time drafts to importers.

§ 2

How Long Drafts on Foreign Countries are Held as Investments by American Banks

The fact that many drafts run for periods of several months and, being purchased at a discount, yield interest to the holders of them, makes these drafts desirable as short term investments. Sometimes the bank which

originally purchases long drafts, in the "drawing" country, prefers to realize this interest, rather than to have such drafts sold at once in the discount market of the "accepting" country. Let us suppose that for a time the discount rate on safe drafts, in the German market, is 7 per cent, while conditions of business in the United States are such that American banks cannot earn more than about 5 per cent on their capital used at home. Under these conditions, an American bank purchasing drafts on Germany, having some time to run, would probably not send them to Germany for immediate discount at the comparatively high rates there prevailing; but would be more apt to hold them in its own vaults, or have them held for its account by its German correspondent, until maturity or near maturity, in order to realize a larger sum.

Before describing the method of procedure commonly followed when drafts on foreign countries are held in its own vaults for investment by an American bank, it is essential to note that bills of exchange or drafts used in international trade, are generally made out in duplicate, the different copies being known as firsts and seconds. This has long been the custom in such trade, as a safeguard against possible loss or miscarriage of one of the drafts. Whichever draft first reaches its destination is presented for acceptance, and when it is paid the debt is cancelled. Extra copies of bills of lading and other documents may also be made.

Consider now the procedure which may be followed by the investing American bank in holding the drafts on Germany.[1] On the day of purchase by an American

[1] Described in Margraff, *International Exchange*, Chicago (Fergus Printing Co.), 1903, p. 61.

bank of drafts on German banks or merchants, the "firsts" of these drafts or bills of exchange are not indorsed by the American bank to the order of its German correspondent, as would be done if the drafts were to be sent over for immediate discount and credit or for holding abroad subject to cable order. On the contrary, there are written on the faces of these firsts the words "for acceptance only." Then the German correspondent bank to which the drafts are forwarded, is requested to have them "accepted," and to hold them subject to the call of the seconds properly indorsed by the American bank. Any duplicate documents, such as duplicate bills of lading, attached to the seconds, are detached and sent to the German correspondent bank, which is instructed to turn these documents over to the drawees provided the latter accept the drafts. The seconds, clean of all other papers, are kept by the investing American bank. On the face of each of these seconds is written: "Accepted firsts held by ——," giving the name of the bank to which the firsts were sent. The American bank gets as profit the difference between the discounted value paid for the drafts and the amount realizable from them at maturity, minus the correspondent's commission.

When the date of maturity approaches, the American bank will indorse the seconds, presumably to the above described correspondent bank, and forward them to it for credit. As a matter of fact, the American bank need not, if it prefers otherwise, send the indorsed seconds to the foreign bank which holds the firsts. The seconds can, if occasion requires, be indorsed to any bank, for the firsts are held subject to the call of the indorsed seconds, and must be handed over (or credited, as the case may be)

on presentation of these indorsed seconds.[1] The two together constitute a completed bill.

The drafts may be so indorsed and forwarded to the correspondent bank for discount and credit at any time when rates of discount make it seem profitable to send them.[2] They are not necessarily held until maturity. But, in any case, the amount realized (minus commission) is placed to the American bank's credit, and it can then sell drafts on this credit. Of course, the investing bank takes some risk of fluctuations in the rate of exchange. If the rate falls, the bank will get somewhat less when it sells its drafts on this credit. If, on the other hand, the rate of exchange on Germany was low when the American bank bought the drafts for investment, so that they could be purchased more cheaply, and is high when the bank is ready to sell its own drafts on the credit secured (at maturity or before), then the bank will realize an additional profit.

But the American bank, even if desiring to avail itself of higher interest rates existing temporarily in Germany, will often prefer to indorse the drafts it has purchased to its German correspondent, and have them held by the latter, after acceptance, subject to instructions by cable. An advantage of this method lies in the possibility of immediate sale at any time before maturity if low discount rates make it desirable to have the drafts sold. If to have them sold does not appear to be profitable, they can be retained till maturity for account of the remitting bank.

[1] Margraff, *International Exchange*, p. 65. [2] *Ibid.*, p. 63.

§ 3

Influence on the Price of Long Drafts, of Interest Rate in Drawing Country and of Interest Rate in Country Drawn Upon

We have seen that the prices of bills of exchange, other than sight bills, depend upon the rate of interest. We have also seen that bills of exchange involve two trading countries; and in the previous section attention has been called to the fact that the rate of interest in one such country may be different from the rate of interest in the other. Which of the two rates of interest or discount will, in such a case, determine the price of a bill of exchange drawn in one country on the other?[1]

In the first place, let us suppose interest to be comparatively high in the country where the bill in question is drawn, say the United States, and comparatively low in the country on which it is drawn, say England. On this assumption, the amount of the discount, and, therefore, the price of the draft, will depend on the rate of interest or discount in the country on which the draft is drawn, viz., England. For if the rate of discount in England is very low, then the draft will sell, in England, for a high price, that is, for a price comparatively near the maturity value. And since it will thus sell in the English discount market for a high price, therefore the American bank which first allows cash for it to a mercantile or other establishment, can afford to pay a high price for the draft. The American bank which buys the draft does not need to wait until maturity to realize on it, but can have it discounted immediately on its arrival

[1] The reasoning here followed is that of Goschen, *The Theory of the Foreign Exchanges*, third edition, London (Effingham Wilson), 1896, p. 137.

at London. The American bank does not need to lose, for a long period, the use of its capital. As a consequence, competition among American banks will force up the price of such drafts to somewhere near what they will bring in the English discount market. Our conclusion must be that if the interest rate in the country drawn upon is the lower, this interest rate determines the price of long drafts in the drawing country also.

But suppose, on the other hand, that the rate of interest is higher in the country drawn upon, say England, than in the drawing country, the United States. On this hypothesis, a draft on England would be discounted in England at a comparatively high rate, that is, would bring a relatively low price. Would its price be equally low in the drawing country? Certainly if the purchasing bank in the United States intended to send the draft at once abroad for discount, such a bank could not afford to pay more. To do so would mean a definite loss. But, on our present hypothesis, a draft purchased at the low price based on the discount rate in England, will yield a greater return on the investment than the prevailing rate of interest in the United States, the drawing country. Competition among banks in the drawing country, desiring to invest in such bills of exchange, may, therefore, raise the price of the draft slightly above its value in the country drawn upon; for even then it will bring a larger return by way of interest than is being realized generally in the drawing country. The seller of the draft may hope to get for it a little more than the price it would bring in England, while the purchasing bank realizes more than the rate of interest in the United States, enough more to induce this bank to buy and hold the draft as an investment, or have it held for its account

abroad. When, therefore, the rate of interest is lower in the drawing country, the price of the draft will be determined, at least in small part, by that rate of interest. It should be added that if conditions change during the life of a draft, so that interest is lower in England, such a draft held here as an investment is likely to be sent there for immediate discount at the high price realizable.

As a matter of fact, the discount rate in London, as also in other great European centres, is almost always lower than in New York. The usual rule, therefore, is for American banks to have their drafts on England discounted there at once. Their capital can be more profitably invested at home than in holding long drafts on English debtors. On the other hand, English banks do not have long drafts which they buy on Americans, discounted in the United States. The absence, here, of a rediscount market, makes it practically impossible for them to do this, though the usually higher rates of discount prevailing in the United States might, in any case, disincline them to have such drafts sold on this side. There are, in practice, very few long bills drawn upon the United States, and such long bills as are drawn upon this country are usually held till maturity, for account of the foreign remitting banks, by their American correspondents.[1]

§ 4

How and Why the Bank Discount Rate Affects the Price of Demand Drafts and the Flow of Specie

Changes in the relative rates of interest in different countries affect, temporarily, rates of exchange and the flow of specie; though such changes in relative rates

[1] See Ch. III (of Part I), § 8.

of interest do not permanently affect the international distribution of specie, independently of comparative price levels. For example, much is said of the influence on the rate of exchange and on the flow of gold, of the Bank of England discount rate. If the Bank of England, because of too rapidly expanding loans or because of depletion of reserves, raises its rate of discount, being followed in this move by the other English banks, its doing so has a tendency to lower the rate of exchange in England on the United States and other countries, and to raise the rate in the United States and elsewhere on England. It has this effect because the increased interest in England tempts to investment there rather than in the United States. English banks are more likely to invest current funds at home, and may even draw on debtor banks in the United States and other countries. American and other banks may be tempted to make short term loans in England or to hold or have held until maturity, long bills which they would otherwise have immediately discounted. This holding of drafts until maturity will compel them to buy more drafts on England than otherwise would be necessary, in order to maintain their usual balances. The general result of a high discount rate in England is, therefore, a high rate of exchange on and a flow of gold to England.[1] Similarly, a sharp rise in the discount rate in New York would tend to produce elsewhere a high rate of exchange on New York, and would tend to cause a flow of gold to New York.

But we have seen that the flow of gold from country to country is determined by comparative prices of goods. If, because of a high discount rate in England, gold flows

[1] Goschen, *The Theory of the Foreign Exchanges*, third edition, pp. 129–140.

to England in large quantities, so that prices rise there and fall here; then England becomes a good place to sell to, and the United States (and other countries) by comparison a good place to buy from. The gold will therefore flow back for goods until prices are, relatively, what they were before. Americans, or American banks, who have invested in England because of the high rates of interest there, will have invested, in fact, not money but other capital.

But at this point a qualification must be made, based on the fact that the bank rate of discount influences, indirectly, the prices of goods. The bank discount rate influences prices by affecting credit. It was pointed out, in Chapter II (of Part I),[1] that the general level of prices in a modern industrial and commercial community or country is determined not alone by the quantity of money and its velocity of circulation and by the volume of trade, but also by the amount and velocity of bank credit. The relationship set forth was expressed in the equation,

$$MV + M'V' = pq + p'q' + \text{etc.}$$

Ordinarily, it was shown, M' maintains a fairly constant rather than a violently fluctuating ratio to M. The total amount of this M' or bank credit in a community will depend partly on the business needs and customs of that community, but partly, also, on the quantity of such credit which the banks can safely keep in circulation with a given support of cash reserves. If lack of confidence depletes these reserves, or if banks have expanded their credit too far for their reserves safely to support, contraction of this credit is necessary. The banks discourage borrowing, and so decrease the amount

[1] § 6.

of circulating bank credit by charging higher interest to borrowers, *i.e.* by raising their rates of discount.

Suppose, then, that because of a condition of business distrust and comparatively small reserves, the Bank of England and other English banks raise their rates of discount. As a consequence, there is a fall in the rate of exchange on New York, and, in New York, a rise in the rate on London. There follows a flow of gold to London and the bank reserves there are replenished. But this gold does not, at least for the time being, raise English prices and result in a corresponding flow of gold back to the United States (and other countries); for the increase of the bank charges on loans discourages borrowing from banks, and so tends to decrease M'. In the equation, $MV + M'V' = pq + p'q' +$ etc., for England, the p's may not be at all increased or may even be decreased.[1] Only when bank credit, in England, is again allowed to expand, will the full effect of the inflow of gold be felt in higher prices. So long as high discount rates keep the total of circulating bank credit in England less than before in relation to money, the inflow of gold does not so much raise prices as substitute itself for bank credit. Hence, gold will not flow out again, for goods.[2]

[1] Cf. Goschen, *The Theory of the Foreign Exchanges*, p. 129, where this idea, though not developed, seems to be implied.

[2] Just before the outbreak of the European war now (August, 1914) in progress, the efforts of European investors to dispose of securities for gold and the closing of the principal bourses of the world, caused a flood of sales on the New York stock exchange, large purchases of these securities by Americans, and an unusually strong tendency for gold to flow abroad. In view of the suddenness and violence of the movement, it was perhaps not unwise that the New York stock exchange should be temporarily closed (see *New York World*, August 1, 1914) and that the sale of securities here by foreigners should thus be made difficult. It is true that the flow of gold abroad (and we are not here concerned with any other reason for the closing of the exchange) is not ordinarily a proper cause for alarm, can be checked by a rise in bank discount rates if such a check is necessary, and will in any case, if long continued, give rise to a re-

§ 5

Effect of a Panic in One Country on Conditions in Other Countries

Since prices and interest rates in different countries are related, a panic in one country cannot usually be altogether without effect on other countries having close commercial relations with it,[1] though these other countries may not be affected acutely. When, for any reason, in a country of large commercial importance, business confidence gives place to acute distrust, and the banks, with reserves depleted or fearing that the reserves will be depleted, raise their discount rates, their action will affect discount rates in commercially related countries. The strain on the bank reserves of the first country, and the rise of the discount or interest rate, tends to draw gold from other countries.

This will tend to deplete the bank reserves of those countries in relation to circulating bank credit. Either the gold will come directly from these bank reserves as when it is drawn from the great central banks of Europe for export, or it will come indirectly but just as surely from bank reserves, as when gold is bought for export from a United States subtreasury and is paid for by lawful money which might otherwise be used as reserves.[2]

turn flow. Yet so unprecedented a movement as the recent one here under discussion, might conceivably, if met only by a rise in the discount rate (which would also have to be great and sudden), dangerously and, considering the probable temporary nature of the crisis, unnecessarily disturb credit conditions.

[1] Cf. Fisher, *The Purchasing Power of Money*, New York (Macmillan), 1911, p. 267.

[2] Even if the gold is purchased with bank credit, the reserves become smaller in *proportion* as compared with the total amount of such credit; and they tend (since, as we have seen — Ch. II, § 5 — business men keep some relation between their bank accounts and cash assets, and will draw out cash if the latter become relatively too small) to become absolutely smaller.

The conclusion is that in any case the banks in those countries from which the gold is drawn, will also have occasion to raise, somewhat, their discount rates, in order to keep their reserves and their deposits (and notes) in proper relation to each other. And if contraction of credit causes a fall of prices in one country, the mitigated effect of this, at least, must spread to other countries. It does not follow that a severe panic in one country must be accompanied by or succeeded by a correspondingly severe panic in others; but only that in each of a group of commercially related countries there will be practically simultaneous rises in price levels, nearly simultaneous high prices and high discount (interest) rates, and substantially simultaneous decline. The goodness of its banking system (and other facts), may make the changes more gradual and less severe in one country than in others, but is not likely to prevent the changes altogether.

§ 6

Exchange between Two Countries when One has a Gold and the Other a Silver Standard

An excess production of gold in any country raises prices there compared to prices in other countries, encourages buying goods in other countries, and therefore raises the rate of exchange on other countries. Export of gold follows. The introduction of a cheaper standard of value has the same effect. A large coinage of cheaper money, *e.g.* silver at a ratio of 16 to 1 (which would greatly overvalue silver and lead to a large coinage), would increase M. Prices would rise and the value of money would fall. Goods would therefore be purchased abroad. The rate of exchange on foreign coun-

tries would rise and gold would be exported. As long as the silver and gold both circulated and were generally acceptable for goods at the legal ratio, the rate of exchange would not rise much above the gold export point. But if this ratio encouraged the continued coinage of silver, the gold would eventually be entirely driven out of the currency of the silver coining country. Then the rate of exchange would rise even higher, for prices in the silver country would continue to rise until silver coin had no greater value than silver bullion. But once the gold had been entirely driven out, there could be no further effect on the amount of money and therefore on prices, in other countries,[1] produced by the coinage of silver. Consequently, the prices of the silver country would be permanently higher than formerly, compared to prices abroad, and its money standard of less value. Instead of the rate of exchange on England, supposing the United States to be the silver standard country, averaging $\$486.65 = £100$, it might average $\$973.30 = £100$, or some other new and higher rate. The rate of exchange would have risen tremendously. In fact, such a rise in the rate of exchange is good evidence of a cheaper or depreciated currency. But the rate of exchange, though in figures much higher than before, would not necessarily be above par. Instead, there would be a new par. $\$973.30 = £100$ might have become this par. Exchange would thereafter fluctuate about this new instead of about the old and lower par.

Par of exchange would no longer be steady. For with one country on a silver standard and the other on a gold standard, the monetary unit of one, *e.g.* the dollar, would have no fixed relation to the monetary unit of the other,

[1] See, however, remainder of this section (6).

e.g. the pound. The value ratio of these units would vary with the value ratio in the bullion markets, of silver and gold. But exchange in neither country, on the other, could go above par by much more than the cost of shipping specie. Exchange in the silver standard country on the gold standard country, would be limited by the cost of gold in terms of silver, plus the cost of shipment.[1] *Vice versa*, exchange in the gold country on the silver country, could not go higher than the cost of silver in terms of gold, plus the cost of shipment.

How would trade balance when there was no longer, between two such trading countries, the influence of price relations in the same precious metal, to make the flow of goods one way balance a return flow? The balance might then be brought about by the flow of gold one way, and of silver the other. If we should for a time buy more in England than the English of us, and had a net indebtedness to meet, we might purchase gold in the bullion market here, with which to settle. This (assuming the United States to be on a silver standard) would not directly affect our prices, but would increase the quantity of money and tend to raise prices in England. In this country it would tend to make gold bullion scarce and dear as compared with our silver money and with other goods. A given amount of English money would buy more American dollars than before, and would buy more American goods than before, as compared with the goods it would buy in England. That is, par of exchange in England on the United States would be lower. There would also, of course, be some tendency for prices in one country to fall and in the other to rise because of the flow

[1] Goschen, *The Theory of the Foreign Exchanges*, pp. 76–81; cf. Clare, *The A.B.C. of the Foreign Exchanges*, London (Macmillan), 1893, pp. 139–142.

of goods as well as because of the flow of money. The greater supply of goods in the importing country, the United States, in relation to money, would tend to lower the price level; while the outflow of goods from the exporting country, England, would tend, there, to raise the price level.

The fact that a given amount of English money would buy more American goods than before, would encourage English buying here; while the less purchasing power over English goods, of American money, would discourage American buying in England.[1] Hence trade would reach equilibrium or would flow, for a time, in the opposite direction.[2] Exchange in England on the United States would rise above par, and specie would be shipped.

If exchange on England should be below par and the flow of specie should be from them to us, the same principle would apply. The silver sent to us in settlement of balances would tend to raise our prices and lower the value of silver in the United States. Its exportation from England would tend to make silver in England relatively scarce and dear. As a consequence, a given number of American dollars would buy more pounds than before and would buy more goods in England than

[1] Cf. Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, pp. 59, 60. See also Professor Marshall's "memorandum" on the effect in international trade of different currencies, Appendix to *Final Report of the Gold and Silver Commission*, 1888, pp. 47–53.

[2] If we suppose American silver exported to buy English gold for settling the balance against us, because of a more favorable price of gold in England compared to silver, we shall nevertheless reach the same final conclusion. On this supposition, the outflow of silver would tend to lower American prices, raising here the value of silver. In England, silver would become of less value in comparison with gold. A given sum of English money would buy more American money, and would buy more American goods than before as compared with the goods it would buy in England. Therefore, the flow of trade must reach equilibrium or even be temporarily reversed.

before as compared to what they would buy here. The surplus flow of goods from the United States to England would, other things equal, be brought to an end. If, therefore, two trading countries have, respectively, a silver and a gold standard, the laws of trade between them are not greatly different than if both have the same standard. It is still true that each will buy goods of the other; and it is still true that an excess flow of trade in one direction tends so to change monetary and price conditions as to bring its own termination.

§ 7

Exchange between Two Countries when One has a Gold and the Other an Inconvertible Paper Standard

Let us now suppose the case of a paper standard, *i.e.* paper money not redeemable in specie, in one of two trading countries, and a gold standard in the other, as with the United States and England during our Civil War period. The rate of exchange in the paper money country on the other, would depend chiefly on the cost of gold in terms of paper, and therefore would rise as the paper money depreciated in relation to gold.[1] Thus, during the Civil War, exchange in the United States on other countries, *e.g.* England, rose to a very high figure, because of the depreciation of the greenbacks. Conversely, the rate of exchange in the gold standard country on the country with a paper standard would depend mainly on the cost of this paper money in terms of gold, and therefore would fall as the paper money depreciated.[2] In the paper money country, the upper limit of exchange on the other cannot much exceed the cost of purchasing

[1] Goschen, *The Theory of the Foreign Exchanges*, pp. 69, 70. [2] *Ibid.*

gold with paper, plus the cost of shipping the gold.[1] If we regard exchange between two such countries as at par (though the paper *money* might be depreciated far below par) when the money of the paper standard country will buy just as much exchange on the gold standard country as it will buy gold at home,[2] then we may say that exchange could rise above par by the cost of shipping specie.[3] In general, we may say that exchange might either rise above or fall below this par, by the cost of specie shipment, just as it might rise above or fall below par by the cost of specie shipment if both countries had the same specie as standard.

When one of two countries has inconvertible paper and

[1] *Ibid.*

[2] This is the logical though not the ordinary use of the word "par" in relation to exchange, when one country has a depreciated currency. It is customary to regard as par what would be par if there were no depreciation. Strictly speaking, however, the departure from this rate, due to depreciation, means a departure of the *money* from par, rather than of *exchange*.

[3] This is not inconsistent with Bastable's statement (*Theory of International Trade*, pp. 87, 88) regarding the possible rise of the exchanges on other countries, in a country having an inconvertible but not depreciated paper money. In such a case, it is said, if a sudden demand for exchange and, consequently, for gold to export, is coincident, in the paper money country, with a temporarily inadequate supply of gold, exchange may rise above the usual specie shipping point. But though the rate may go up beyond the usual shipping point, it can hardly be said to do so if the paper money is in no sense depreciated. Though the paper money may not have depreciated in relation to goods in general, and may not have depreciated, permanently, in relation to gold, yet, for the time being, it has depreciated compared to gold in the paper standard country. Under such circumstances, however, it may fairly be emphasized that the rise of exchange is due rather to a local rise in the value of gold than to a fall in that of the paper.

A special case discussed by Goschen (*The Theory of the Foreign Exchanges*, pp. 70–72), is that of a country which, having an inconvertible paper money, has also forbidden the export of the precious metals. In such a country, exchange on others cannot be prevented, by shipment of specie, from rising above the gold shipping point, since the law forbids such shipment. Except as the law may be evaded, a rising exchange rate can then only be limited by a retardation of imports and a stimulation of exports (see § 9 of this chapter) or, for a time, by borrowing from abroad (see Goschen, *Foreign Exchanges, loc. cit.*).

the other a gold standard, the effect on prices, produced by the flow of specie consequent on trade between them, could occur only in the gold standard country. When the paper standard country has a balance to pay, gold may be purchased with this paper money and exported (or, which for purposes of our discussion amounts to the same thing, imported by the gold standard country). This will raise prices in the gold standard country to which the gold flows. If the trade, however, is between a paper standard country and several gold standard countries, the effect on the latter will be more diffused and their prices raised but slightly. But the outflow of gold bullion from the paper standard country will tend, if long continued, to make gold in that country scarce and dear in relation to other desired goods. A given amount of gold will buy not only more paper money, but also more of other goods than before. Drafts drawn on the gold standard country, or remitted by its people, in payment for goods purchased in the paper standard country, will represent less gold than previously for the same goods bought. Therefore, more goods will be purchased in the paper standard country by the people of the other, and gold will flow back again to the former country. This tendency is accentuated by the flow of goods. If, at first, goods are imported by the paper standard country, the larger supply of goods in that country, relative to the paper money *and to gold*, tends to make the prices of these goods lower in either standard. In the exporting country, relative scarcity of goods tends to make prices somewhat higher measured in gold. Hence, for this reason also, more goods are bought with gold in the paper standard country, and gold tends to flow to that country.

§ 8

Exchange between Two Countries when Both have Inconvertible Paper Standards

Suppose, next, that there is in each of two trading countries an inconvertible paper standard. Then the rate of exchange in either upon the other, so long as gold is the medium for settling international balances, will depend on the value of both currencies in relation to gold. Suppose the two countries to be the United States and France. Then, in the United States, exchange on France would rise if American money depreciated compared to gold (French money remaining the same), or if French money appreciated in relation to gold (American money remaining the same), or if, simultaneously, American money depreciated and French money appreciated. The same causes would make exchange in France on the United States fall. The rise in exchange on France and the fall in exchange on the United States would be limited by the depreciation of the American money plus the appreciation of the French money, plus the cost of specie shipment. For if American money depreciated one-half compared to gold, exchange on France (excluding the cost of gold shipment) would double, since it would take twice as many American dollars to buy the same amount of gold for shipment to France, and, therefore, to buy the gold equivalent of a certain number of francs. Likewise, if French money doubled in value in relation to gold, exchange on France would double, since it would take twice as many dollars as before to buy the double amount of gold which was now the equivalent of a given number of the doubled value francs. Above this amount, exchange could rise by the cost of shipping gold.

Under the assumed circumstances, the currencies of the two countries would be unrelated to each other. No amount of buying by the merchants of the United States, in France could, through a flow of money, lower American or raise French prices, for American money would not be legal tender in France or (being paper) of any intrinsic value there. Neither could French buying in the United States produce, by the flow of money, the reverse consequence. How, then, would excess buying by one country in the other eventually cause more buying by the second in the first? It would have this effect through the flow of gold and the consequent influence on the value of gold in the two countries; and also through the flow of goods and the effect of that flow on prices in the two countries and so on the relative values of gold, in both countries, in relation to goods.

If the United States should buy more of France in any period than it sold to France, gold would flow to France. Gold would therefore come to have more value in the United States, where it was scarce, and less value in France, than before. A given number of francs would buy more gold, and a given amount of gold would buy more dollars. Par of exchange, in the sense here used, would be lower in France on the United States, and higher in the United States on France. This means that in terms of French money, goods could be purchased in the United States more cheaply than before; while in terms of American money, French goods would be more expensive than before. As a consequence, the French would buy more American goods, and Americans would buy less French goods; the rate of exchange in France on the United States would rise above this low par, and in the United States on France it would fall; and gold would flow back from France to the United States.

In addition, if the United States should buy a net balance of goods from France, in any period, this would tend to make goods more plentiful in the United States and less so in France, in relation to gold, so that, for this reason also, it would become more profitable than before to send gold from France to the United States for goods.

§ 9

Exchange between Two Countries, Assuming Effective Prohibition of Specie Shipment

So far we have assumed, even when discussing trade between countries having unrelated currencies, that gold or silver would be used to settle international balances. But suppose that the mediæval theory of prohibiting the export of specie were still in vogue and were commonly applied. Would there be, then, any limits to the fluctuations of exchange (assuming obligations still to be settled by using drafts), and would there still be a tendency for the trade in opposite directions, to balance? Under usual existing conditions, the fluctuations of exchange with any country are limited, as we have seen, by the cost of shipping specie. Any further rise or fall is checked by specie shipment and by the consequent effect on supply of drafts, or demand for them, or both. But if specie shipment were prohibited, and prohibited at all effectively, the limits to exchange fluctuations could not be so narrow. The rate of exchange, for example, in the United States on England, if the balance of obligations were markedly in England's favor, could then go considerably above $488.65 without at once increasing the supply of or decreasing the demand for drafts on England, to such an extent as to stop the rise. Since

gold could not be exported, Americans owing money in England would have to settle by remitting drafts or by redeeming drafts drawn against them.[1] In the latter case, American banks must purchase drafts on England in order to settle with correspondents, since the alternative of shipping specie is excluded. Drafts on England might, therefore, sell at a rate which American debtors and debtor banks would refuse to pay if they had the forbidden alternative.

Yet there would still be limits, though wider and perhaps less definite ones, to the fluctuations in the price of drafts. The high price of drafts on England would encourage and stimulate the sale of American goods in England and would discourage buying goods from England. Goods which would bring, in England, say £100, but which would not ordinarily be sent there for sale, because that sum yielded no profit, might be exported if a draft on England for £100 would sell, here, for $495. And the sale of goods in England, thus stimulated, would tend, by increasing the supply of drafts on England, to prevent further rise in the prices of such drafts. Also, goods which could be purchased in England for £100 and which, if $486.65 would buy a draft for £100 and so would pay for the goods, would be bought in England, very probably would not be bought if the draft necessary to pay for them cost $495.

Conversely, even though exchange on England fell below the gold shipping point, because of a net balance owing from England to us, combined with an English prohibition on the outflow of gold from England, such a fall in exchange would not be without limit. For it

[1] Renewal of credit, use of finance bills, etc., would of course serve as temporary expedients to postpone settlement.

would encourage buying in and discourage selling to England. Goods which could be sold in England for £100 and which it would ordinarily pay to ship there, it might not be profitable to ship if a draft on London for £100 would only realize, in New York, $460 or less. The consequent refusal to ship goods to England would tend to decrease the supply of drafts on England and to prevent further fall in their prices. At the same time, it might become more profitable for us to buy goods in England, paying for these goods by purchasing and mailing the low-priced London drafts and so adding to the demand for such drafts.

During the summer and fall of this year (1915) drafts on the principal European belligerent countries have been selling at rates far below the ordinary, gold-shipping points. Sight drafts on London, for instance, have sold at 4.70, at 4.60, even at 4.50, and corresponding discounts have ruled with respect to other European centers. It would seem that these discounts cannot be sufficiently explained by citing the war risk of gold shipment, since war risk insurance is but 1 per cent in British bottoms and in American vessels is even less. This risk, in addition to the ordinary cost and risk of shipment, might account for a rate on London as low as 4.80 or 4.79, but hardly for a rate much lower. There seems no escape from the conclusion that interference with gold exports from the countries at war is an important factor in the problem. Such interference there has been and is.[1] For example, France has forbidden

[1] The more important commercial countries engaged in the present war, *e.g.* Great Britain, France, and Germany, would appear thus far (October, 1915) to have been successful in preventing depreciation of their paper money, in the commonly understood sense of depreciation in relation to gold. The success which they have had in this direction is probably due, in considerable measure,

any person other than the Bank of France to export gold, and the Bank of France is controlled by the government, which appoints its manager. Great Britain has not formally prohibited the export of gold; but probably no English bank would venture, under existing circumstances, to export gold without the approval of the Bank of England, and the Bank of England will arrange for the export of so much gold only as its officials and the government think may wisely be parted with. Hence the ordinary free flow of gold has ceased, price levels in America and in Europe are not closely related through such a flow, and exchange rates can fall, and have fallen, far below par. To such an extent has this occurred that we should perhaps soon cease to find it profitable to sell food supplies, munitions, etc., to the Entente Allies, had they not arranged to correct matters, in part, by borrowing of us heavily through the sale of their bonds in the United States.

When balances are habitually settled by the shipment of gold (or other precious metals), as in modern trade, the limits of fluctuation in exchange are narrow because gold, having large value in small bulk, can be shipped for a small per cent of its value. An excess of trade in one direction, therefore, acts largely through a flow of gold as an intermediate cause, in bringing about a balancing flow of trade in the contrary direction. This flow of gold affects prices in both countries, if both have the gold standard. In any case, it affects the relative

to the fact that they will not allow gold to be exported. They have thus narrowed the market for gold and have, in effect, cheapened it along with the paper. Hence, the paper money may not appear to be depreciated even though, in the sense of its purchasing power over goods, it is so. It is not denied, of course, that, under all the circumstances, a belligerent government may find it desirable to husband its stock of gold and avoid, if possible, any depreciation of the sort usually meant by the term.

purchasing power of gold in these countries, and the amount of goods that the currency of the one, by being first exchanged for gold, will buy in the other, compared to what it will buy at home. There follows, as a result of this change in relative prices or in relative values of the two money standards, a change in the flow of trade. This change in the flow of trade is, therefore, in large part, but an indirect consequence, through the flow of gold, of a rising or falling rate of exchange. But if the flow of specie is effectively prohibited, and the fluctuations in exchange are, in consequence, greater (assuming drafts to be still used as the chief means of settling obligations between countries), the high and low prices of drafts will act with greater force *directly* on the flow of trade.

It should be emphasized that high and low exchange have always, to some extent, this direct influence. If a draft on England for £100 will sell for $488 in New York, it may be profitable to export goods to England which it would not pay to export if exchange were low. Similarly, if drafts on England for £100 can be secured for $484.70, it may be worth while to buy goods there which, if exchange were higher, would not be purchased. A flow of trade in one direction has always, then, some slight tendency to bring about its own termination through affecting the rate of exchange, and thereby the direction of trade.[1] But this more direct influence is greater, because the possible fluctuations in exchange are greater, if and when specie cannot be exported from either of two trading countries. Our conclusion is that whatever the relation of the currencies of two trading countries, and whatever the mechanism of settling balances, or whatever the restrictions on settlement by the use of any

[1] Cf. Ch. V. (of Part I), § 6.

special commodity, *e.g.* gold, an excess flow of trade in one direction introduces always a tendency towards an opposite and balancing flow.

§ 10

The Effect on the Rate of Exchange of High Import and Export Duties

Let us now give very brief consideration to the effects on exchange of high import duties, *e.g.* the so-called protective tariff. The protective tariff is a high tax on imports, intentionally made so high as to prevent or decrease imports, and encourage buying at home. For the time being, the country adopting such a policy will export an excess, the rate of exchange on other countries will be low, and specie will flow in. Then prices rise in the protectionist country in relation to prices elsewhere, exports are checked, and an equilibrium is reached; and, in the absence of other disturbing causes, exchange will again average par.

On the other hand, the first effect of a high tariff on exports would be to decrease exports. For a while imports would be in excess. Therefore, the rate of exchange would rise. Eventually specie would flow out, prices would fall, imports and exports would again balance (other disturbing factors absent), and there would no longer be the tendency caused by excess imports for the fall of prices to continue.

§ 11

Summary

In this chapter the attempt has been made to bring together various considerations regarding exchange,

which seemed to have no proper place in the chapters preceding. To begin with, a distinction was made between sight drafts and those payable some time after sight. A study of the pure rate of exchange has to do only with the former. The prices of the latter depend also upon the rate of interest. Two possible methods of procedure when an American bank invests, for the interest, in drafts on foreigners, were described. It was shown that the prices of long drafts may be influenced by the rate of interest in the drawing and in the accepting country. If the rate of interest in the accepting country is the lower, this rate determines the prices of long drafts; but if the rate of interest in the drawing country is the lower, purchase of the drafts by investors or investing banks in that country may make these drafts sell for somewhat more than the higher rate of interest in the accepting country would otherwise allow.

Consideration was given to the influence, on the pure rate of exchange and on the flow of specie, of changes in interest or discount rates in different countries. It was seen that a rise of the bank discount rate in any country tends to create, elsewhere, high rates of exchange on that country and a flow of specie to it. But it was also seen that the chief effect of such a rise in bank discount is to check undue credit expansion or reduce excessive credit. Only as it has this effect, will the inflow of specie be prevented from so raising prices as to result in a subsequent corresponding outflow. Since interest rates and prices in different countries are related, it follows that a financial panic in one country must produce some, though perhaps comparatively mild, effects upon other countries.

The rates of exchange between countries having different monetary standards were next considered. If

one country has gold and another silver, exchange can fluctuate as the ratio of value of silver to gold fluctuates, and, in addition, by the cost of specie shipment. If one country has gold and the other has inconvertible paper, exchange in the latter on the former can rise (and in the former on the latter, fall) by the amount of depreciation of the paper in terms of gold, plus the cost of gold shipment. If both countries have inconvertible paper, exchange in either on the other can rise by the amount of depreciation in the currency of the first plus the amount of appreciation in that of the second, plus the cost of specie shipment. Whatever the monetary standard or standards of trading countries, exchange can fluctuate beyond the above assigned limits, if the movement of specie is effectively prohibited. But whatever the standard or standards, it appeared that trade cannot flow continuously in one direction without introducing a tendency to a reverse flow. By acting on relative price levels, or on relative values of currency in relation to gold, or only on rates of exchange, the surplus flow in one direction will eventually bring itself to an end.

Lastly, brief attention was given to the effects on exchange, of import and export duties. The former make exchange on other countries temporarily lower. The latter make it temporarily higher. In the former case, equilibrium is reached, after an inflow of specie, with a higher level of prices in the country levying the duties. In the latter case, when, after an outflow of specie, equilibrium is again reached, the level of prices in the duty-levying country is lower.

PART II

THE ECONOMIC ADVANTAGES OF COMMERCE

CHAPTER I

PRICES, INTERCOMMUNITY TRADE, AND THE GAINS OF TRADE

§ 1

The Relation of Prices in One Country to Prices in Another

THROUGH the influence of trade, the price in any country of any special kind of goods tends toward equality with the price of the same goods in other countries with which the first one trades. Cost of carriage, of course, must enter into the selling price of any kind of goods. Due to the natural productivity of land, greater efficiency of labor, better capital equipment, or other cause, some goods will probably be produced with less relative cost in one country than in the others trading with it. These goods will tend to be cheaper in the country having such an advantage, and to be sold by it to the others. The price of such goods in the other countries cannot, for any length of time, be higher than in the exporting country by much more than the expense of transportation or, if trade is restricted, the expense of transportation plus tariff charges; for if the price is much higher, none of the goods in question will be sold in the country where they are produced, until enough has been sent abroad to more nearly equalize prices. Neither can the price abroad of goods produced under competitive conditions, be less than the price in the producing country

plus cost of transportation and tariffs, if any of the goods at all are sent abroad.[1]

To illustrate, suppose a certain kind of cloth to be selling at wholesale in England for (the equivalent in English money of) $1 per yard. Assuming a transportation and tariff expense of 50 cents a yard, it would sell in Canada, wholesale, for $1.50. Suppose, next, that the Canadian demand raised the Canadian price to $1.75 per yard. If the carrying and tariff costs remained at 50 cents, and the Canadian price $1.75, obviously no one would sell the cloth in England for much less than $1.25. If, on the other hand, the Canadian demand should decrease so that the cloth could not be sold in Canada for more than $1.25, then none of this cloth would be sent from England to Canada unless the English price fell to $0.75. If, because the whole supply had to be sold in England, the price should fall to $0.75 per yard, a surplus might be exported. Otherwise, it would pay better to sell all the cloth in England.

It will be seen that the general level of prices in one country is not by any means necessarily the same as the price level in the other countries with which it trades. If we imagine two countries side by side, with no tariff barriers between them, and with a zero cost of transportation from any part of one to any section of the other, we may say that the price of each commodity in one country must equal, measured in the same standard of value, its price in the other. Obviously, if all prices

[1] Except as goods may be sold cheaper abroad temporarily in order to develop new business, and for other special reasons of very limited application. A tariff protected monopoly will purposely limit its sales at home in order to realize monopoly profits, while selling abroad, where competition must be met, at competitive prices.

are exactly the same, then the general average, the level of prices, must be exactly the same in one country as in the other. In comparing the price levels of two countries, we may take as a unit that amount of each kind of goods, in one of the countries, which sells for $1 (or £1 or some other standard monetary unit). The average price in that country will be $1. We may then learn the price in the other country, of each such unit amount of goods, and take the average of these prices. This gives us the general level of prices in the second country as compared with that of the first.[1] The most satisfactory average is, of course, a weighted one, *i.e.* an average in which each kind of goods is given an importance consistent with the proportionate value of it sold. By the method of averaging here described, it is obvious that, given costless transfer of all goods and services, the average price or price level in the one country would equal the average in the other; for all prices would be exactly the same in each, and an average, weighted or unweighted, must be the same.

As it is, however, the goods which are the special product of each country tend to be lower in that country, and to be higher in other countries, by an amount equal to the cost of transportation and other obstacles in the way of trade. This makes it unlikely that the average of prices in one country will be the same as the average in another country. Thus, wheat may be lower in price in Canada than in England by the cost of transportation. At the same time, cotton cloth may be lower in price in England by the cost of transportation. There

[1] Cf. Fisher's suggestion for comparing the price levels in the same country for two or more years, *Elementary Principles of Economics*, New York (Macmillan), 1912, p. 250.

is no logical reason for assuming that the average of prices (the level of prices) is the same. The lower priced wheat, in Canada, may conceivably have so great an importance as to make the weighted average of prices lower there, despite the higher relative price of cotton cloth. Or cotton cloth, cutlery, shoes, and machinery, all lower in England, may make average prices lower there even though wheat is lower in Canada. Or again, though many articles may be lower in price in England, yet these may be for the most part such things as houses, practically non-transportable, or goods transportable only at such great expense as generally not to be transported. A few things may be lower in Canada by enough to pay for shipment to England. Under these circumstances, average prices will certainly be lower in England although trade may be in perfect equilibrium. A dollar (or its mint equivalent in English money) will buy more in England, yet Canadian money will not flow to England for goods transportable at great expense, in any larger quantity than English money will flow to Canada for a few goods only slightly cheaper in Canada but easily transported. Wheat may be enough lower in Canada to pay for export, and cotton cloth enough lower in England. Everything else may be lower in England, yet not enough lower for shipment to Canada. If this is the situation, the general level of prices in England must be, and must remain, lower than in Canada.

But though the price levels of England and Canada are not, on these hypotheses, the same, they are nevertheless related. The level of prices in England may be continuously lower, but will be lower only to a certain extent. A rise of Canadian prices (the result of gold

discoveries, expansion of bank credit, inflow of gold from the United States, or other cause) will increase the importations by Canada from England, despite transportation and other obstacles, and will tend to raise English prices also, thus leaving the relation between Canadian and English prices substantially as before. Similarly a rise in English prices will affect prices in Canada; and a fall of prices in either country will affect prices in the other.

§ 2

What Prices Tend to be Lower in a Given Country, than Prices of the Same Kinds of Goods in Another Country

It is apparent that prices of all goods are not likely to be lower in one country than in another if transportation and tariff conditions are such as to make any appreciable trade profitable. For unless the cost of transportation, plus other obstacles, is very great, the low prices in the one country will cause flow of gold in that direction. This will continue until the price of some good or goods becomes lower in the previously high price country than in the other.[1] The condition of equilibrium will be realized at a point such that some prices are lower in the one country and some lower in the other. This may be called a moving equilibrium, or an equilibrium such that, other things equal,[2] about the same value of trade would flow in each direction.

[1] This principle is expressed with great clearness in Taussig's *Principles of Economics*, New York (Macmillan), 1911, Vol. I, pp. 486, 487.

[2] A gold mining country may export a surplus of gold and import a surplus of other things, but exports and imports as a whole, none the less, tend to be equal. A country which has large investments abroad will usually import more than it exports of goods in general. See Part I, Ch. V, § 7.

The conclusion that some prices will be lower in one country and some prices in others, is true in principle even if the countries trading have different monetary standards, *e.g.* if one country has a gold and the other a paper standard. We saw, in the last chapter, that whatever the relation or the non-relation of the monetary standards of two countries, trade might take place between them; and that the flow of this trade in one direction would tend, in the long run, to equal the flow in the other.[1] Any tendency to an excess flow in one direction would be self-terminating. When the position of equilibrium was established, some prices would be the lower in each country in the sense that the money of either country would, through the process of gold shipment or through the mechanism of the exchanges, buy more of some goods in the other country than at home.

What conditions determine which prices shall be lower in one country than in another or others? The answer is: those goods are lower in price in any country, for the production of which it has relatively great advantages. These advantages may lie in geographical position, may depend upon soil and climate or the possession of certain mines or other natural resources, or may, in certain lines of activity, depend upon high acquired efficiency of labor. Those goods in the production of which a country has a relative advantage and which, therefore, it sells at a low money price, will, of course, assuming trade to be free, be the things it exports. The people of other countries will avail themselves of the opportunity to buy these goods cheaply. The advantages for producing them will mean a large amount of labor and capital specializing in their production in the

[1] See Part I, Ch. VI, §§ 6, 7, 8, 9.

exporting country. Since the low prices at which these goods are sold result from the relative advantages in that country for their production, therefore these low prices do not signify that the industries are unprofitable. So much can be produced with a given amount of labor that, even at low prices, the yield to industry is high.

Similarly, the existence of a high level of money wages in any country, does not mean that in such a country some goods cannot be produced, and exported, at low money cost. The United States may have money wages twice as high, per day, as England. Yet if the American agricultural laborer can produce over twice as much wheat per day, because of the extent of good agricultural land, as can be produced in England with the same labor, then the money cost of the American wheat will be no greater and may be appreciably less per bushel. In selling his wheat in the foreign market, the farmer is not primarily concerned with the matter of how much he has to pay his men by the day. He is greatly concerned with the matter of what he must pay them per bushel produced. It is obvious, therefore, that a productive country can have at the same time low prices of goods which it exports, and high wages to the producers of those goods.

Neither is it essential, in order for a country to export certain goods at a low price, that it should be able to produce those goods more efficiently, *i.e.* with less labor expenditure, than other countries. All that is necessary is that for the production of such goods, its disadvantages shall be less than for the production of other goods. The converse of this proposition is that all goods will not necessarily be produced at the lowest price, in the country where they can be produced with

least labor. Even if the United States can produce woolen cloth with less labor expenditure than England, the advantage of the United States in the production of steam and electric engines and other machinery, may be still greater. If a given amount of labor in the United States will produce 10 per cent more woolen cloth or 100 per cent more engines and machinery than in England, then the United States gains more by producing the engines and machinery and importing the cloth. The price at which producers in the United States could afford to sell machinery, etc., would therefore be comparatively low, while it would require a relatively high price of woolen cloth to induce Americans to manufacture it. On our assumption, American labor and capital can secure more money, in the English market, for the product of a day's labor in making machinery than for the product of a day's labor in a cloth factory, and still undersell English machine makers. On the other hand, English labor and capital can get more money by selling, in the United States, the product of a day's labor in the cloth factory, than for the product of a day's labor in an English machine making factory, and yet undersell American cloth. If the United States is absolutely more productive in both lines, as well as in most or all others, it might be better, economically, for the people of England to migrate to the United States. But so long as they choose to remain in England, they will be better off if they specialize in the production of cloth.

It appears, therefore, that under conditions of entire free trade, there would be a high degree of geographical specialization; and that each industry would be located where the facilities for it were *relatively* the best, all things, including transportation cost, considered. In

fact, of course, the location of industries is considerably affected by tariffs. The higher, and the greater in number, are these trade restrictions, the more largely is industry turned from its natural channels. If there were a sufficiently high tariff around the borders of Maine, cotton could perhaps be raised in Maine hothouses. Similarly, a high tariff levied by South Carolina on steel rails brought in across its boundaries, might encourage the manufacture of steel rails for use within the state, in the midst of the South Carolina rice fields, with iron brought from the Lake Superior ore regions and coal imported from Pennsylvania.

§ 3

Trade between Two Communities when Each has an Absolute Advantage over the Other, in One or More Lines of Production

Let us now illustrate how the case stands as to prices and gains from trade when two communities engage in trade, each having an absolute advantage in one line of activity over the other. We shall suppose the trade to be between two of the states of our own country, South Dakota and Indiana. South Dakota we shall take as an example of a wheat-producing section and Indiana as an example of a corn-producing section. Suppose that one day's labor in South Dakota, of one man, produces 2 bushels of wheat *or* 1 bushel of corn, while in Indiana the same amount of labor produces 1 bushel of wheat *or* 2 bushels of corn. Assume, also, no cost of transportation and no tariff interferences with trade. If wheat sells in South Dakota for $1 per bushel, then a day's labor in the wheat fields will yield $2. No

one, therefore, will be satisfied to produce corn in South Dakota for less than $2 a day. But since only 1 bushel of corn can be produced, $2 reward will necessitate a price of $2 a bushel. Whatever the price of wheat, corn must sell, if produced in South Dakota, at double that price per bushel; and therefore, if we assume $1 per bushel for wheat, corn must sell at $2. No one in South Dakota will produce it for appreciably less. If it can be imported for less, it will be.

With Indiana the case is reversed. Corn, by our assumption, is produced there the more easily. If the corn can be sold for $1 a bushel, it will give producers $2 a day. Naturally they will not care to produce wheat for a less return, and therefore, if Indiana is less adapted to wheat production, they must get a higher price ($2 a bushel) in order to encourage its production in Indiana.

Both states gain by the trade. South Dakota can produce in two days' labor, 2 bushels of wheat at, say, $1 per bushel and 1 bushel of corn at $2 a bushel, a total of 3 bushels or $4 worth. Indiana can produce in two days of labor, 1 bushel of wheat at $2 and 2 bushels of corn at $1 a bushel, making a total of 3 bushels or $4 worth. If they trade, each state can specialize. South Dakota can produce in two days of labor, 4 bushels of wheat at $1 per bushel, or $4 worth; while Indiana can produce with two days of labor available, 4 bushels of corn at $1 each or $4 worth. Trade between the two states will make it possible (assuming an even exchange) for each state to get, from its two days of labor, 2 bushels of corn *and* 2 bushels of wheat, instead of 2 of one cereal and 1 of the other. There will be no gain in money values. In either case the total is $4 worth for each state. But there will be a considerable differ-

ence in what the money will buy. In the case we have assumed, money incomes will be the same with the trade as without it,[1] but the money "cost of living" will be appreciably reduced; $4 will buy a total of 4 bushels instead of only 3.

It is clear that, under our assumed conditions, Dakota wheat and Indiana corn could and would be sold the more cheaply; that, therefore, the people of Indiana would naturally buy Dakota wheat at a lower price (*e.g.* $1) rather than Indiana wheat at a higher (*e.g.* $2), while the people of South Dakota would choose to buy corn from Indiana; also that this arrangement, so obviously to the individual interests of the persons concerned, would make both states the richest. Is it necessary to point out that what is true as regards two states, territories, or sections under the same general government, is also true of two different nations? If Indiana and South Dakota gain by such a trade when united as parts of one nation by the government at Washington, it is reasonable to suppose that they would gain in just the same way and to the same extent if each were a separate nation. And in an exactly analogous way, the United States gains by trade with Canada.

§ 4

Trade between Two Communities or Countries when One is More Productive than the Other in Several or in All Lines, but has a Greater Advantage in One Line or in a Few Lines than in the Rest.

Let us next illustrate the relations of money prices, and the gains from trade, when one country or community

[1] See, however, Ch. IV (of Part II), § 2.

has an advantage over another in several or in all lines, but a greater advantage in one than in the others. Assume that in Canada one man's labor for a week will produce 20 bushels of wheat or 14 yards of linen cloth, while in Ireland, a week's labor of one man will produce 6 bushels of wheat or 10 yards of cloth. Ireland is at a disadvantage in both lines, but her disadvantage is less in linen manufacture, and Canada's advantage is greater in wheat production. Both gain if Ireland produces linen and Canada produces wheat and they trade. Without trade, two weeks of labor in Canada, equally divided, would produce 20 bushels of wheat *and* 14 yards of linen. In Ireland, two weeks of labor would produce 6 bushels of wheat *and* 10 yards of linen. Similarly, four weeks of labor in Ireland would produce 12 bushels of wheat *and* 20 yards of linen. Suppose, now, that they trade, and that a bushel of Canadian wheat buys a yard of Irish linen. Then Canada can produce, in two weeks, 40 bushels of wheat, and, by trading half of it for linen, have 20 bushels plus 20 yards, instead of 20 plus 14. Ireland can produce in two weeks 20 yards of linen, or in four weeks, 40 yards. By trading half of this linen for wheat, Ireland will have 20 yards plus 20 bushels instead of 20 plus 12, as a reward for four weeks' work. On our present hypothesis, Ireland must exchange the product of two weeks' work with the product of one week of work in Canada, yet gains more by so doing than can be gained by refraining from the exchange of goods.

That, in the absence of trade restrictions or excessive cost of transportation, such trade will automatically take place, becomes evident so soon as we ask what prices will be charged by the producers in each country.

If Canadians are able to produce wheat for $1 a bushel (and, therefore, $20 a week), they will, of course, be unwilling to produce linen for any smaller weekly return, *i.e.* for less than $20 for 14 yards, or $1.43 a yard. If linen can be imported from Ireland for less than $1.43, say for $1 a yard, Canadian wheat producers will buy it from Ireland, and would-be Canadian linen manufacturers will find more profitable employment in wheat raising.

On the other hand, Irish producers, if selling linen to Canada at $1 a yard, will be earning only $10 a week, though considerably more than they could earn producing 6 bushels of wheat at $1 a bushel. To induce an Irish linen worker, under these circumstances, to enter wheat production, would require $10 a week or $1.67 per bushel. Hence, Irish linen producers will prefer to buy wheat in Canada; and, with Canada demanding Irish linen, Irish wheat producers will find a more profitable occupation in making linen. As we have seen,[1] it is altogether probable that some goods will be lower in price in each country than in the other. All prices could not long be lower in either, since the resulting inflow of gold would raise them. While there is no special virtue in the particular prices of $1 a bushel and $1 a yard here assumed for illustration, the conditions of production in each country, as stated in the hypothesis, are such as would make the wheat of Canada and the linen of Ireland the cheaper goods.

Trade between nations, as well as trade between parts of the same nation, results in a gain to both sides, for it makes possible geographical specialization and therefore a more productive employment of the factors of industry.

[1] § 2 of this chapter (I of Part II).

In theoretical discussion, international trade is sometimes separated from intranational trade, because of the fact that labor and capital flow, as a rule, with greater difficulty, from one nation to another.[1] Distance and expense, a strange government, separation from old friends and old associations, unfamiliar customs, different language, different religion, — any or all of these considerations may prevent the free movement of labor from one country to another. Some of them will cause hesitancy in making foreign investments. The argument is that within a nation, labor and capital will move freely to those localities where they receive the largest return. If Connecticut were more productive in every way[2] than Massachusetts, then labor and capital from Massachusetts would flow freely into Connecticut until conditions[3] were equalized, until the greater crowding of Connecticut and the less crowding of Massachusetts in comparison with resources, made labor and capital no more productive in the former than in the latter state. If Massachusetts had superiority in some lines and Connecticut in others, they would trade; while if Connecticut were superior in all lines, Massachusetts people would largely migrate. But if labor in the United States is more productive than in England, even in all lines, most of the English people may nevertheless prefer to stay at home. They will then simply produce those things in which their disadvantage is least. There is really no difference in principle between international and intranational trade, as such. In any case there is some immobility of labor and capital. In any case a sufficient inducement will at least partly overcome

[1] See Mill, *Principles of Political Economy*, Book III, Ch. XVII, § 1.
[2] At the margin of production. [3] At the margin.

the immobility, — witness the flow of Italian, Greek, and Polish labor into the United States. So the difference is one of degree and not one of kind. Also, such difference as exists may be as marked between widely separated parts of the same nation or empire, *e.g.* Maine and Montana, or Ireland and Canada, as between different nations, *e.g.* Germany and Austria. In either case, so long as labor and capital remain where they are, specialization is worth while.

§ 5

Summary

In this chapter we have discussed trade from the standpoint of relations of prices and price levels, location of industries, and the gains of trade. Through the influence of trade, the price in any country of any kind of goods tends towards equality with the price in other countries. The difference will not much exceed cost of carriage plus tariffs, etc. As a consequence, the price level of one country is related, if they have a common value standard, *e.g.* gold, to the price level of other countries, but is unlikely to be the same. The prices of some goods are lower in one country and the prices of other goods are lower in other countries, according to what each country can produce with greatest relative advantage.

If a country has great advantages for production in any line, it can produce in that line with great profit and can pay high wages, while yet selling abroad at low prices, the goods so produced. It is not necessary in order that a country shall export certain goods at a low price, that it shall be able to produce those goods with

less effort than their production would require elsewhere; but only that its disadvantage shall be less in that line than in others. On the other hand, if one country has an advantage over another in nearly all lines, but a greater advantage in some lines than others, it gains most by specializing in those lines where its advantage is greatest. Under conditions of free trade, there would be, then, a large amount of geographical specialization, each country devoting its energies to those lines where its productive capacity is relatively the greatest. Industry is turned the more from the lines it would otherwise follow in each country, the more widely and intensively restriction is followed. The gains from trade, when each of two communities has an absolute advantage over the other, and when each has a relative advantage in some line, were illustrated by hypothetical figures.

The distinction sometimes made between international and intranational trade was referred to, viz., that in the latter case, greater advantages of one community in all lines would cause movement of population, while in the former, immobility of labor and capital is more in evidence. In the former case (that of international trade), therefore, differences in *relative* advantages may sometimes be the principal basis of trade. But it was pointed out that this distinction is but a distinction in degree, and that, in any case, political boundaries are often less important factors in immobility of labor and capital than distance and natural barriers.

CHAPTER II

THE RATE OF INTERCHANGE OF GOODS BETWEEN COMMUNITIES

§ 1

The Limits to the Rate at which the Goods of One Country Exchange for Those of Another

WE have seen that differences in relative productiveness bring about trade between communities if there are no natural or artificial barriers or if these barriers are not unduly great; and that both communities concerned gain by such trade. How much each community gains depends on the rate at which the goods of one community exchange for those of the other. There are certain limits between which this rate fluctuates, and at a rate of exchange of goods beyond these limits, on either side, there would be no trade.

In showing what these limits are, we will again take trade between Ireland and Canada for illustration. We assumed that a week's labor in Canada would produce 20 bushels of wheat or 14 yards of linen. We saw, also, that if Canadians could get $1 a bushel for wheat, they would be willing to produce linen for $1.43 a yard, but not for less. Since Canadian wheat producers could buy this cloth at home for $1.43 a yard, they would not pay more than $1.43 a yard for linen cloth brought from Ireland. At a price greater than $1.43 per yard, they would cease to buy. If wheat is $1 a bushel, then

a price of $1.43 a yard for linen means that 1.43 bushels of wheat must be sold for each yard of linen bought. This, then, is one of the limits beyond which trade will not go. If Canadians have to give up more than 1.43 bushels of wheat to get a yard of Irish linen, they will lose by the trade; if less, they will gain by it, *i.e.* will get more cloth by exchanging a week's wheat yield for cloth than by devoting a week to cloth production. The same principle applies if the level of prices in Canada is higher or lower. Suppose Canadian wheat could be sold for $2 a bushel. Then the product of a week's labor, 20 bushels, would yield $40. Obviously, therefore, since a week's labor in linen production would yield, in Canada, but 14 yards, a price of $2.85 a yard would be required for its production there. In this case, it would pay Canadians to devote themselves to wheat production and sell their wheat at $2 a bushel, so long as they could buy linen abroad at less than $2.85 a yard. At this price or a greater, they would no longer gain. But we have merely restated our limit in terms of a new price level. At $2.85 a yard, Canadians would be parting with 1.43 bushels of wheat for each yard of linen. Whatever the price level, therefore, so long as 20 bushels requires, in Canada, the same productive effort as 14 yards, the limit beyond which Canadians would refuse to trade is 1.43 bushels per yard. At any less price of linen, Canadians would gain, and the lower the price, the greater the gain to Canada. The principle applies, also, if the trading countries have entirely different monetary standards. If Canada had an inconvertible paper money, there would still be some price in this money, for Irish linen, some amount of this money necessary to buy the foreign exchange or the gold to pay for

Irish linen. It would still be true that a yard of linen produced in Canada would cost 1.43 times as much as a bushel of wheat. If the amount of this money necessary to buy a yard of linen in Ireland should be more than 1.43 times the cost of a bushel of Canadian wheat, the linen would not be imported.

Beyond one limit, Canada would gain nothing and would, therefore, refuse to trade. Beyond the other limit, Ireland would gain nothing and would refuse to trade. The trade, if carried on, must benefit both, and will therefore lie between these limits.[1] Let us see what is the limit beyond which Ireland would not trade. If a week's labor in Ireland will produce 10 yards of linen or 6 bushels of wheat, and linen sells for $1 a yard, then Irish producers would be willing to raise wheat for $1.67 a bushel but not for less. Since the Irish linen manufacturing population can get wheat at home by paying $1.67 a bushel, to pay more for Canadian wheat would involve a loss. If linen is $1 a yard, therefore, Ireland will profit by purchasing Canadian wheat, at any price up to $1.67 a bushel. Beyond that price, Ireland will refuse to buy from Canada, preferring to produce the needed wheat at home. Similarly, if linen made in Ireland should sell for $0.50 a yard, Irish linen makers could be induced to produce wheat for about $0.83 a bushel, and that would, therefore, be approximately the limit to what Irish linen makers would pay for Canadian wheat. In other words, whatever the level of prices, the most that Irish linen makers would pay for a bushel of Canadian wheat would be 1.67 yards of

[1] Mill, *Principles of Political Economy*, Book III, Ch. XVIII, § 2. On the general theory of international values the mathematical reader may be referred to Edgeworth, "The Theory of International Values," *Economic Journal*, Vol. IV, 1894, pp. 35–50, 424–443, 606–638.

linen. At any less price they would gladly buy. At a more unfavorable rate, they would lose, and so would refuse to trade. We have found, then, the two limits to exchange. Between 1.43 bushels for 1 yard and 1.67 yards for 1 bushel, the rate of interchange must lie if there is to be any trade at all. 1.67 yards for 1 bushel is the same as 1 yard for .60 bushels. Therefore, the rate of trade must lie between 1.43 bushels = 1 yard, and .60 bushel = 1 yard. At either limit, all the gain from trade would go to one or the other of the two trading communities. Between these limits, the gain would be divided equally or unequally between those communities.

§ 2

Conditions of Supply and Demand Determining the Exact Rate of Interchange between these Limits

The question which has now to be answered is, what determines the exact rate of interchange — and, therefore, the gain to each country — between these limits. We shall find the determining factor to be relative intensity of demand, or, to use more familiar terms, we shall find the rate to be determined by supply and demand. Returning to our illustration, let us suppose that at a price of $1 a bushel for wheat and $1 a yard for linen, Ireland wants more bushels of wheat from Canada than Canada desires yards of linen from Ireland. In other words, Ireland's intensity of demand for wheat at these prices of wheat and linen, is greater than Canada's intensity of demand for linen. An excess of money would then flow into Canada and prices in Canada would rise, while in Ireland they would fall.[1] This would continue

[1] Throughout this book it should be borne in mind that the rise and fall may be only relative. There may be a general rise of prices, in which case Canadian

until a scale of prices was reached at which trade would be in equilibrium, *i.e.* at which Canada would buy as many dollars' worth of linen as Ireland would buy of wheat.[1] Let us suppose that this stage is reached when the quantity of money in Canada is $\frac{11}{10}$ of its former amount, and in Ireland (having smaller population, wealth, and currency, and being, therefore, affected through an inflow or outflow, by a greater per cent), $\frac{7}{8}$ of its former amount.[2] Then, by the quantity theory of money, prices in Canada would be some 10 per cent higher than previously. Assuming Canadian prices all to rise in this proportion,[3] Canadian wheat would sell for $1.10 a bushel.[4] Canadians would now be unwilling to make linen for less than $\frac{20}{14}$ of this, or $1.57 a yard. On the other hand, Irish linen would sell for

prices rise in greater degree than those of Ireland. Or there may be a general fall of prices, in which case Irish prices fall in greater degree than those of Canada. The important facts for our argument are the *relation* of Canadian to Irish prices and the changes in this relation. The discriminating reader will easily see that none of our essential conclusions are affected by the qualification here set forth.

[1] See Taussig, *Principles of Economics*, Vol. I, New York (Macmillan), 1911, pp. 496, 497. We are here assuming only two kinds of goods, linen and wheat, to enter into the trade.

[2] If the difference in intensity of demand is slight at prices of $1 per bushel and $1 per yard, it is conceivable that equilibrium may be reached by slight changes in the rates of exchange, insufficient to cause a flow of gold. A rate of exchange in Ireland, on Canada, slightly above par, and a rate in Canada, on Ireland, slightly below par, will slightly discourage Irish buying from Canada (or Canadian selling to Ireland) and slightly encourage Canadian buying from Ireland (or Irish selling to Canada).

[3] Since the goods imported from Ireland would not rise in price, but would fall, and since these goods must be handled, in Canada, by middlemen, other prices must rise by more than $\frac{1}{10}$ to make an average rise of that proportion. But if exchanging in Canada the goods brought from Ireland, forms but a small proportion of Canada's total internal trade (and it is not unreasonable to suppose this), then a rise in all other prices of not much more than $\frac{1}{10}$, would make an average rise of fully that.

[4] The circumstances which might prevent wheat from changing to the same extent as many other prices, are discussed in later chapters. For the present, these circumstances are assumed to be non-existent.

$\frac{7}{8}$ of its former price, or about $0.88. Irish workers could now be induced to produce wheat for $\frac{10}{6}$ of this, or about $1.46. This is cheaper than before ($1.67), but Ireland would still gain by consuming Canadian wheat, while Canada would gain more than before by purchasing Irish linen. Canada gets more for her wheat than before and pays less for her cloth, *because* Ireland's demand is the more intense. One bushel of wheat now gets $\$\frac{11}{10}$, and $\$\frac{7}{8}$ buys a yard of linen. One bushel of wheat, therefore, now buys 1.26 yards. Ireland gains less than before, but the trade is still inside the limit of profitableness to Ireland. Ireland gives 1.26 yards for one bushel, while the limit of profitableness is 1.67 yards for one bushel. At the new rate of interchange, Canada may be induced to buy more linen and Ireland prevented from buying so much wheat. Where an equilibrium is found, there will be the rate of trade.[1]

Except as to relations of money prices, the conclusion is the same if the two countries engaged in trade have different monetary standards. If Canada, for example, had paper money not redeemable in gold, an excess demand from Ireland for Canadian wheat could not, it is true, increase Canadian money or Canadian prices; but it would, as we saw in an earlier chapter,[2] change the relative values of Irish and Canadian money, so that buyers in Ireland of Canadian wheat must spend more of their money for each bushel pur-

[1] Mill suggests that there may be several rates satisfying the conditions of equilibrium, *Principles of Political Economy*, Book III, Ch. XVIII, § 6. This might conceivably be the case if the trade were between two nations, each free of competition from others, and if few articles entered into the trade. In the complications of actual commercial relations, it is practically impossible that it should be so.

[2] See Part I, Ch. VI, §§ 7, 8.

chased, and so that Canadians could buy each yard of linen at a cost, in Canadian money, less than before. At some rate of interchange of wheat and linen, the trade would balance.

The rate would be determinable, also, if no money were used and trade were all in the form of direct barter. The country having the more intense demand would, as under existing forms of trade, offer a better rate.[1] We may, if we so desire, say that at present a trade between communities is resolvable into two trades, one of goods for money, and a second of money for other goods. If we so look at the situation, we may further say that each of the two trades, separately, illustrates the effect of relative intensity of demand. The country which is the more anxious to get the goods of the other will show a relatively great intensity of demand for money or gold, giving a comparatively large amount of its own products for a given sum of money; and it will then show its intensity of demand for the desired products of the other country by giving large amounts of money or gold for these.

In more familiar phraseology, we may say that the rate at which linen exchanges for wheat is fixed by supply and demand, and will be such a rate that the supply of wheat offered to Ireland by Canada is equal to Ireland's demand for wheat; otherwise stated, that the supply of linen offered to Canada by Ireland shall be equal to the amount demanded.

[1] The general principle, in fact, even when actual modern trade has been in view, has been frequently explained by economists without special reference to the flow of money. See, for example, Mill, *Principles of Political Economy*, Book III, Ch. XVIII, § 2; see also Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 27. The flow of money has then, as in Mill, Ch. XIX of Book III, and Bastable, Ch. III, been brought under the general law.

§ 3

Effect on this Rate, when One of the Countries Offers a Variety of Goods in Trade, and also when it Receives Periodic Payments of Obligations from the Other

We must now modify our hypotheses, to make them conform more nearly to actual conditions. In trade between two countries, there are almost certain to be more than two commodities or services involved. Ireland, to recur to our illustration, will probably buy other things than wheat of Canada, possibly furs, timber, iron ore, etc.; while Canada is likely to buy other things than linen of Ireland. Then, even if, at $1 per bushel and $1 per yard, respectively, Ireland wants more wheat than Canada does linen, money does not necessarily flow to Canada, changing relative prices and the gains of trade. For Canada's desire to purchase other Irish goods may be intense enough to keep the relative distribution of money and the relative benefits of trade as they were.

In general, we may say that the more varieties of goods a country can offer for export, the better is its position in trade.[1] England's position, for example, is better if it produces several kinds of goods for foreign sale than if it produces but one. The demand of France or Italy or other countries for these several kinds of goods will be greater than for any one thing alone. As a consequence, there will be a greater tendency for gold to flow into England, making English prices higher and French, or other prices, lower, so giving England a larger gain from the trade. The more largely English merchants and manufacturers can introduce English

[1] Mill, *Principles of Political Economy*, Book III, Ch. XVIII, § 6.

goods into favor in the Orient, in Africa, in South America, or elsewhere, the greater is the gain, not to these merchants and manufacturers alone, but to the English nation. Among the goods that England is in a position to offer, must, of course, be included banking service, freight service, etc., as well as commodities. The fact that other countries desire to make use of her ships is as much a help toward making trade more profitable to England as the fact that other nations desire to buy her manufactures.

In a similar way, England is helped by the fact that her people have large investments abroad, on which they receive interest, dividends, etc.[1] According to the principles set forth in Part I, Chapter V,[2] this means flow of gold to England, higher prices there, lower prices where the money comes from, and, consequently, a flow of money back again from England. In the long run, England receives interest in the form of goods rather than of money. The money tends to flow back until the normal equilibrium is restored. But if England has relatively permanent investments, say in the United States, and is therefore receiving interest and dividend payments from the United States for many years in succession, the normal equilibrium of prices probably will not, during all that time, be reached. As fast as this equilibrium is approached, further interest and dividend payments upset it. For a great many years, therefore, English prices are likely to be somewhat higher, and American prices somewhat lower, than would be the case if Americans owed nothing. During this period, then, England will get somewhat more for English goods

[1] Taussig, *Principles of Political Economy*, Vol. I, p. 499. [2] § 8.

and pay somewhat less for American goods, than otherwise. The rate of interchange is slightly more favorable to England than it would otherwise be. Even assuming all trade to be carried on in the form of barter, this conclusion would still hold true. For if England were getting continuous interest in American goods, English desire for such goods would be partly satisfied, their utility to the people of England would be less (law of diminishing utility), and they would have to be offered at a less value in terms of English goods.[1]

On the other hand, England's advantage in the rate of trade, due to payments of interest, etc., which have to be made to Englishmen, must be regarded as an offset to a corresponding disadvantage in the rate of trade, during the period when the investments (on which interest, dividends, etc., are being received) were made. During the period when England's (or any country's) annual investment abroad exceeded her annual profits from abroad, the tendency was for gold to flow from England to other places. This tended to make prices elsewhere higher, and English prices lower, to give other countries, for the time being, a more favorable rate of interchange of goods with England. A country whose people are making large investments abroad, then, will have to dispose of its goods, for the time being, at a *less* favorable rate; but it will later, during realization of

[1] The law of diminishing utility is the fundamental explanation of England's gain in our illustration, even if money is used. Were it not for the law of diminishing utility, no change, or no appreciable change, in relative price levels would be required to bring about the flow back, for goods, of the money paid in dividends, etc. The flow back would begin to take place before the flow of money into England had appreciably changed the price level there or here, and would take place, therefore, without making the rate of interchange of goods appreciably more favorable to England.

profits and repayment, be able to dispose of its goods at a *more* favorable rate.[1]

§ 4

Influence on Trade and the Rate of Trade of Production in any Country under Conditions of Different Cost

Up to this point, we have assumed the commodities entering into trade to be produced at constant cost per unit, regardless of the amounts produced. But such is by no means always the case. Let us revert to the instance of Ireland trading with Canada. One week's labor in Ireland was supposed to produce 6 bushels of wheat. As a matter of fact, all land is not alike in fertility or in convenient access to market. While, therefore, it might be true that, if Ireland produced all her own wheat, one week's labor at the margin of cultivation (that is, on those lands least favorable to wheat production of all the lands so used, but which must be devoted to wheat production, to secure an adequate supply) might produce but 6 bushels; a week's labor in other parts of Ireland would perhaps produce a great deal more. If Ireland produced all her own wheat, the people of Ireland would have to produce it, perhaps, on unfertile lands and where the conditions of production were relatively unfavorable. It might, therefore, be uneconomical for Ireland to produce her own entire

[1] Since investment is really, in large part, a purchase of capital goods, *e.g.* railways, farms, factories, etc., it may be asked why the general discussion regarding the trade of the goods of one country for the goods of another does not cover investment also. But investment is rather the purchase of rights in goods which are not themselves moved. The capital purchased remains in the foreign country and yields *future* income to the distant investors. This yielding of future income, involves a later and opposite influence on the rate of trade between the countries, which does not occur when the owners and the capital owned are in the same place. Hence, special consideration must be devoted to the effects of lending and investing, on trade.

supply of wheat. Some wheat should rather be imported from Canada. But it might well be profitable for the people of Ireland to employ some of their more fertile land, if not better situated and adapted for other crops, in wheat production.[1] The possession of this more fertile land would lessen the intensity of Ireland's demand for Canadian wheat, and would thus tend to make the rate of trade between the countries more favorable to Ireland than if her entire supply of wheat had to be secured from abroad. If linen sells for $1 a yard and Canadian wheat is $1 a bushel, then it is of course more profitable for Ireland to buy Canadian wheat than to produce wheat on poor Irish land, under intensive cultivation (*i.e.* with but small areas of land for each unit of labor), where a week's labor can only produce 6 bushels, and where it can only be remunerated by a price of $1.67 a bushel. But it would be profitable for Ireland to produce wheat for home consumption on land where a week's labor would yield 14 or 13 or down to 10 bushels, unless this land, or part of it, was so situated and adapted as to yield still more from some other use, *e.g.* from being used to raise potatoes. A yield of 10 bushels a week would require only $1 a bushel (linen being $1 a yard), to induce wheat production in Ireland, and so to raise the wheat, would, by our hypothesis, be as economical as to import it from Canada. On land yielding 7, 8, 9, or less than 10 bushels a week, wheat production in Ireland is uneconomical as long as a yard of linen cloth will buy from Canada a bushel of wheat. So it results that, because of the law of diminishing returns, it is often most profitable for a country to produce, in part, its desired supply of some commodity, and import the rest. If the

[1] Bastable, *Theory of International Trade*, pp. 29 and 30.

demand for wheat in Ireland became greater, poorer Irish sources of production would perhaps be resorted to for a small part of the supply, while somewhat more would be imported from Canada and elsewhere at the higher price, relative to linen cloth, resulting from this greater demand.

By similar reasoning it may be shown that beyond a certain point of high cost, wheat production in Canada for export would not be carried, but that the people of Canada would prefer to devote themselves, in part, to other work, even to the manufacture of linen. Canadians would not carry wheat production to land so poor (assuming a great increase in population) as to yield less than 14 bushels a week, so long as 14 yards of linen could be produced in a week's labor; for, beyond that point, it would pay better to produce linen at $1 a yard than wheat at $1 a bushel. Growing density of population tends, in general, to the spread of manufacturing, because employment in agriculture, after a certain degree of intensiveness of cultivation has been reached, becomes less profitable at the margin the more persons are engaged in it.

It has been the good fortune of the American people that they have lived in a country not overpopulated and one of very considerable natural resources. They have had always, therefore, the opportunity to engage in the extractive industries, particularly in agriculture, and realize large returns in so doing. They have not had to take up manufacturing, however small the profits, merely for the lack of a profitable alternative, though they have found it worth while to engage in various lines of manufacturing industry which American resources or American methods make especially productive

in the United States. If other countries, such as England and Germany, are forced by dense populations and limited resources to engage in manufacturing to a greater relative degree, Americans have, on that account, no reason for envy, nor any reason for attempting, through tariffs or other arbitrary interferences, to force American industry more largely into parallel channels.

§ 5

Extension of Hypothesis so as to Include Trade Involving More than Two Countries

As we broadened our first hypothetical conditions so as to include more than two kinds of goods, we shall now further broaden them so as to consider more than two trading communities. We have assumed Ireland and Canada to be engaged in trade with each other. But trade may be three-cornered or four-cornered or more. Ireland may sell its linen chiefly to the United States instead of to Canada; the United States may sell cotton to Canada; and Canada may in turn export wheat to Ireland. Under these circumstances, the rates of interchange would still depend on relative intensities of demand. The rate at which Ireland can exchange linen for wheat, depends on the price which can be realized, in the United States, for linen, and the price which must be paid, in Canada, for wheat, or upon the intensity of American demand for the linen compared to the intensity of Irish demand for the wheat. The American demand for the linen, at any price, will depend, in part, on what Americans can get for cotton. The Canadian demand for cotton will depend, in part, on what Canadians can get for wheat. If Ireland has a surplus de-

mand for wheat at $1 a bushel, gold will flow to Canada and Canadian prices will rise. Canadians may then buy more cotton, in which case American prices will rise. Irish prices will fall, and Americans will probably buy more linen. When equilibrium is reached, Ireland will be paying somewhat more for wheat and getting somewhat less for linen. The United States will probably be getting somewhat more for cotton and will be paying somewhat less for linen. Canada or the United States or both will gain more from the trade, and Ireland will gain less. As in trade between two countries, equilibrium will be reached at a set of relative prices or values which equalizes supply and demand.

How are the commercial interests of three nations affected by the entrance of the third into trade with the other two? The general effect will be an increase of prosperity, and it is entirely possible that each of the three countries will gain something. Suppose, to take a seemingly most unfavorable case, that France enters a trade previously confined to Ireland and Canada, as a competitor of Ireland, competing with the last-named country in the sale of linen to Canada and in the purchase of wheat from Canada. In so far as France engages in this trade and no other, Ireland is deprived of a part of her former gain; but there is no net loss, for France and Canada together gain as much as Ireland loses, or more. In consequence of the competition of France, linen will fall in price, or wheat will rise, or both, so that a yard of linen buys less wheat than before. So far as Ireland still engages in the trade, at the new and, to her, more unfavorable rate of interchange, Canada gains, besides her former profit, precisely what Ireland has ceased to gain. So far as Ireland is driven out of the

trade by the entrance of France, France gains at least as much trade as Ireland loses, though at a rate of interchange somewhat more profitable to Canada and somewhat less so to France, than would be necessary were Ireland's competition absent. So far as France loses through the less favorable rate of interchange caused by Ireland's competition, Canada gains. If the result of the competition is a larger trade for Canada with the other two countries than Canada previously had with the one, as well as a more favorable rate, then Canada gains more than either of the others loses or than both lose; for Canada's greater gain on the same trade as before, at the better rate, makes up for the lessened gain of the other or others; while the additional trade, which must be at least worth having to the other country or countries, else it or they would not trade, is a very considerable gain to Canada. The competing countries, therefore, though they may hurt each other, will benefit by at least as much, and probably by more, the country or countries for whose trade they compete.

If, now, besides competing *against* Ireland in the trade with Canada, France also enters into trade *with* Ireland, both Ireland and France may gain from this trade as much as, or more than, they are losing by their competition. Then the entering of France into trade relations with the other two countries will benefit Canada, Ireland, and France. It seems a perfectly fair statement, therefore, that the more widely trade is voluntarily, and without governmental encouragement, extended, *i.e.* the more countries enter into it, the greater is the total gain; and that there is reasonable hope for a greater net gain to all countries concerned. In no case can the entrance of an additional country or community

cause a country or community already engaged in a trade, to engage thereafter in a losing trade. It has already been explained that unless a trade yields a gain to both (as, of course, to all, if more than two) countries concerned, the trade will not take place. The most that the new competition can do is to decrease this gain for the country or countries on one side of the trade. And, as above pointed out, the countries which lower each other's gains by competition for the trade of a third country, may increase each other's gains by trade with each other.

Any country gains more, the more numerous the other countries which desire its products and the more numerous the other countries which have goods to offer it. On the other hand, the competitive entering of many countries into trade makes it impossible for any one country to gain so extreme a share of the advantage in trade with another as otherwise it might. The one country will seldom have a monopoly of the production of goods needed in the other and will seldom be the only place where the other can sell its products. Alternative markets will generally be available, and the gains of trade are therefore likely to be more nearly equal between two trading countries. It is for these reasons that the policy of European nations, in early colonial days, of restricting the trade of colonies with other than their respective mother countries, might be advantageous to the mother countries, but was at the same time disadvantageous to the colonies.

§ 6

Cost of Transportation as Related to Trade

Cost of transportation is a factor influencing trade, which must be considered before our discussion is complete. This cost subtracts from the gains of trade the amount necessary to remunerate those engaged in carrying the goods. The principles determining how much gain is realized by each country are, of course, unaffected. Trade which cannot yield enough to pay for transportation simply does not take place, unless it is artificially stimulated, as by government bounties.

§ 7

Summary

In this chapter we have confined our attention almost entirely to the rate of interchange of goods between trading communities and countries. We have seen that, in the case of trade between any two countries, the rate at which the goods of the one exchange for the goods of the other cannot lie beyond either of two limits, at the one of which the one country, and at the other of which the other country, gains nothing from the trade. Between these limits, the exact rate is fixed by the comparative intensity of demand of each country for the goods of the other, or, to use familiar terms, by supply and demand. Whether gold is a common standard of value, or the currencies unrelated, or the trade direct barter of goods for goods, the rate of interchange will be fixed where intensities of demand balance.

A country is the more likely to get a large share of the total gain resulting from its trade with another

country or countries, the greater the variety of goods it can offer to stimulate the desire of the other country or countries to trade. In like manner, a country to which payments have to be made by other countries, *e.g.* of interest and dividends, is in a position to get, in consequence, more favorable rates of interchange, though such a country may have had, previously, during the period of its investing operations, somewhat less favorable rates.

The assumption first made that each country would buy of the other the goods securable most cheaply from the other, was explained and qualified to conform with the fact of differing cost of production of any good, within the same country. It was pointed out that a country might produce for itself a certain amount of a desired kind of goods, from its most favorable sources of supply, or up to the point where further home production would involve uneconomical employment of its labor and capital; and that beyond that point it would import.

Our assumptions were further broadened to include trade involving more than two countries. Three-cornered trade was alluded to, and it was shown that the influence of comparative intensity of demand is of determining force in this case and likewise in cases involving still more countries. If a third country (or a fourth or fifth) enters into a trade previously confined to two countries (or three or four), the result will be a greater total prosperity, although if the third country enters the trade only as a competitor of one of the others, that one may find its gains somewhat reduced. If each trades with each of the others, there is a reasonable prospect for increased prosperity to all three. Any country, however, is prevented by the entrance of other countries

into competition with it from realizing exorbitant profits at the expense of the countries it trades with. On the other hand, any country gains the more from trade, the larger the number of other countries which compete with each other in buying from and selling to it.

CHAPTER III

The Incidence of Tariffs for Revenue

§ 1

Revenue and Protective Tariffs Distinguished

So far we have discussed international trade mainly on the assumption that such trade is wholly free. As a matter of fact, trade is almost never wholly free between nations, though it is frequently so within the boundaries of a single nation. One of the largest, if not the largest, of free trade areas in the world, is the United States. Between one state and another, any tariff is unconstitutional. We have, therefore, free trade within our own borders, though not with outside nations. Almost, if not quite, every nation has a tariff wall, high or low as the case may be, which, usually, to a greater or less extent, hampers trade. Tariff duties at the boundaries of a country may be levied on goods imported or on goods exported, but in practice are much more likely to be levied on the former.—We shall consider the economic effects of both import and export duties.

Import duties are of two sorts, revenue tariffs and protective tariffs. A strict revenue tariff is intended to raise revenue, while not interfering with trade more than is necessary. Although absolute free trade practically never exists between great nations, yet, in ordinary usance, free trade is said to exist when the tariff levied is levied according to strict revenue principles. A strictly revenue tariff, or so-called "free trade," means,

then, such an adjustment of taxes as will not, in any great degree, divert industry in the levying country out of the channels it would otherwise follow, *i.e.* it will so divert industry to the least possible extent consistent with collection of the needed revenue. A tariff levied by any country only on goods not produced within it, is such a tariff. An example is the British import tax on tea, an article not produced in Great Britain or Ireland. An import duty on goods which are, or can be, produced within the levying country, is also, properly speaking, a revenue duty, if it is accompanied by an internal tax of equal amount [1] on the domestic product. Such a tax does not have, and is not intended to have, any great effect on the location of industry. If the domestic producer is helped by the tax levied on imported goods, he is hindered to an approximately equal extent by the tax laid upon his own goods.[2] His position in relation to that of his foreign rivals remains, therefore, substantially the same as before.

A protective tax is intended, as such, primarily to divert industry from the channels it would otherwise follow into channels favored and encouraged by the tariff law. Its purpose is to encourage the home producer in some line or lines by levying a high tax on goods brought from abroad and thus discouraging the importation of such goods.

[1] If the domestic goods are of identical grade and therefore of the same value, a tax of the same per cent is also a tax of the same amount per unit of quantity. If the domestic goods are of different grade and different value, the question might arise whether a per cent tax or a tax per unit should be levied equally on both.

[2] Of course the tax, by necessitating a higher price, may decrease the total demand. If so, both home and foreign producers may make smaller sales. But so far as the public still buys the goods, these goods are produced where the conditions are relatively the best.

Expressing the matter in another way, we may say that both the revenue and the protective tariff are taxes on the consumer; but that in the former case the consumer pays this tax to the government, while in the latter he pays a tax to the home producer. A revenue tariff on imports can only be successful in its chief aim if it allows goods to be imported, because on all such goods a tax is paid which goes to the government and may be used for public purposes; while, on the other hand, a protective tariff is most successful in its aim in so far as it prevents goods from being imported, because then its effect is to raise the price which the home producers can charge. In this latter case, the government gets little or no revenue, and the tax, if we call it such, which the consumer pays, is paid, in the main, to the home producers, rather than to the government. In other words, the protective tariff makes the consumer buy of the home producer at prices higher than the home producer could otherwise charge.

§ 2

When the Burden of an Import Duty Levied for Revenue is Borne by the Levying Country

A revenue import duty is commonly supposed to be shifted by the importers on whom it is first imposed, to the consumers, in the levying country, of the taxed goods. In the complications of modern trade, with many countries taking part, this result is perhaps very nearly realized. But it is perhaps never exactly realized, and it is not difficult to imagine circumstances under which the main burden of the tax would fall elsewhere than on the consuming public of the tariff levying country.

Under sufficiently favorable (to the levying country) circumstances, a part, or all, of the tax might fall upon the exporting country, or, conceivably, the exporting country might lose more than the tax, to the profit of the levying country.

Let us, in discussing the various possible shiftings of an import revenue duty, use again our familiar illustration, the assumed trade between Ireland and Canada. If Canada, where a week's labor will produce, according to our first assumptions, 20 bushels of wheat at $1 a bushel or 14 yards of linen at $1.43 a yard, levies an import duty of 10 cents a yard on linen from Ireland, which would otherwise sell for $1 a yard, this linen will sell for $1.10. Irish linen will still be bought by Canadians in preference,[1] since Canadian linen cannot be sold for less than $1.43. The tax is levied first on the importers. The importers will not, perhaps cannot, remain in business if they are unable to shift the tax, for to pay it themselves will make their profits (if these have been subject to competition and are therefore approximately the same as in other kinds of business) less than the same labor and capital will yield in other lines, and will very likely even turn them into losses. The foreign producers will not (unless combined in a monopoly and previously earning monopoly profits, and not then except under very improbable circumstances [2]) consent to suffer the loss, since this will reduce

[1] If there is any likelihood that such will not be the case, and if the tariff is to be levied for revenue, not for protection, a tax as great should be placed on the home produced goods.

[2] *I.e.* if the monopoly will lose less to bear the whole tax than to shift it and suffer a reduction of its sales. A monopoly will itself pay, without trying to shift, a tax levied directly on monopoly profits, since the monopoly can best pay such a tax by maintaining the same prices, *i.e.* prices yielding the highest net return. But a tax which increases in proportion to the number of sales, a monopoly will

their profits below the average level in their country, in other lines. The supply of Irish linen offered in Canada will not, therefore, equal the demand, unless the price rises by 10 cents a yard.

If the demand of Canada for linen is absolutely inelastic, the shifting proceeds no further; the 10 cents a yard remains as a continuing burden on Canadian consumers of linen. A certain amount of linen was wanted at the former and lower price, and the same amount is wanted at the somewhat higher price. The 10 cents additional goes to the Canadian government. The same amount as before must be paid to linen manufacturers in Ireland. Canadian wheat prices will not change, and wheat consumers in Ireland will buy the same amount as before of Canadian wheat. The trade will be in equilibrium at just the same point, as to quantity of money in each country and as to amount of cloth required to buy a bushel of wheat, as before. The net result is to take 10 cents a yard from each Canadian purchaser of linen imported from Ireland, and transfer this 10 cents to his government. If we omit reference to money and money prices, we may say that the tax has left just where it was before, the rate of interchange between the two commodities, linen and wheat, which equalized supply of and demand for each in terms of the other; and that the Canadian government has simply taken in taxation, from its own subjects, a part of their gain from the trade.

be more likely to endeavor to shift, and will not so greatly fear a resulting decrease of its sales, since this involves a decreased tax also.

§ 3

When the Burden of an Import Duty Levied for Revenue is Shifted by the Levying Country to Another or to Other Countries

But the situation is otherwise if Canada's demand for Irish linen is *elastic* while, at the same time, Ireland's demand for Canadian wheat is inelastic. If the demand of Canada for linen imported from Ireland is elastic, then the effect of the ten cents tax, in raising the price of the linen to $1.10 a yard, will be to decrease the Canadian demand for the linen. In consequence, Canada will have a smaller money obligation to Ireland. Yet if Ireland continues to buy as much wheat as before, the yearly money obligations from Ireland to Canada will be the same as if the tax were not in force. There will consequently be an excess flow of money to Canada. Canadian prices will rise and Irish prices will fall. Of course, if the Irish demand for wheat is elastic, or if Ireland can as cheaply buy her wheat elsewhere, Ireland's demand for wheat will fall off as soon as the price rises very slightly. Then there can be little redistribution of the money metal, and Canada can shift very little of the tax upon Ireland. The net result is less trade. Canadians buy less cloth and sell less wheat. But if the Irish demand for Canadian wheat is inelastic, continuing at about the same amount despite rise of prices, then the tax may seriously decrease Ireland's gain from the trade, to Canada's advantage.

To illustrate this possibility, let us suppose that, in consequence of the tax on linen of ten cents a yard, which raises the price to Canadian consumers, the demand for linen is so decreased in Canada that there is

a net inflow of gold from Ireland; and let us suppose, further, that the inflow of gold does not cease until the supply of money in Canada is $\frac{12}{11}$ of its former amount, and that of Ireland $\frac{9}{10}$ of what it was. Then Canadian wheat would sell for $\frac{12}{11}$ of $1 or about $1.09 a bushel, while Irish linen, not counting the tax, would sell for $0.90 instead of $1 per yard, or, with the ten cents tax, at $1 instead of $1.10. Let us suppose that, at this new set of prices, Canada again has to pay Ireland as much for linen each year as Ireland has to pay Canada for wheat.

How does the case stand as to gains and losses of the two communities? The Canadians are still getting their linen for $1 a yard, the price without the tax having fallen to $0.90. And they are getting $1.10 a bushel for wheat instead of $1. The Canadian government is securing its ten cents tax on every yard of linen; yet Canadian consumers are paying no more than before the tax was laid, and Canadian producers are getting a higher price for their wheat. The people of Ireland are paying to Canada the tax and more than the tax.[1] The linen manufacturing interests of Ireland are receiving $0.90 instead of $1 a yard for their linen; they are paying more for wheat. It is still worth while for them to engage in the trade. They can still secure more wheat in exchange for a week's production of linen than they can themselves produce in a week (except on their best lands). But they gain much less from the trade than formerly. It should be added that the taxing country, Canada, may gain also in lower prices of other Irish goods than linen cloth, resulting from the redistribution of money, and in their ability to buy more of

[1] Mill, *Principles of Political Economy*, Book V, Ch. IV, § 6.

these goods because of the lower prices and their own higher incomes.

We must guard ourselves against the assumption that the whole loss falls upon the Irish linen manufacturing population as distinguished from Irish producers in other lines.[1] The loss is general. The linen producers would not remain in that business and alone bear all the loss, since labor and capital tend always to leave relatively unprofitable for relatively profitable activities. They only sell linen more cheaply because of a decrease of money in Ireland, which tends to lower in a like proportion the prices of all Irish goods and Irish labor.[2] Likewise, the higher price of Canadian wheat falls alike on all consumers of it in Ireland.

On one hypothesis, however, the price of linen made in Ireland would fall by a greater per cent than other Irish prices, viz. on the hypothesis (likely to be in conformity with fact) that the profits of linen production are greater in some factories and on some sites in Ireland than on other sites in that country. If the tax decreases the demand for the linen in Canada, the Irish manufacturers on the better sites may alone be able to satisfy the demand remaining; and they may be willing to do so, because of their relatively advanta-

[1] Mill, *Principles of Political Economy*, Book V, Ch. IV, § 6.

[2] Strictly speaking, a $\frac{1}{10}$ decrease of money in Ireland would, under the conditions here assumed, cause a fall in the prices of Irish goods, of more than $\frac{1}{10}$. For it would cause a fall of $\frac{1}{10}$ in average prices, including the price of Canadian wheat and its products so far as bought and sold in Ireland, *e.g.* by middlemen. Since these goods would be higher in price, other goods must fall in greater proportion than 10 per cent. Whether the fall in the prices of other goods would be *much* greater than 10 per cent, would depend upon the importance, in the Irish market, of the Canadian product. If trade with Canada is assumed to be of slight importance, other prices would fall by about $\frac{1}{10}$, otherwise by more. But no good purpose would be served by complicating the text with these refinements.

geous positions, at prices lower than could be afforded by marginal manufacturers (*e.g.* those on the poorest sites), rather than go into other occupations. The loss to Ireland, due to Canada's tax, would then fall with greatest weight on the linen producers of Ireland, or on the owners of sites adapted to linen manufacture. A surplus gain, from better organization or from more advantageous situation, which these classes had previously enjoyed, would be lessened.

As regards the ultimate burden of the tax, we reach no different conclusion if we assume the currencies of Ireland and Canada to be based on independent standards and prices in the one country to be entirely unrelated to prices in the other.[1] Suppose each to have a paper money standard, not redeemable in gold. The ten cents tax discourages Canadian purchase of Irish linen. Ireland continues to buy about the usual amount of Canadian wheat. The balance is settled in gold. In Ireland, gold becomes scarcer and has more purchasing power; in Canada, it becomes more plentiful and has less purchasing power, per unit quantity. Irish paper money will buy less gold. Canadian paper money will buy more gold. Canadian wheat remains $1 a bushel in terms of Canadian money, but it requires more gold than before to buy it, and more Irish money to buy the gold. The cost to the people of Ireland of Canadian goods tends to rise. The cost to Canadians of the products of Ireland tends to fall. Omitting, altogether, consideration of money prices, we may say that the tax, by discouraging Canadians from trading, has made necessary a new, and, for Canada, a more favorable rate of interchange of goods, to equalize supply and demand.

[1] Cf. Part I, Ch. VI, §§ 6, 7, 8, 9.

The illustrative figures which have been given show a loss to Ireland greater than the amount of Canada's tax.[1] Ireland's loss, however, might be the equivalent

[1] Professor Edgeworth seems to take the view (*Economic Journal*, Vol. VII, p. 397) that this extreme possibility is a consequence of the tax being collected, in practice, in money, and that if it were collected in kind, Ireland (in our example) could not be made to pay more than the tax. His thought apparently is that, however elastic Canada's demand for linen, if Ireland paid the tax in linen, in addition to giving Canadian consumers as much linen as before for the same amount of wheat as before, the trade would again be in equilibrium; that the Canadian consumers, as distinguished from the government, would then be entirely unaffected by the tax, and would be as willing to buy linen with wheat as previously and in as large quantities; and that Ireland, therefore, would not have to pay more than the tax to get the accustomed supply of wheat from Canada.

A correct distinction between the circumstances under which more than the burden of the tax might conceivably be shifted upon Ireland and the circumstances under which the full amount of the tax would be the limit of this burden, is based on what the Canadian government does with the tax and not at all on whether it is initially collected in money or in kind. We may rightly conclude that a Canadian import tax collected in linen could not impose a greater burden upon Ireland than the amount of the tax, if we suppose the Canadian government to throw the linen it receives as taxes into the sea or if we assume that it uses the linen so received for a purpose which would otherwise not be carried out. We may reach exactly the same conclusion with equal certainty, however, if we suppose the tax to be initially collected in money and the money then used to buy the linen to be disposed of in one of these two ways. If the burden of this tax collected in money falls entirely upon Ireland, then Ireland must sell enough more linen (assuming she has no other exports) to pay it. But the Canadian government expends the entire money returns from the tax for linen which, otherwise, by our present hypothesis, the government would not buy. In other words, Canada buys as much more linen as Ireland must sell additional to pay the tax. If Ireland, therefore, thus bears the entire burden of the tax by exporting extra linen, the remainder of her linen will find the same market as previously and will bring her as much wheat as before.

But if the Canadian government would use about the same amount of linen anyway, then for the government to get this linen by taxing linen imports in kind (and likewise by taxing them in money) instead of by purchasing the desired linen with the proceeds of internal taxes, means that, whereas the government before, in effect, offered say wheat (if the money equivalent is offered, our conclusion would be the same) taken in taxes for the desired linen, now it offers nothing. Both individual Canadian consumers and the Canadian government had been offering wheat for linen. Now only the former are doing so. The people of Ireland, if the Canadian wheat is necessary for them, must now buy as much wheat with linen (assuming them to have nothing else exportable) from

of the tax, or it might be considerably less than the tax. Thus, the equilibrium of trade might be restored when Canadian wheat had gone up to $1.03 a bushel, and Irish linen down to $0.96 a yard, making $1.06 with the tax. Then Canadians would be paying 6 cents of the 10 cents tax on each yard, but getting back 3 cents of it in the higher price of wheat. Ireland would be paying the larger part of the tax, but Canada would have failed to shift all of it upon Ireland.

Two conditions, then, or sets of conditions, favor the tax-levying country in any attempt to shift the burden of the tax upon the country trading with it. In the first place, the tax-levying country is advantaged by

the Canadian people individually as they previously bought from individual Canadians and the Canadian government together. If the Canadian people, as individuals, have a comparatively elastic demand for linen, Ireland must offer them for their individual consumption, besides what their government gets, about as much linen as before per bushel of wheat or they will not trade to anything like the former extent. Ireland must therefore pay most or all of the tax. But Ireland will then only be getting the wheat she previously got from Canadians as individuals and will not be getting what she previously got as a result of her trade with the Canadian government. This additional amount she must now get (for we are supposing her demand to be inelastic) from Canadians as individuals, and to do so she must sell more linen. The result may be, even though Canada's demand for linen is somewhat elastic, that the marginal utility of linen to Canadian consumers falls, and that Ireland must offer more than before, per bushel of wheat, besides paying the tax.

It is true that if Canadians are released from a tax they themselves previously paid, they may want more linen than before, but the probability is that their greater prosperity so resulting would be enjoyed in other ways also and would but slightly affect their demand for linen. And unless the entire gain from remission of the taxes formerly spent by the government for linen were now spent by the Canadian people for additional linen beyond their previous individual consumption, the new demand resulting from their greater prosperity would not take the place of the former demand by their government.

We cannot safely conclude, therefore, that if the tax is collected in kind, Ireland cannot possibly lose more than its equivalent, As is shown in the text, any great shifting of taxes to foreign nations is rather a theoretical possibility than a practical probability, but if it is a theoretical possibility when collected in money, it is also a theoretical possibility, and to the same extent, when collected in kind.

having a very elastic demand for the goods of the other, coupled with monopoly of consumption of the goods of the other.[1] In the second place, the tax-levying country is aided if it has a monopoly of production of the goods it sells while the other country has an inelastic demand for those goods.[2]

In practice, the conditions under which a country can shift all or most of its import taxes upon another, are unlikely to occur, or, at least, are unlikely to occur in conjunction. To begin with, we cannot expect that, in general, the country exporting the taxed product will have an inelastic demand for the product or products of the taxing country. And, secondly, a very slight change in relative prices may bring additional articles within the demand of the taxing country, thus maintaining the equilibrium of trade nearly where it was before. To illustrate, a slight rise of Canadian prices and a slight fall of Irish prices may induce Canadians to buy potatoes, silks, and laces, as well as linen, in Ireland. Then equilibrium may result without a sufficient change in the rate of trade to throw upon Ireland much of the burden of the import tax.

Thirdly, and probably most important of all, the taxing country cannot ordinarily shift much of the burden of its import duties to another, because third countries offer to this other a competing or alternative trade. Thus, Canada probably cannot throw upon Ireland the burden of a tax on Canada's imports, because Ireland has the alternative of trading with India, Argentina, the United States, and other countries. If Canada buys less Irish linen because of the tax, so that money

[1] Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 116.

[2] *Ibid.*, pp. 116, 117.

flows into Canada and Canadian prices rise, Ireland will buy wheat of India, the United States, Argentina, or Russia, rather than pay higher prices for Canadian wheat. In short, the Canadian wheat producers must take the same prices charged elsewhere, or export no wheat.[1] Likewise, rather than sell their linen to Canada for a much lower price than before, the people of Ireland would export more to other markets. Most, if not all, of the tax would be pretty likely to fall upon the people of the taxing country; and even if this were not true, the attempt to tax other nations is a game at which all can play.

The fact that other countries than Ireland and Canada are to be reckoned with, means, also, that the general price level in Ireland would probably fall very little as a consequence of Canada's tax. Though an inflow of money into Canada due to her decreased imports might somewhat raise the level of Canada's prices, any corresponding fall in Irish prices would make Ireland a good place to buy in and would cause money to flow from third and fourth countries into Ireland, even if Canadians were prevented by their import tax from buying in Ireland. The fall of prices would, then, if it took place, be distributed over several countries and would not probably be confined to Ireland. It would be very slight, therefore, in any country. The chief effect of the redistribution of gold consequent on Canada's tax would be seen in a rise of Canadian prices and not in a fall of Irish prices.

[1] The exact effect, in the absence of any disturbing factors, would be a transference, in part, of the Irish demand for wheat to these other countries; a very slight increase, generally, of the price of wheat, and, therefore, a very slight increase of the price of the Canadian wheat still exported; and a very slight decrease in the price received by Ireland for linen.

§ 4

The Ultimate Incidence of a Revenue Duty on Exports

Duties for revenue may be levied on exports, if so desired, as well as on imports, though the present practice is to levy them on imports. Here, again, there are various possibilities as to shifting. Suppose that Canada levies a duty of ten cents a bushel on the export of wheat. The production of wheat, in Canada, for export, would be decreased, unless the tax could be shifted upon foreign consumers. If the tax could not be shifted, those wheat producers who were making but the usual return to industry (the marginal producers) would change to another line of production. If the wheat consumers of Ireland (and of other countries getting their wheat from Canada) should have an absolutely inelastic demand for wheat and could get wheat nowhere else, they would pay the higher price for wheat rather than not get the usual amount of it, and thereby would be paying the tax. In fact, if their demand were altogether inelastic, they would soon be paying more than the tax.[1] For the whole amount paid by purchasers of Canadian wheat, including the part collected by the Canadian government as export tax, goes to Canada. This means that if the wheat consumers of Ireland (and elsewhere) paid the tax in addition to what they were previously paying, there would be a flow of gold into Canada. Canadian prices would rise. Prices in Ireland would fall. Consumers in Ireland would then be paying more for wheat by the amount of the tax plus the amount of rise (due to gold flow) of net price; while the fall of Irish prices would mean cheaper linen for Canada. A bushel of

[1] Mill, *Principles of Political Economy*, Book V, Ch. IV, § 6.

wheat, even after subtraction of the tax, would buy more linen than before.

But if Ireland's demand for wheat is decidedly elastic, or can be easily satisfied from other sources of supply, then the increased price resulting from the export tax will cause an immediate falling off of Irish purchases. Let us suppose this falling off of Irish demand to be sufficient so that, even with the addition to the price, of the tax, the money obligations from Ireland to Canada are less than before. Then a balance of gold will flow from Canada to Ireland. Canadian prices will fall and prices in Ireland rise. If Canadian demand for linen is comparatively inelastic, this flow and change of prices may go to a considerable extent before Canadian demand for linen decreases and Irish demand for wheat (and other Canadian products) increases enough to bring equilibrium. At any rate, the fall of Canadian and rise of Irish prices will mean that at least a part of Canada's export tax has been shifted back upon Canada. It is conceivable that Canadian wheat will fall so far in price that, even with the tax, Ireland will get it almost as cheaply as before, while Canada will pay somewhat more for Irish linen. In that case, Canada, instead of taxing another country or other countries, would herself pay the whole tax. If we assume Canada and Ireland to have different standards of value, our conclusions will be the same.[1]

It should be clearly understood that the loss to Canada (assuming the result just discussed) does not fall, if the taxed article is produced at nearly constant cost, on the producers of that article alone. For these producers would refuse to accept lower returns and remain in the

[1] Cf. § 3 of this chapter (III of Part II).

same business when other lines were more profitable. They accept the lower prices when and because the outflow of money makes Canadian prices, generally, lower.

But the goods taxed may be produced under conditions of sharply increasing cost (*i.e.* by some producers less advantageously than by others). This may be the case with wheat, chosen as our illustration of the taxed article. On this assumption, much of the loss due to the tax may fall on the owners of wheat lands. Those producing at the margin of cultivation (those just making enough to keep them in the industry) will refuse to bear this loss, and will cease producing. Those producing under more favorable circumstances (on more fertile or better situated land) may prefer to suffer considerable loss out of what would have been their surplus or rent,[1] rather than to cease wheat raising.[2] After the tax has diminished foreign demand for Canadian wheat, the more advantageously situated Canadian wheat producers can fill this smaller demand at lower net prices than before, and still realize, because of their advantages of soil and situation, a reasonable profit. A price sufficient to keep the poorer situated producers in business, plus the tax, will not be paid by enough foreign consumers to take the previous annual supply of Canadian wheat. The price will fall. Canadian owners of wheat lands will derive a smaller return from those lands. If there is a surplus flow of gold from Canada, because of excess purchases of Irish linen over sales of Canadian wheat, the price of the wheat will fall still further, along with prices of other Canadian

[1] Cf. Bastable, *The Theory of International Trade*, p. 114.
[2] Cf. Ch. II (of Part II), § 4.

goods. But it will still be true that a special loss has fallen upon the owners of wheat lands.[1]

As in the case of the import, so in the case of the export revenue tax, we must emphasize the unlikelihood that a country will be able to shift the principal part of its tax burden upon other countries. So soon as trade with Canada becomes, because of the tax, appreciably less profitable to Ireland, the latter country is likely to trade more with other nations and communities, and less with Canada. For this reason particularly, as well as the fact that the other country, Ireland, is quite as likely as the tax-levying country, to have an elastic demand for the goods it imports, there is a reasonable probability that the people of each country will themselves have to pay, in the main, the cost of running their own government and carrying on its functions.

§ 5

Summary

Revenue tariffs we have classified as import and export tariffs. A revenue tariff, as such, is expected to secure revenue for government with the least possible effect on industry. A protective tariff is specifically intended to turn industry into channels it would otherwise not enter.

Revenue tariffs on imported goods may fall on the consumers in the tax-levying country, or may, under certain hypothetical circumstances, fall upon the country (or countries) exporting the taxed goods. If the demand for the goods in the taxing country is elastic; if the

[1] In a similar way it might be shown that, even if Canada succeeds in throwing the main burden of the tax upon Ireland, owners of Canadian wheat lands might, as a separate class, have their prosperity decreased.

demand for the goods produced in it is in other countries comparatively inelastic; and if these other countries have no other place to sell their exports and buy the goods they desire; then the tax burden may be shifted in part, or in whole, or more, upon them. But in the actual commercial world, circumstances are not likely thus to favor the tax-levying country.

In the case of tariffs on exported goods, the hypothetically possible consequences are not dissimilar. A sufficiently inelastic demand from other countries, for the taxed goods, will throw upon them a burden perhaps equal to or in excess of the tax, to the advantage of the taxing country. On the other hand, the country taxing its exports may, if the foreign demand for the taxed goods is elastic while its demand for foreign goods is inelastic, pay, itself, the entire tax. But more than this tax it would not have to pay. For if it paid this much, the people of the other country could buy from it, in terms of their goods, as cheaply as before and would, therefore, buy as eagerly as before. The general rule probably is that a government is mainly supported by those subject to it. If it were possible to support government by shifting taxes upon foreign countries, all nations would be likely to attempt it, with consequent cancellation or partial cancellation of effects.

CHAPTER IV

The Effect of a Protective Tariff on National Wealth

§ 1

The Effect of a Protective Tariff on a Country's Export Trade

In discussing the protective tariff, a natural starting point is the question of its effect on the supply of goods brought from foreign countries. A purely revenue tariff is intended to have the least possible effect on the flow of trade. A protective tariff prevents goods from coming into the "protected" country, is, in fact, particularly intended so to do, by, in effect, fining the importers. Thus, a Canadian tariff on linen of 50 cents a yard may be said to fine the importers of linen to that extent. This discourages importation and so tends to decrease, in Canada, the supply of linen. In consequence of the decreased supply of linen in Canada, the price advances. Either it must advance by about the equivalent of the tax,[1] or the linen will not be imported. This high price, however, causes a falling off in the demand for linen brought from abroad, and a shifting of this demand to the home product. If linen from Ireland was $1.00 and cannot now be sold for less than $1.50, and if Canadians can manufacture it profitably for $1.43, the sales

[1] See, however, discussion in this chapter (IV of Part II), §§ 6 and 7. Cf. Ch. III (of Part II), § 3.

of Canadian linen in Canada will increase. Canadian production is thus encouraged, by government aid, to follow a line which it otherwise would not.

This purposeful interfering with importation disturbs the previously existing equilibrium of trade conditions. Canada, for a time, continues to export wheat or other goods, though refusing to import much linen. Gold, therefore, flows out of Ireland and into Canada. This raises Canadian prices and lowers prices in Ireland.[1] The prices, therefore, of goods which Canada has exported, *e.g.* wheat, may rise so high that the Irish and other foreign demand, if it does not cease, will at least grow smaller. Or, if some of these goods, such as wheat, cannot be sold abroad even in smaller quantities for a higher price than before, because of competition from other sources of supply, then the higher money cost of production in Canada will cause production for a foreign market to decrease. In the long run, by so much as a protective tariff directly limits imports, by just so much will it indirectly injure the levying country's export trade.[2] This is true whether the different trading coun-

[1] Or, if there is a general tendency for prices to fall, as from a more rapid increase of trade than of money, Canadian prices fall less than do Irish prices; while, if there is a general tendency for prices to rise, Canadian prices rise more than Irish prices. The essential fact is, that Canadian prices rise by *comparison* with Irish prices, while Irish prices fall by *comparison* with Canadian prices. It would complicate and make harder to follow our arguments to add this explanation in each chapter throughout Parts I and II, but the reader may, with advantage, bear it in mind.

[2] Whatever goods continue to be exported until Canadian prices have appreciably risen, would more probably be goods produced under conditions of increasing cost and goods in which competition from other sources of supply would not prevent Canadian sales even at somewhat higher prices than before. If all goods were produced under conditions of absolutely constant cost and could be secured equally well from other sources, if society were in a state of economic equilibrium, and if there were no economic friction, then Canadian prices could change only infinitesimally as a result of money inflow caused by the tariff. For

tries have a common standard of value, or unrelated monetary systems, or no monetary systems. The Irish manufacturers of linen will be forced by the more direct action of the tariff to seek markets elsewhere than in Canada. The Irish consumers of wheat will soon make use of the alternative, in case an inflow of gold into Canada raises wheat prices there (or, if the currencies are unrelated, in case more Irish money than before is required to buy a given amount of Canadian money), of buying their wheat elsewhere. The result, to Canada, is the loss of what had been a profitable trade.

The establishment of a few protected industries may serve to discourage or cripple many unprotected industries, for it means higher money prices and a consequent disadvantage to all lines of export trade. Among other things, the services of a country's mercantile marine may be regarded as exports of that country, in so far as these services are rendered to and are paid for by, the people of other countries. This, like other parts of a country's export trade, is affected unfavorably if the country follows the protective tariff policy. Besides the injurious effect resulting from the general rise of money prices in the protected country, on the exportation of any of that country's products, there is the special discouragement which results if the production of these exportable goods requires the use of machinery or raw material directly raised in price by a tariff upon it.

the least tendency to rise of costs would at once turn all producers away from lines of production for a foreign market in which prices could not be made to rise equally fast, and prices in foreign markets, of the goods in question, would not rise if the goods could be secured in larger quantity from other sources, at no greater cost than before. A protective tariff which prevented imports would immediately stop exports. Under existing conditions, exports would be correspondingly decreased by an import tariff only after an appreciable lapse of time.

A high export tariff, intended to prevent exports, would eventually, like a protective import duty, decrease both exports and imports, but the export duty would decrease exports first. The diminution of exports would mean a temporary net outflow of specie from the duty-levying country. Finally, prices in that country would be so low that its people would more largely supply themselves with desired goods and would buy less goods abroad.[1] It is not essential, however, that we should consider at length the effects of high export duties, because, while there have been examples of such, they have been much less common than high import duties, and are, at present, almost unknown.

§ 2

How a Protective Tariff Sets Up Unprofitable Industries at the General Expense

The fairly direct and practically immediate effect of a protective tariff is to raise the prices of protected goods by not more than the amount of the tariff. As we have seen, if Canada levies a 50 cents tax per yard on linen, to protect Canadian linen production, an almost immediate result is that Canadian linen manufacturers can charge more for linen than otherwise they would be able to. For the 50 cents tax has, as a first consequence,[2] that linen from Ireland must sell for $1.50 instead of $1 a yard. The tax, therefore, makes it possible for Canadian linen producers to charge prices (except as hindered

[1] With a combination of high protection on all importable goods, and high restrictive export taxes, the prices of protected goods would rise because of their greater scarcity, but there would be no rise of other prices due to inflow of gold nor any fall of prices due to its outflow.

[2] See, however, §§ 6 and 7 of this chapter (IV of Part II).

by competition with each other) higher in about the same proportion. Without the tariff protection, Canadian linen producers must sell for $1 a yard or less, if they would have the home market. If all of them were willing to do this, if employing manufacturers and their employees were willing to manufacture linen for an average return of $14 a week, or less, they could carry on a large business and perhaps almost monopolize the home market, even without a tariff. But the tariff, by compelling a rise in the imported linen to $1.50, enables the now protected Canadians to charge (say) $1.43, and still be sure of most of the Canadian market. Under Schedule K of the late Payne-Aldrich tariff law, it was found by the Tariff Board that an average duty of 184 per cent levied by the United States on 16 varieties of woolen fabrics, resulted in an average price for the home-produced goods 67 per cent higher than the price of like goods abroad.[1] The tariff has in this regard about the same effect as natural barriers and resulting high cost of transportation. Either natural barriers or the artificial barriers of a protective tariff act tend to make more difficult to get and more expensive in one country, the products of another, and, therefore, to enable the home producer to charge higher prices. The late Professor William Graham Sumner of Yale college called attention to the fact that, after the St. Gothard tunnel was opened, the people of southern Germany petitioned for higher taxes on Italian products so as to offset the greater cheapness made possible by the tunnel.[2]

The protective tariff on linen makes Canadian manu-

[1] Report of the Tariff Board on Schedule K of the Tariff Law, 1912, Vol. I, Part I, p. 14.

[2] *Protectionism*, New York (Holt), 1885, pp. 75, 76.

facture of the linen much more profitable than it would else be, since it enables the Canadian manufacturers to charge much higher prices. It therefore diverts a certain amount of Canadian labor and capital, from the production of wheat and from other lines, into the production of linen. As has already been suggested, if Canadians want to go into the linen making industry and take what the industry will yield them in open competition, they can do so without the tariff. But though they can, it is obvious that they will not. For, by our familiar assumption, a week's labor in Canada will produce 20 bushels of wheat, and will therefore earn, if wheat sells for $1 a bushel, $20. A week's labor will produce, however, but 14 yards of linen. If linen is but $1 a yard or less, the week's earnings are but $14. Without the tariff, therefore, Canadians can go into linen production if they want to, and they may be able to make a fair living at it; but they will not want to, for the reason that they can make very considerably more in another line, viz. the production of wheat. The tariff, by enabling them to get $1.43 a yard or more, though at the expense of 43 cents a yard to every Canadian purchaser of linen, makes the business as profitable as the other, or more so, and induces some Canadians to take it up. A protective tariff, therefore, causes the development of an industry in a location or country where it would not otherwise exist, by making possible higher prices and correspondingly higher returns to that industry, and in that way alone. Under free trade conditions, the location of various industries within different countries is determined, as we have seen, by the principle of relative efficiency in production. The greatest profitable degree of geographical specialization

results. Under protection, this specialization is purposely interfered with, and what industries shall be developed and maintained in the protective tariff country depends, in large part, on governmental favor.

The general principle of free trade follows directly from what we have learned of the benefits of international trade. Geographical specialization, so far as it develops naturally under free trade conditions, yields a larger total product than local or national self-sufficiency; and of this larger product the several trading nations secure each a share. Protection prevents this specialization, makes impossible the securing of the larger total product, and, therefore, makes the protected country in so far poorer.

To illustrate, consider again Canada's 50 cents protective duty on linen. Before the laying of this duty, the average Canadian could produce, in a week, 20 bushels of wheat, worth $20, and get, by sale and purchase, 20 yards of linen in return.[1] With two weeks of work, he could secure 20 bushels p us 20 yards. After the protective tax is laid, he is practically compelled to buy linen in Canada at $1.43 a yard. He can still produce 20 bushels of wheat in a week and get his $20, but for the $20 he can get only 14 yards of linen. Two weeks of work will net him 20 bushels plus 14 yards, which is 6 yards less [2] than if the tariff did not exist.

Neither can it be said that the Canadians who are tempted into linen manufacturing gain any more than, or as much as, the wheat producers lose. For we have seen that those who care to manufacture linen, employers and employees, can have all the business they want and all

[1] Minus cost of transportation, etc.
[2] Ignoring cost of transportation, etc.

the employment they want, without the tariff, if they will sell the linen at a low enough price, say $1 or less a yard, and take what the business will earn, as wages and profits, viz. about $14 a week (or perhaps, if they wish to keep linen from Ireland entirely out and monopolize the market, somewhat less). If the tariff enables them to get $1.43 a yard instead of $1, the best that can possibly be said for the tariff is that it gives the linen makers 43 cents for every 43 cents it takes away from the wheat raisers or others who buy the linen. If there is any way by which protection can give 43 cents to any protected interest, without taking at least 43 cents away from some person or persons buying the taxed article, the exact manner in which protection does this should be carefully set forth by defenders of the policy. The late Professor Sumner said:[1] "If Protection is anything else than mutual tribute, then it is magic."

But protection does worse than take from one person in the protectionist country exactly what it gives to another. In our illustration, protection does worse than take from the Canadian wheat producers exactly what it gives to the Canadian linen manufacturers. It takes *more* from the wheat raisers than it gives to those who become linen producers. The wheat raisers have to pay 43 cents extra on every yard bought, in order that the linen makers may receive $1.43 for what would otherwise be $1 worth of linen, or $20 a week in an occupation that would otherwise yield only $14. But, by hypothesis, they could earn $20 anyhow, if they would remain in the business of wheat production. Therefore, the people who do engage in wheat production have to lose $6 on 14 yards of linen in order that others may

[1] *Protectionism*, p. 160.

secure $20 a week at linen manufacturing, when these others could secure $20 a week in wheat production without taxing any one else. It would seem certain, then, that the taxed class loses *more* than the protected class gains, if indeed the latter class gains anything at all. What the situation amounts to, in our illustration, is that the people in one industry are taxed to encourage and keep going another industry which pays so ill that no one in the country would go into it if it were not favored by this policy. This is what Professor Sumner had in mind when he said that, by the whole logic of the protectionist system, the industries to be aided are "the industries which do not pay," [1] and that the process, so called, of "creating a new industry" means simply the taking of one industry and setting it "as a parasite to live upon another." [2]

Various facts brought out by the investigations of the Tariff Board would seem to show that the establishment in the United States by the protective tariff, of the wool manufacturing industry, has thus been the establishment of a parasitic industry at the general expense. We have already seen [3] that many woolen goods have been greatly raised in price because of the exclusion, by protection, of foreign goods. The home producers must receive these higher prices in order that they may receive, as a whole, as large returns as they might otherwise have secured in unprotected lines; in particular, they must charge these prices in order that the wages paid to employees may be high enough to keep the latter in the wool manufacturing business, and, therefore, that the wages may be as high as can be got in other employments.

[1] *Protectionism*, p. 48. [2] *Ibid.*, p. 45.
[3] § 2 of this chapter (IV of Part II).

Since wages in general in the United States are high and since American woolen manufacturing concerns seem to have no special advantages either in equipment or in efficiency of labor over their foreign rivals,[1] it follows that the cost per yard of woolen cloth made in this country is high. According to the estimates of the Tariff Board,[2] the cost of turning wool into tops is about 80 per cent more here than in England, of producing yarn from the tops about 100 per cent more, and of manufacturing the yarn into cloth from 66 to 170 per cent more, according to the kind of fabric in question. The effect of protecting the woolen manufacturing industry in the United States has been, therefore, that the consumers, that is, the Americans engaged in all other lines of industry, have had to pay much higher prices for woolen goods than would otherwise be necessary, merely that those engaged in the woolen industries might receive as high profits and wages as they could get even without protection in other lines of activity. Were it not for protection they would have been engaged in these other lines of activity, perhaps largely in the production of articles for export, in transportation, and in various commercial pursuits. Protection has drawn them out of these lines at a very considerable loss to the rest of the nation and with no appreciable permanent gain to them, if indeed they have not eventually shared in the general loss. It would appear certain, therefore, that in this instance, as in general, protection has imposed a cost upon those in unprotected industries, greater than any gain which it can be asserted to have brought to those in the lines protected.

[1] Report of the Tariff Board on Schedule K of the Tariff Law, Vol. I, Part I, p. 16.

[2] *Ibid.*, pp. 16, 17.

§ 3

The Effect of Protection on the Money Prices of Protected Goods and on the Money Prices of Unprotected Goods

For a brief time after a protective tariff is levied on imports, the protected country, *e.g.* Canada, will export about as much as if trade were free;[1] but such a flow of exports will not be continuous. When, as a result of the tariff, Canada diminishes its importations, there will be, as has been sufficiently explained, a net inflow of gold. Canadian prices rise as compared to foreign prices, and, if the amount of trade and other factors remain the same, rise in exact proportion to the increase of money. If, for any reason, prices do not at once become higher than before relatively to prices abroad, the gold inflow will continue until they do. And when, because of the increase of money, prices rise, this rise of prices will affect protected and unprotected goods alike. The increase of money, with no corresponding increase of other wealth, must mean rise of prices of other wealth, else, with the greater amount of money, the demand for this wealth would exceed the supply. And as far as the increase of money *by itself* is concerned, it would affect all prices in Canada to the same extent. The primary effect, then, of the assumed tariff, is to raise the price of linen, in Canada, from $1 to $1.43 a yard, while not affecting the price of wheat. The secondary effect results from the inflow of money.[2]

[1] See § 1 (and footnotes) of this chapter (IV of Part II).

[2] Cf. *The Purchasing Power of Money*, by Irving Fisher assisted by Harry G. Brown, New York (Macmillan), 1911, p. 94. In justification of the above mode of presentation, it may be said that the drawing of labor into the protected industry (linen production), cannot permanently raise the prices of unprotected

Suppose money in Canada increases, because of the tariff, by 10 per cent. Then the price of Canadian wheat, assuming it to be produced at approximately constant cost per bushel [1] regardless of whether somewhat less or somewhat more is produced, would tend to rise from $1 to $1.10 a bushel; [2] and the price of linen would rise, in addition to the rise directly occasioned by the tariff, from $1.43 to $1.57 a yard, *i.e.* in the same ratio as the price of wheat. How largely the prices of unprotected goods produced in the United States have thus been made higher by this indirect action of the tariff, it is impossible to say, but that the prices of many such goods have been so raised to some extent, we may reasonably conclude.

Here we are brought again, by a somewhat different route, to the conclusion that a protective tariff tends towards national poverty. For, while the increased quantity of money tends to raise all money incomes in the same ratio that it raises the prices of goods, and so tends to leave people in the same relative position; yet the original and special rise in the prices of the protected

goods, *e.g.* wheat, by decreasing the supply of these goods, unless there is this inflow of specie. For no one, by our hypothesis, will leave the production of wheat at $1 a bushel unless he can get $1.43 a yard for linen, and no one would leave the production of wheat at any *higher* price than $1 unless he could secure *more* than $1.43 for the cloth. But a rise of wheat above $1 a bushel and of cloth above $1.43 and of other things in proportion, could not take place without a changed relation between currency and goods, without, that is, in this case, an inflow of money metal. A continued foreign demand for the now less produced wheat might cause a rapid readjustment, but could cause such readjustment only through purchases of the wheat (or other Canadian goods), and, therefore, only by influencing the flow of gold.

[1] At the margin of cultivation.

[2] We are supposing that the inflow of money takes place to such an extent as to have this result, either because Canada continues to export wheat until the price of Canadian wheat has thus risen 10 per cent, or because Canadian exports of other goods, perhaps goods less subject to the competition of other sources of supply, do not at once cease.

goods is due solely to the greater scarcity of those goods and the greater cost of their production, and is not counterbalanced by any increase of money incomes. There is here a net loss. The country is poorer because of the tax.

If Canada has an inconvertible paper money, then the protective tariff will have the same primary effect but a different secondary effect. It will raise the price of linen from $1 to $1.43 without changing other prices. There will be no increase of money due to a surplus of exports. Linen will rise in price because of the greater cost of production required and the greater scarcity of it in relation to other goods and to money. But wheat and, in general, goods other than linen will not rise in price.[1] Instead of a general rise in money prices bringing eventual equilibrium by discouraging purchase of Canadian goods from abroad, this equilibrium will be brought by a change in the relative values of currency, of such a sort that it requires more foreign money to purchase a given amount of exchange on Canada or to purchase the gold equivalent of a given amount of Canadian money.[2]

As we have already seen,[3] a high export tariff would act in a way directly contrary to the operation of protection, on the flow of specie and on money prices in the tax-levying country. While protection causes an inflow of specie and a rise of money prices, high export duties would cause an outflow of specie and a fall of money prices. But in its effect on national prosperity, a high export tariff would not require to be thus sharply dis-

[1] Assuming production under constant cost.
[2] See Part I, Ch. VI, §§ 6, 7, 8, 9.
[3] § 1 of this chapter (IV of Part II).

tinguished from protection. It would, as protection does, turn industry out of its natural channels into less productive channels. The difference is that, while the method of protection involves a selection of industries to be established at the general expense, a high export tariff would secure the establishment of new and less profitable industries, indirectly, by preventing production for export in the industries most profitable. Export restrictions have been applied, in the past, along with restrictions on imports, to divert labor from a relatively large production of raw materials, into the manufacture of those materials. England's statutory law, from the time of Edward III through many generations, forbade the export of sheep or raw wool, while aiming to prevent importation of woolen cloth.[1] The desire was to stimulate the making of woolen cloth in England.

It is worth pointing out that a high tariff levied by a country upon its exports, affects that country as to money prices and general prosperity, in the same way as high import duties levied on the same articles of its production by all the countries with which it trades. A high export duty levied by Canada on wheat, would have the same effect as high import duties on this wheat levied by other countries; it is indeed equivalent to a combination of all possible consuming countries to levy such an import duty against Canada. Similarly, a high import tax, *i.e.* a "protective tariff," is equivalent to high export duties levied by not one only but all other countries from which the taxed goods might come.

[1] Levi, *The History of British Commerce*, second edition, London (John Murray), 1880, pp. 22, 23, footnote; also Day, *A History of Commerce*, New York (Longmans, Green & Co.), 1907, p. 225.

§ 4

Protection to Industries in which Large Scale Production is Advantageous

When a protected industry is one of those in which large scale production is advantageous, there are, as regards the carrying on of the industry in the protectionist country, two possibilities. The first possibility is that the encouragement and further extension of home production in that industry will mean home production on a larger scale than formerly, *i.e.* few, if any, more plants, but larger product turned out by each plant. If the tariff has this effect, it means cheaper home production than before, and, if the improvement is great enough, cheaper production at home than abroad.[1]

The second possibility is that the size of establishment having the greatest efficiency is, on the average, already

[1] There is another conceivable case, which may properly be mentioned at this point, where protection might really increase national wealth. Suppose a country to be carrying on only one or a few industries and to be the only country where these industries are carried on. Those engaged in them, however, we shall assume to be subject to competition from others in their own country. In such a case, a protective tariff which should divert labor into a line unprofitable without such aid, might so restrict the supply of the goods of which the country had a monopoly, as to raise very greatly the prices of those goods abroad and so increase the country's prosperity at the expense of foreigners. But unless the country had a monopoly of the industries from which labor is turned, it could not appreciably raise the prices of the goods by so doing, for the competition of other sources of supply would keep the prices down. Furthermore, unless most of the industries in which the protectionist country is engaged are industries in which it has a monopoly, the establishment of new industries by protection will draw from other lines as well as from the monopoly lines, and will therefore not so much decrease the supply of goods in the monopoly lines and not so much raise their prices. If a country has a monopoly of only one or a few lines and those not important, *and the situation is almost certain to be no more favorable than this to the protectionist country*, then the effect of protection will so little decrease the supplies of the monopolized goods as to have slight appreciable effect on their prices. In short, as things are in the actual civilized world, the circumstances under which protection can be reasonably expected to increase national wealth probably nowhere exist.

reached before protection is granted, or, if it is not, that lack of a tariff is not the difficulty. On this assumption, the imposition of a tariff would very probably result in an increase of the number of plants engaged in the industry within the protectionist country, but not in any saving through more efficient plants. By hypothesis, increased size of plants, beyond that already reached, is no longer a saving, or will not be brought about by protection. If the industry was being carried on within the country to any appreciable extent, before the adoption of a protective policy, a change in the average size of establishments, as a result of that policy, cannot be regarded as assured. In any case, the development of efficiency resulting from larger scale production must, if it is to yield any net gain to the nation in question, be so great that the desired goods can be secured at home more cheaply than they could otherwise be imported. Large scale production in other countries and purchase of the goods from them may, in practice, better secure the national welfare.

§ 5

Protection to Industries of Increasing Cost

When commodities for home consumption must be produced within a country under conditions of sharply increasing cost and, because of limited resources, under disadvantageous conditions at the margin of production, the opportunity to import these commodities from abroad is, perhaps, particularly to be desired. The policy of protection to the home production of such goods causes, in the protectionist country, production at an increasingly greater cost according as the protection succeeds in its object. Thus, Germany's policy of protection

to agriculture, favored by the owners of agricultural land, undoubtedly means the production of food at a progressively higher cost in proportion as the protection is effective. A high tariff protective to English agriculture would probably raise the cost of food so high as to starve to death millions of the English people. An analogous consequence follows from protection to manufactures when the tariff wall safeguards the more inefficient plants against loss from foreign competition, compelling consumers to pay prices for the goods desired, which will remunerate the inefficient as well as the efficient home producers. Protection, then, forces consumers to get many of the goods they require, at greater cost, either because the production cost at home is uniformly greater, or because protection compels the use of the poorer soils, the poorer mines, the poorer sites, or because it compels the giving of patronage to establishments which are relatively inefficient.

But may it not be desirable, in case a country has a large export trade in goods produced under conditions of increasing cost, *e.g.* wheat, to establish manufactures by protection in order to draw capital and labor away from the poorer or marginal lands? Even here the protectionist policy involves a loss, though perhaps not so great a loss. It is only if and because even the poorest lands in use, following the terms of our illustration, yield 20 bushels or $20 a week in Canada compared with a possible 14 yards or $14 in the unprotected linen industry, that protection is required to establish the latter.[1] If it were more profitable than agriculture, even than agriculture on the poorer lands, it would be established without protection. If it requires protection, it is a less

[1] Cf. what is said regarding protection of this sort, in Ch. V (of Part II), § 5.

profitable business from the standpoint of the whole Canadian people, than agriculture on the best available land and, therefore, than agriculture on the poorest land actually used.

§ 6

Effect of a Country's Protective Tariff System on the Cost to it of Unprotected Goods Got from Other Countries

A protective policy, however, may conceivably give to the nation which enforces it, indirect advantages compensating in part or in whole for the losses incurred. Though the conditions under which such advantages would be at all comparable with the losses, could seldom if ever occur in practice, it is perhaps worth while to show what these conditions are. If Canada levies a high tariff on linen from Ireland, and, as a result, following the flow of gold to Canada, Canadian prices rise and Irish prices fall, then other goods, *e.g.* laces, silks, etc., may be produced in Ireland more cheaply than before. In practice, the effect would be more largely a rise of Canadian than a fall of Irish prices; for the fall of prices due to outflow of gold must eventually be distributed over many countries and would be slight in each, while the rise of prices would be felt in Canada alone. But, at any rate, since Canadians receive more for their wheat, the silk, etc., from Ireland (or other countries) can be better afforded than formerly.[1] If, therefore, the result of protection is that Canada receives more for her exports, and, while shutting out linen, gets certain other

[1] This point is stated in relation to the protective policy by Taussig, *Principles of Economics*, New York (Macmillan), 1911, Vol. I, p. 525. The principle is exactly the same as was shown to apply to import revenue duties by Mill, *Principles of Political Economy*, Book V, Ch. IV, § 6, and by Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 118. Cf. also *supra*, Ch. III (of Part II), § 3.

foreign goods for a less price than formerly, so getting, for example, more silk than previously for a given amount of wheat, it is not entirely certain that Canada has lost greatly by her tariff policy.

Needless to say, this is not an argument for protection that would win it many votes. For a political campaign speaker to tell the voters of Canada that a proposed tariff will hinder a profitable trade and prevent their getting linen cheaply from Ireland, but that in consequence they may be able to buy silk somewhat more cheaply than before in terms of wheat, would not be likely to arouse any great enthusiasm. A more probable result would be a demand from silk manufacturers in Canada, or from would-be silk manufacturers, that they also receive protection. The rising money cost of production in Canada, and the tendency to falling cost in Ireland, would imperil the Canadians' home market. Especially would silk manufacturers in Canada be injured, if they had to use machinery or raw material directly raised in price by the tariff system. But if the silk manufacturing and other lines of production should also be protected, Canada would no longer gain from the protection of linen the indirect benefit suggested. The higher money incomes received in Canada are no advantage if they must be spent *in Canada*, where prices, counting prices of protected goods, have been raised even more by the tariff, than have money incomes. A consistently protectionist country can hope to realize this indirect gain from protection, only on goods not producible at home and, therefore, not protected. And the direct loss in higher prices of protected goods may be very great indeed. As we have already seen,[1] many kinds

[1] § 2 of this chapter (IV of Part II).

of woolen goods have been costing Americans some 60 to 70 per cent more because of the tariff.

In the actual commercial world, Canada is the less likely to realize much, at Ireland's expense (or at the expense of other countries), through this indirect action of the tariff, because Ireland (or any other country) has the alternative of trading elsewhere, and is not obliged to offer reluctant Canada bargains, in order to force a trade, except as Canada may have a substantial monopoly of the production of certain goods.[1] Canadians can get little, if any, more for wheat or other exported goods than before, else Ireland will refuse to buy. And rather than accept a low price for silk and other goods, Ireland may sell them elsewhere than in Canada. It is the more unlikely, therefore, that Canada will gain, thus indirectly, as much as she loses directly, through the tariff.

In so far as a protective policy results in a larger quantity of money and higher money prices in the protectionist country, it is likely to lead to a demand for a progressively higher and higher tariff. Assume, as before, a 50 cents duty per yard levied by Canada on linen. This at first makes linen cloth from Ireland $1.50, while Canadian cloth can sell for $1.43 and still yield as large a money return as the production of Canadian wheat. This enables a Canadian linen manufacturer to undersell his rival of Ireland by 7 cents a yard. But the flow of gold into Canada, resulting from the tariff, will raise, among other prices, the money cost of

[1] Even without a monopoly, if Canada supplied so much of the wheat used in Ireland and other countries that for them to substitute wheat from other sources would lower the margin of cultivation and raise wheat prices, Canada could continue to sell some wheat at slightly higher prices than before the tariff was laid. There would remain, however, the probably much more important effect of the tariff, for Canada, in the direct loss caused.

producing linen. In Ireland, on the contrary, the tendency will be towards a lower cost. Soon, therefore, the Canadian manufacturer may find that $1.43 is not a high enough price, while the linen manufacturer of Ireland, even with the tax, may sell for less than $1.50. Unless the tariff is further increased, some linen will soon be secured from Ireland; there will no longer be a net flow of gold into Canada; and Canadian prices will no longer rise as compared with Irish prices. Or, as we have seen, the same result is reached by Canadian purchase of other Irish goods. Suppose, however, that the Canadian tariff is progressively raised so as to maintain the 7 cent margin, and is raised on other Irish goods as well, and suppose that Ireland's demand for Canadian goods is not checked until money in Canada is $\frac{10}{9}$ of its former amount and in Ireland slightly less than before. Then, assuming conditions of approximately constant cost, Canadian wheat will sell for about $1.10 a bushel and Canadian linen for $1.57, while linen made in Ireland will sell, not counting the tariff, for slightly less than $1 (not much less, since any considerable fall of prices in Ireland would cause an inflow of specie from Germany, France, and elsewhere, so distributing over many countries the effect of the outflow of money to Canada). To give Canadian producers a 7 cents margin, the tariff will now have to be so high that linen made in Ireland can sell, in Canada, for not less than $1.64. Since this linen sells, without the tariff, for $1 or less, the tariff will have to be $0.64 a yard [1] instead of the original $0.50. Even a tariff to "equalize the cost of production" would need, after this change in relative amounts of money, to be $0.57 instead of $0.43.

[1] We are here neglecting cost of transportation.

But it must not be supposed that continuous extension and increase of its tariff wall can raise prices in a country without limit. Even if, as prices in Canada rise and in Ireland, or elsewhere, fall, protection is given to each article subject to foreign competition, which can be made in Canada, and even if this protection is progressively raised so as to prevent any purchase abroad by Canadians as their money incomes increase, — in short, even if all importation of goods is effectively prohibited, the rise of prices in Canada will nevertheless eventually reach a limit. For, sooner or later, Canadian prices will get so high that no goods whatever will be purchased in Canada by people in foreign countries.

All these conclusions are the same, except as to nominal prices, if we suppose Canada's currency system unrelated to those of other countries. A high tariff would not then raise Canadian money prices, but it would change the relative value of Canadian and other monetary standards so as to make purchase of Canadian goods more expensive to other countries in terms of their own money. This fact has been frequently pointed out in preceding pages. Here it is to be emphasized that it means cheaper purchase of foreign goods in terms of Canadian goods. A smaller amount of Canadian money than before will buy drafts on foreign countries for more foreign money and, therefore, goods than before, or will buy the gold equivalent of more foreign money and goods than before. Hence, Canadians are tempted, unless prevented by a tariff, to buy foreign goods which they did not previously buy and even, unless the tariff protection is increased, to buy goods on which the protection seemed, at first, adequate (though not excessive).

§ 7

A Tariff "Equal to the Difference in Cost of Production at Home and Abroad, together with a Reasonable Profit"

In view of these facts, together with the fact that the same kinds of goods are produced simultaneously at different costs, the proposition, prominently put forth in recent politics, to establish a tariff which shall "equal the difference in the cost of production at home and abroad, together with a reasonable profit," [1] is chimerical. There is no fixed difference, independent of the tariff, in the home and foreign costs of production. For the difference in these costs is dependent, to some degree, on the relative levels of prices at home and abroad, which are affected by the flow of gold, which is, in turn, at least in some degree affected by the tariff. The tariff itself, that is, helps to cause the very difference in cost of production which is set forth as a justification for it. As we have seen in our illustration, a tax of 43 to 50 cents per yard may be, at the start, the amount necessary to equalize cost of production in the protectionist and other countries, and yield a "reasonable" profit; yet later, if a protective tariff policy has been followed, a higher tax than 43 cents may seem equally necessary to equalize conditions, and this just because the tariff itself has widened the cost difference. In addition, the cost of production may be directly increased by tariff duties on the machinery and raw materials of industry.

Again, "cost of production," if not further defined, may be taken to mean marginal cost, average cost, or cost under the most favorable circumstances. Is a tariff

[1] Republican party platform of 1908, *Republican Campaign Text-Book*, 1908, p. 462.

which equals the difference in cost of production at home and abroad, to be high enough adequately to protect the marginal producer, or the average producer, or only the producer best situated? In manufacturing, is it to protect the struggling factory hardly able to maintain itself, or only the most efficient? If protection is to be given to the producer under greatest difficulties and to the most inefficient producer, the burden on consumers may be very great. Furthermore, inefficiency is in some degree encouraged, instead of being weeded out. The recent Tariff Board found in the cotton manufacturing industry of the United States not only modern establishments, but also some of low efficiency and considerable antiquity.[1] Some 60-year old spinning and weaving machinery was still in use. A system which protects producers the more highly the less efficient they are, though promulgated as a "scientific" solution of the tariff problem, would seem, in view of these considerations, very far from being such a solution. If, on the other hand, the protection is intended only to equalize conditions for the average or best producers, as opposed to foreign competitors, there is still a loss to consumers, and there is also the objection, from the protectionist point of view, that such a policy would leave without adequate protection the very producers most needing help.

§ 8

Relative Advantages in the World's Commerce of Countries having High and Countries having Low or No Tariffs

Before closing our discussion of protective tariffs in relation to national prosperity, there is one general truth

[1] Report of the Tariff Board on Schedule I of the Tariff Law, Vol. 2, p. 416.

to which we may properly give special emphasis. This truth is that, among a number of trading countries, those with low or with no tariff restrictions have the least to lose.[1] If, for example, Great Britain alone adheres to the principles of free trade, while all other nations maintain high import duties (or high export duties, or both), then Great Britain's position in trade is relatively the best. In the first place, purchasers in all other countries will buy of Great Britain rather than of countries where the large quantity of money due to protection (or where high export duties, if such were common) makes prices of goods exported by them high; and this very turning of the demand to Great Britain will enable British producers to get, for what goods they are able, despite foreign protective tariffs, to export, higher prices than if their rivals in selling each special kind of goods in a given market, were similarly untrammelled. In the second place, sellers of goods produced in all other countries, being unable to sell so easily and profitably to countries maintaining protective tariffs against them (or to countries, if there were any such, whose export tariffs make their home prices low), will be the more anxious to sell all they can in Great Britain; and they will make even lower prices in selling to Great Britain than otherwise they would, because it is so difficult to secure a market and to sell at a profit, anywhere else.

Protectionist writers have sometimes hinted that free trade, or tariff for revenue only, might be very good if all nations practised it, but that so long as other countries practise protection, we must do so in self-defence. The truth is that the best possible way for a nation to adapt itself to the conditions caused by the bad policy

[1] Cf. Bastable, *The Theory of International Trade*, p. 122.

(*e.g.* protective tariffs) of the others, is to avoid imitating that bad policy. Then it has an advantage over these others and gains trade and profit which they cannot.[1]

It does not follow that Great Britain is better off because other nations have high duties. So far as other countries become self-sufficient by means of their tariffs, Great Britain also may be forced to be more self-sufficient than would otherwise be necessary. But so far as some trade still persists, despite these interferences, Great Britain has an advantage in getting it and in gaining from it, over all the others. Each country's tariff lessens Great Britain's trade with that country and so tends to decrease the wealth of both Great Britain and the country levying the tariff. But each country's tariff hurts that country as a competitor of Great Britain in trade with third and fourth countries, and so gives Great Britain an advantage over it.

Largely, we may reasonably suppose, through the operation of these principles, the foreign commerce of the United Kingdom long since reached a volume which that of none of her protectionist rivals has yet been able to attain. Not only do the people of the British Isles trade extensively with the English-speaking peoples of their own colonies and with the United States, but their commerce is the greatest with, for example, most of the South American republics,[2] as well as with many other countries. Their ships plough the remotest seas and carry the products of English mines and factories to parts of the earth almost unknown to American exporters. Likewise, from all parts of the world come the raw materials,

[1] Cf. Sumner, *Protectionism*, New York (Holt), 1885, pp. 138, 139.

[2] See comparative statistics in any of the recent annual reports on *Commercial Relations of the United States.*

the food supplies and other goods, which the British people require and which they can buy more cheaply abroad than they can produce at home. Raw cotton they get from the United States, from Egypt, from India, to be reshipped to South America and elsewhere as cotton fabrics, or to be made up into wearing apparel for themselves. Wheat they secure from the United States, Canada, Argentina, and other countries, and they secure it, we must conclude, all the more cheaply because some of the European nations restrict its importation by means of protective duties. Wool is available particularly in South America and in Australia. In short, the whole world is a British market so far as the British people can make it so, and from countries near and far they draw the riches which other nations, by foolish tariff restrictions, shut away.

§ 9

Summary

The general conclusion of this chapter is that a protective tariff reduces, and may reduce considerably, the total wealth of the country which adopts it. By as much as it hinders imports, by so much it must, in the long run, interfere with the development of an export trade. It diverts the productive force of a country from lines in which it is relatively effective to lines in which its effectiveness is less. Even if those who are protected gain some benefit from the policy, they gain less than others in the country lose. Protection tends to raise all money prices, including money incomes, in the protected country. But there is a special rise of price of protected goods, not balanced by any rise of money incomes.

Therefore, prices of goods rise, on the average, more than money incomes, and the general prosperity is reduced. It is conceivable, but improbable, that protection of some industries may result in larger establishments within the protectionist country and a gain in efficiency enough to make home production as cheap as foreign. When an industry of increasing expense (diminishing returns) is protected, the injurious effects on national prosperity are the greater, the more the tariff extends the industry. Protection may give to a country indirect advantages in the form of better rates of interchange on other, unprotected goods, but this gain is not likely to be great, since other countries have the option of trading elsewhere than with the protectionist country. If such a gain were likely to be realized, there would probably be a demand, in the protectionist country, for the taxation of imports of these other goods in so far as they could be produced at home, and so a partial prevention of the gain.

If protection is applied moderately but upon many goods, so that the scale of prices in the protectionist country rises compared with others, even some of the protected goods may come to be imported to some extent from countries whose prices have not thus been artificially raised. If so, there is likely to be a demand for further protection. The proposition to levy a tariff which shall be equal to the difference in cost of production in the protected country and abroad, overlooks the fact that this difference in cost is, to some extent, a consequence of high protection. It overlooks, also, the fact that cost is not the same in all establishments or on all sites, within a single country.

Despite the frequent claim of some protectionists that

any one country must adopt a protective tariff system because others do, the truth is that a country which, among others having high import duties (or export duties or both), maintains free trade or only low tariffs, has an advantage, because of this policy, over all the others.

CHAPTER V

The Effects of Protection on the Distribution of National Wealth among Economic Classes and Territorial Sections

§ 1

Effect of Protection on the Rate of Interest and Therefore on Wages

In discussing the effects of a protective tariff on the distribution of wealth and income among economic classes, it is important that we have in mind some idea of the laws according to which wealth and income are divided. The benefits, or the wealth and income, resulting from production are said to be divided among capitalists, laborers, and land owners. Capitalists receive interest; laborers receive wages; land owners receive rent.

Interest arises, in large part, from the surplus productivity of indirect or roundabout production, over direct.[1] Men can produce consumers' wealth and income by applying labor with the aid of existing machinery, or they can devote time to increasing the amount of machinery in order to get, later, larger results. The second method is more indirect or roundabout. It

[1] It is not claimed that the theory of interest as here briefly stated is complete, or anything but a working theory sufficient, perhaps, for the requirements of this chapter. The subject of interest is so interwoven with other economics, that it cannot be satisfactorily treated in a few paragraphs. The critical reader is referred to the writer's article in the *Quarterly Journal of Economics*, August, 1913, entitled "The Marginal Productivity *versus* the Impatience Theory of Interest," and to a later article in *The American Economic Review*, June, 1914, on "The Discount *versus* the Cost of Production Theory of Capital Valuation."

yields, in general,[1] a surplus product over what can be secured by the more direct method. But roundabout production, *i.e.* production by first making tools, machinery, etc., yields a smaller surplus the further it is extended. The more tools, machinery, and other capital equipment we have (after a certain point is reached), the less desirable is it further to increase this equipment. The gain or surplus from so doing becomes smaller and smaller, yet for a long time, perhaps indefinitely, remains a gain.

But thus to extend the roundaboutness of production requires a supply of goods for the present maintenance of those occupied in constructing the necessary capital, since they, being engaged in roundabout production, cannot secure this present maintenance from their present labor. Possession of goods which may serve as means of maintenance for laborers during the roundabout production process, enables production to be carried on thus indirectly with the consequent larger product. For this reason, a surplus in future goods will be paid for a given amount of present goods; $100 to-day may buy $105 next year, for $100 to-day makes it possible to turn away from production for immediate needs and to produce, by the usually larger yielding indirect method, for the future. For the use of the present consumable goods which make indirect production possible, a premium will be paid by those desiring control of the present goods; and this premium will depend on the gain which indirect production yields. The possessors of command over present goods, on the other hand, will not trade them for future goods except for a premium,

[1] Not necessarily, but unless the indirect process is expected to yield more, it will not be adopted.

because these present goods can be used in support of themselves and those they hire and so can make it possible for them to engage in roundabout production and reap the surplus. To dispose of their command over present goods is, in so far, to give up this possibility, and they will not give it up without compensation. The rate of interest, then, is determined, on both the supply and demand sides of the market, — the side of those who want and that of those who have command over present goods, — by the rate of surplus productivity[1] of roundabout over more direct production.

To recapitulate, the more largely production is roundabout or capitalistic, the larger is the total amount of wealth and income yielded; the more largely production is capitalistic, the less additional gain is realized by the further extension of roundabout production; the greater the accumulations of society, and the further indirect production is extended, the lower (other things equal) is the rate of interest. Large accumulations and great extension of roundabout production make social wealth greater, the rate of interest lower, the rate of wages higher. We saw, in the last chapter, that a protective tariff tends to decrease the productive efficiency of a country which applies it. Such a tariff makes more difficult the process of accumulation. It tends somewhat to lessen the degree of roundaboutness in production, to lessen the extent to which production is capitalistic. Protection, therefore, because it lessens national wealth through turning industry into less profitable channels, may lessen national wealth further by making production less capitalistic. If it does this, it will tend to raise the rate of interest, though not necessarily the total amounts

[1] At the margin of indirect production.

received as interest since the higher rate will be on smaller capital; while it will tend to reduce wages both by giving to capitalists a larger proportion of the results of roundabout production and by making production, on the whole, less roundabout and, therefore, less efficient. This indirect effect which a protective tariff may have on wages, through its effect on accumulation and the rate of interest, is without doubt very much less important than the more direct effect to be next discussed, but its operation, so far as it does affect wages, is unfavorable.

§ 2

Brief Statement of Laws of Wages and Land Rent

The general level of wages is determined, like other prices, by supply and demand. The wages which will equalize supply of and demand for labor will be higher or lower according as labor is more or less productive. Should the productivity of labor double, wages would double. For if labor would produce twice as much as before and wages did not rise correspondingly, the profit to be realized in hiring labor would be very great. This would increase the demand for labor until, if wages did not rise, demand would exceed supply. Hence, wages must rise and must rise in proportion. We have reference here to real, as distinguished from money, wages; that is, to the necessaries, comforts, and luxuries which wage earners receive, rather than to the mere number of dollars.

If all land were equally fertile and all sites equally good, and if desired land and space were unlimited, wages would equal the whole product of labor except interest. Those who advanced the means required to make pro-

duction more roundabout, would enjoy interest; beyond this, labor would get the entire product of industry. But all land is not equally fertile; all sites are not equally satisfactory; land and space are not unlimited; and there is to be reckoned with, the great law of diminishing returns. Whether in agriculture, manufacturing, or other work, an increase of labor upon any given space or area will not, beyond a certain point, result in a proportionate increase of the product. Two men, on a 100-acre farm, may secure twice or more than twice as great a result as can one. But it is pretty certain that two hundred men, working on that farm, will not secure 100 times as large a product as can two men. So, in manufacturing, a point of maximum economy is reached, beyond which it does not pay to crowd men together on a limited area or to build story upon story, but beyond which larger production requires more land. Since all land is not equally good, this means that larger production requires the use of less productive land and sites than would otherwise have to be used.

To illustrate the bearing of these facts upon the theory of wages and rent, let us consider the case of a 100-acre farm. Upon it, two men might be able to produce wheat at the rate of 3120 bushels a year or an average of 60 bushels a week, three men an average of 85 bushels a week, four men 105 bushels, five men 120 bushels. Then the third man adds 25 bushels to the product which would result from two men's work; the fourth man would add 20 bushels; the fifth, 15 bushels. Suppose that wheat is $1 a bushel. Then, if wages are not more than $25 a week but are enough less to pay interest on the wages advanced, the owner of the land will hire three men to cultivate it. He will not hire a fourth, since a fourth will

add but 20 bushels, worth $20, to the product. If, however, wages are slightly less than $20 a week, he will hire four men; and if they are slightly less than $15, he will employ five. The higher wages are, the fewer men he will employ. The lower wages are, the more men he will employ. This is true of all employers. Some land is so poor that no one can afford to work it or hire others to work it, if wages are high. If wages are low, this land can be worked profitably. In general, the lower wages are, the greater is the demand for labor. More men are desired on the more productive sites and men are desired for the utilization of sites that otherwise would stand undeveloped. At any level of wages, employers will hire men up to the point where the last man hired just produces his wages or just produces his wages plus interest.

To the extent that industry is carried on under nearly constant cost, a great amount of labor can be employed at wages almost as high per man as would be paid to a smaller number of laborers. Very little reduction of wages is required to increase, greatly, the demand for labor, since many employees can be hired before the worth of the last man (the marginal product of labor), becomes less than his wages. If, on the other hand, industry is carried on under conditions of sharply increasing labor cost (diminishing returns), any considerable increase in the demand for labor (other things equal), will not take place except at greatly reduced wages. If, therefore, the industry of a country is forced into a line of sharply increasing labor cost, real wages must become lower; though it is likewise true that if industry is forced into a line of constant labor cost into which it would not naturally go, real wages will probably become lower.[1]

[1] See § 5 of this chapter (V of Part II).

Ignoring interest, the law of which we have already stated, the surplus of production above the amounts paid as wages constitutes land rent and goes to the owners of land. In our illustration, at wages of $20 a week or slightly less, not more than four men would be employed on the given farm. No one of them would be employed at more than $20 wages, because no one of the four adds more than 20 bushels or $20 to what the product would be without him. The weekly wages of all four will not, therefore, exceed $80. The total product, however, with four men working, is 105 bushels or $105 worth. This leaves $25 a week as land rent to the owner of the farm. If wages were lower, not only would more men be employed, but rent would be higher. If wages were higher, fewer men would be employed and rent would be lower. Some land will yield higher rent; some is so poor as to yield no rent.

When protection turns the industry of a country into a line which it otherwise would not follow, the rents of lands or sites required in this line tend to rise, and the owners of these lands and sites become more prosperous. On the other hand, the rents of lands or sites which were used in the lines from which industry has been turned, tend to fall, and the owners of these lands and sites become less prosperous. Our task is to inquire what, in general, is the effect of protection on the total rent payments and on the general level of real wages in the protectionist country.

§ 3

The Effect of Protection on Wages when Protected and Unprotected Goods are Produced in the Protectionist Country, under Conditions of Substantially Constant Cost

Let us, to begin with, consider the effect of protection on wages, when both protected and unprotected goods are produced, in the protectionist country, under conditions of substantially constant cost. Under these conditions, a tariff will not greatly affect land rent. The first effect of protection is, as we have seen,[1] to raise the prices of protected goods by not more than the amount of the tariff, without affecting money wages. The secondary effect of protection, resulting from the inflow of money (so far as protection occasions such an inflow), is to raise prices of unprotected goods and money wages, and to further raise the prices of protected goods. Canada's protective tariff on linen has, as its first effect, a 43 cents or a 43 per cent rise in price per yard, wages remaining the same, viz. about $20 a week (a week's labor producing 20 bushels of wheat worth $1 a bushel). The second effect may be to raise everything 10 per cent. If, under conditions of constant cost in all lines, there is such a general rise of prices due to money inflow, we must suppose that, until this rise reaches 10 per cent, there will be *some* Canadian goods still sufficiently in demand elsewhere to maintain the inflow of gold, though wheat, because of competition from other sources, may not be such a good. Assuming such an average secondary rise of 10 per cent, and that all goods are produced under conditions of constant cost, this rise must affect any one kind of goods, *e.g.* wheat. Otherwise, those producing

[1] See Ch. IV (of Part II), §§ 1 and 2.

that kind of goods will turn to some other line. If wheat cannot be exported at the higher price, only enough will be produced for home consumption, and the other wheat producers will become linen producers, etc. Then the total increase of wheat in price is 10 per cent, and of money wages 10 per cent, but of linen 57 per cent (43 per cent and 10 per cent more added to the new price of $1.43 makes $1.57). Obviously, the average wage earner's condition is worse because of the tariff, even though his money wages are somewhat higher than otherwise they would be. If the protectionist country has an inconvertible money system unrelated to foreign systems, money wages and unprotected goods will remain the same in price as before, while protected goods rise in price. Wage earners will be worse off. With a common money standard, gold, for the countries trading, prices in the protectionist country, even of unprotected goods, rise, and wages rise in the same proportion; but since wages rise in no greater proportion, and since protected goods do rise in price by a greater proportion, real wages are lower.[1]

Our conclusion as to money wages is only that a high tariff will tend to make them higher in a given country

[1] A restrictive duty on the export of wheat would cause an outflow of gold and a fall in the general level of prices but would likewise reduce real wages. The decreased market for wheat would lower its price in Canada and would lower in the same degree (assuming it to be produced under conditions of constant cost) the money wages of producers. But the price of linen, into the production of which Canadian labor might in considerable degree be eventually forced, could not, since Canada is at a relative disadvantage in its production, fall, to the same extent, below the price at which it was previously imported. At that price, outflow of money for linen would cease. Under the conditions of production assumed, Canadians could better afford to produce wheat even for but 70 cents a bushel than to produce linen for appreciably less than $1 a yard. Twenty bushels at 70 cents a bushel or 14 yards at $1 a yard would alike yield but $14 a week. A week's wages would buy as much wheat as before but less linen. Hence, real wages would be lower because of such a tax.

than they would be in that same country in the absence of the tariff. It does not follow that money wages will be, necessarily, higher in a protectionist country than in a free trade country. In a prosperous country, money wages as well as real wages will be, other things equal, higher than in a country not prosperous. In the United States, for example, average money wages, as well as average real wages, are higher than in Europe. This is due to the fact that in many lines we have great natural resources without having too dense a population. We are productive in many lines of agriculture, particularly perhaps in the raising of wheat, corn, and cotton. We are also productive in certain lines of manufacture, having, for example, in Pennsylvania and in Alabama, great advantages for the manufacture of steel and steel products. In these various lines of effort, the United States is so productive that, even with reasonably low prices received for the goods, the daily wages of labor in these lines are high compared with European standards. Since we are, in these lines of activity, so productive, those in all other lines of industry must get equally high wages or they will go into these. That is, assuming open competition, the national prosperity cannot be confined to any one occupation. Thus, since our wheat raisers and steel producers are prosperous, our bricklayers, carpenters, plumbers, etc., need to be well rewarded to keep them in their work. Therefore, the prices of houses and of other goods which cannot be imported, and in producing which this country does not have the superiority that it has in cotton, wheat, steel, etc., will be high.

From these considerations it would appear that if wheat, cotton, steel, and some other lines of industry are, in the United States, exceptionally productive, it is the

most economical policy for us to import other products which we can obtain more cheaply abroad, rather than to employ our own high-priced labor in relatively unproductive effort. The prosperous country ought to have higher money wages, but not higher prices of importable commodities except as transportation and distributing costs make them higher. The fact that we have great natural resources in comparison to population, and that our labor is in some lines very productive, should make us immensely more prosperous than the older and more crowded countries whose resources in comparison with their populations are much less than ours, and should make real wages markedly higher here. For decades we have had a tariff policy admirably adapted to raise the cost of living and decrease our prosperity. If we have been prosperous and if our wages have been high, it has been in spite of and not because of the tariff. Comparing two European countries, England and Germany, the former the stock example of free trade, the latter a protectionist country, we find prices some 18 per cent higher in Germany and money wages lower.[1]

[1] See "A Comparative Study of Railway Wages and the Cost of Living in the United States, the United Kingdom, and the Principal Countries of Continental Europe," Bureau of Railway Economics, Bulletin No. 34, Washington, D.C., 1912, pp. 11, 35, and 67. In the same Bulletin (p. 11), it is shown that railway wages in the United States in 1900–1910 averaged $2.23 per day as compared with wages in England and Wales for 1910 of $1.067. It is also shown (p. 67) that prices in the United States for goods in workmen's budgets in 1909 were 38 per cent higher than in England and Wales. It appears, therefore, that despite the tariff, naturally favoring conditions have kept American real wages somewhat higher than English wages, but not so much higher as a comparison of money wages alone might lead us to suppose. Comparative railway wages are probably as good an index of comparative wages in general as is available.

§ 4

The Effect of Protection on Wages and Rent when the Protected Goods are Produced under Conditions of Sharply Increasing Cost

Still assuming the unprotected product, wheat, to be produced in Canada at so nearly constant cost that the withdrawal of some labor into linen making will not appreciably lower the price of wheat, let us suppose the conditions to be such that linen manufacturing, in Canada, can be extended only at increasing cost. We may suppose, for instance, that there are a very few sites favorably located near sources of cheap power and on transportation lines, and that upon these sites linen can be produced, even in Canada, for $1 a yard, or, at worst, for less than $1.43. But most of the desired supply, in the absence of protection, is obtained from Ireland. Protection, by shutting out the supply from abroad, encourages the use of the poorer sites in Canada, since the better sites, by our hypothesis, cannot produce enough to satisfy the demand. To remunerate producers on the poorer sites, the price must be higher, say $1.43 a yard. If it is not, producers on the poorer sites cannot pay the prevailing rate of wages. If it is, producers on the better sites have a surplus or rent, since production costs them, in wages, less money per yard than it costs producers on the poorer sites.

Otherwise expressing the matter, we may say that a week's labor in Canada will produce 20 yards of linen on the better sites, but only 14 on the poorer sites. If the poorer sites are to be used, wages cannot be more than 14 yards a week or the money equivalent of 14 yards. But the owners of the better sites have a surplus, after

paying these wages, of 6 yards or the money equivalent of 6 yards.

So far, then, as Canada supplies itself, after the protective policy is adopted, with Canadian linen manufactured on the most favorable sites, there is no national loss. Wages, that is, real wages, are lower. The rents of the favorable factory sites are higher. Money wages are not lower, but linen is higher in price, and the rise goes to increase the incomes of land owners. So far as Canada supplies itself with linen from the less advantageously located factories, the higher price means a loss to wage earners with no corresponding gain to the owners of land. Under the conditions of production here assumed (production of linen under conditions of increasing cost and of wheat at nearly constant cost), the protective tariff would indeed decrease the net wealth and income of the protectionist country, but the land owning class would gain.[1] Rents of lands required for the protected industry (assumed to be of increasing cost) would rise to a greater degree than rents of lands required for unprotected industries (assumed to be, within limits, of nearly constant cost) would fall. The total national loss in yearly income would therefore be less than the loss of the wage earning class alone. Part of the loss of the wage earning class would be absolute national loss; the rest would be loss balanced by land owners' gain.

No essential corrections need to be made in these conclusions because of the inflow of money resulting from

[1] A similar result, except that there would be an outflow of money and a fall of money prices, would follow, under our assumptions, from a restrictive export duty on wheat. Such a duty would prevent production of wheat for export, drive some Canadian labor into other lines, *e.g.* the manufacture of linen, even though for small returns, reduce real wages, and raise the rents of land and sites required in the newly expanded lines of industry.

protection. Under the assumed conditions, the secondary rise of prices so caused would affect rents, wages, and nearly all prices, alike.

Duties of the special kind here criticised, we have had in plenty in our own various protective tariff acts. Our protective tax on coal, compelling resort to the poorest native mines in preference to securing some coal from abroad, has doubtless tended to increase the value of native mines and the profits of mine owners, but has done this only at the greater expense of the wage earning public. The protection accorded to raw wool by the much criticised schedule K of the Payne-Aldrich tariff bill, certainly tended to encourage the production of wool in the United States on lands which, otherwise, it would not have paid to use for that purpose. The owners of lands used for sheep raising were doubtless in many cases able to realize larger profits or higher rents, but only at the greater expense of others, largely the wage earners.

In estimating the relative costs of production of raw wool in different countries and in different parts of the United States, the Tariff Board subtracted the receipts to sheep raisers from other things than the wool, chiefly from mutton. There was left, in their reckoning, a cost which the wool must cover. This surplus cost they found to be nothing in New Zealand and on the favorably situated runs of Australia, a very few cents a pound for Australasia in general, 4 or 5 cents a pound for South America, $9\frac{1}{2}$ cents a pound for the United States, 11 cents for the "fine" and "fine medium" wools of the American west, and 19 cents for the fine wools of Ohio and the contiguous territory.[1] The effect of protection

[1] Report of the Tariff Board on Schedule K of the Tariff Law, 1912, Vol. I, Part I, pp. 10, 11.

(now, fortunately, removed from raw wool) has been to shut out very largely the lower priced foreign wool, to compel the use of the high-priced American wool, to make wool production profitable on lands relatively unsuited for it, to make the rental value of these lands higher, and to make real wages lower. In the opinion of the tariff board, the highest production cost in the world, of the merino wools largely required by American mills, is in the state of Ohio and near-by surrounding territory;[1] yet a high protective tariff on raw wool so shut off the supply from abroad as to cause large production of it in that region. That the general effect of this protection to raw wool, accorded by the Payne-Aldrich tariff bill, must have been to lower wages while probably raising the rents of land owners, hardly seems open to serious question.

§ 5

The Effect of Protection on Wages and Rent when Unprotected Goods are Produced under Conditions of Sharply Increasing Cost

We may now consider a third possibility as to costs of production, viz. that the protected goods, *e.g.* linen, are produced under conditions of nearly constant cost, while the unprotected goods, *e.g.* wheat, are produced under conditions of increasing cost. Under these circumstances, not much labor can be turned into linen manufacturing without lowering the marginal labor cost of producing wheat. For as labor is diverted from wheat to linen production, the poorer wheat lands are deserted, and on the better lands a week's labor can produce more than 20 bushels. If, therefore, Canada's

[1] Report of the Tariff Board on Schedule K of the Tariff Law, 1912, Vol. I, Part I, pp. 10, 11.

tariff effectively excludes foreign linen, either Canadian linen will sell for more than $1.43 a yard or Canadian wheat for less than $1 a bushel or both such changes will occur. Otherwise no one will desert any but the very worst wheat lands in order to produce linen. Competition of wheat raisers who would rather sell wheat for less than $1 a bushel than linen for only $1.43 a yard will tend to keep wheat prices down. Reluctance of such persons to produce linen will tend to keep linen prices up. The ratio of the value of a bushel of wheat to the value of a yard of linen must lie at such a point that returns to marginal producers (*i.e.* producers having the least favorable situations, but whose goods are nevertheless demanded), shall be about equal in both lines. Hence, it will take more than 20 bushels of wheat to equal in value 14 yards of linen. If Canada were financially isolated and the quantity of money in Canada remained unchanged, we should expect that the changed conditions of cost would be accompanied by both a rise of linen and a fall of wheat prices. Unless there was an increased quantity of currency in Canada, a rise of the price of linen above $1.43 a yard could hardly take place (other things equal) without a fall in the price of wheat below $1; and unless there was a decreased supply of currency, wheat could hardly fall below $1 without there being a rise in the price of linen above $1.43.

But with Canada maintaining a gold standard, the common standard of most of the commercial world, and having a foreign market for her wheat, the price of the wheat cannot greatly fall. Any tendency of the price to fall, in Canada, would be counteracted by exportation and sale abroad at world market prices. Any change in relative values will be through a rise in price of linen

above $1.43, rather than through a fall in price of wheat below $1. Since importations of goods into Canada are interfered with, there must be for a time a net money inflow, and there must be a money inflow for wheat if and so long as it sells for much less than $1 a bushel. This inflow of money into Canada tends to raise average prices in the proportion of the money inflow. Were the wheat produced under conditions of approximately constant cost, the inflow of money must necessarily tend to raise its price in the same proportion. For, since it raises prices generally in that proportion, the industry of wheat raising must yield correspondingly larger money returns or it would be less profitable than others. But under conditions of increasing cost, the circumstances are different. On the better lands, the profits of wheat raising, even with the higher money cost of production and at a price little if at all higher than before the tariff was laid, will be sufficient to keep those lands under cultivation.[1] Rather than turn to the protected industries, such as linen manufacture, until Canada only produces enough wheat for her own use and has none for export, and until wheat has risen in price in the same ratio that money has increased, Canadian farmers on the better lands will prefer to remain producers of wheat. This will result in a supply sufficient to keep the price from rising very much above the former price. In fact, if we assume wheat production to be the line of industry in which Canada is relatively the most efficient and wheat to be Canada's chief or only export, we must conclude that Canadian wheat cannot rise to a much higher price than before, despite the inflow of money. For wheat can be secured in large quantities from many other sources of

[1] Though less intensively than before.

production, and if Canadian wheat rises greatly in price, foreign demand for Canadian wheat will decrease, Canadian producers on the poorer lands will give up wheat production, and Canadian producers on the better lands will accept world wheat market prices rather than abandon wheat production. The sale abroad of Canadian wheat and of nothing else cannot, by causing an inflow of gold, raise the price of Canadian wheat very much above this world market price, since, before it does so, foreign purchase of Canadian wheat will cease, the inflow of gold will cease, and the rise of prices will cease.[1]

Assume that, as a result of protection, Canadian money increases by 10 per cent. We have seen that average prices will tend to rise by 10 per cent, in addition to the original 43 per cent rise of the protected linen. We have seen that, under our supposed conditions, wheat prices will remain substantially unchanged. Since wheat remains at about $1 a bushel, linen will rise to more than $1.57 a yard and wages will rise to more than $22 a week.[2] It follows that there is a possibility of gain, for wage earners, from a limited application of protection; though, as we shall see, the probability of this gain being realized in practice is remote. So far as they are consumers of protected goods, wage earners lose because of the rise in prices of these goods, occasioned by the tariff. But so far as wage earners are able to buy at substantially the former prices, goods produced under conditions of increasing cost, while having money wages

[1] Canadian prices cannot rise indefinitely in relation to foreign prices unless Canada is such a centre of gold production that prices rise without export of goods and unless, also, all imports are forbidden, and so outflow of this gold is prevented.

[2] That is, by more than 10 per cent on $ 20.

greater by more than the average rise of prices, with which to buy these goods, they are gainers.

On the other hand, owners of land — in this case, farming land — are losers. And they lose more than wage earners gain. Land which it previously paid to cultivate can no longer be cultivated with profit. Land which previously yielded a large surplus, after wages were paid, now yields a smaller surplus. Since the wheat land owners (and that means, in large part, the farmers), get practically no higher prices for their wheat, the higher money wages which they have to pay are to them an unbalanced loss. So are the higher prices they must pay for protected and other goods. Their loss through having to pay higher wages to those they employ is not cancelled for the nation as a whole by a corresponding gain to their employees, since the latter have to pay higher prices for linen. Neither are the higher prices which farmers and other land owners must pay for linen balanced by the higher money wages paid to linen makers, for these wages are higher only by virtue of the secondary rise resulting from the inflow of gold (the original 43 cents rise directly due to the tariff merely making it possible to get the *same* wages in linen making as were previously given in wheat producing); while both the original rise which does not raise wages and the secondary rise which does, must be borne by farmers desiring to purchase linen. It seems fair to conclude, therefore, that if wage earners ever do gain by a protective tariff, they gain at the greater expense of farmers or some other class. As shown in the previous chapter, average wealth is decreased.

The conclusion that a protective tariff establishing an industry of relatively constant cost, and decreasing the ex-

tent of an industry of increasing cost, might raise wages at the expense of land rent, applies equally if we suppose the protectionist country to have an inconvertible paper money which will not be increased by an inflow of gold. Suppose Canada to have such a currency. Then, as we have seen,[1] the original rise of linen to $1.43 is not followed by the 10 per cent further rise in the average of prices. But the value relation of foreign money to Canadian money will change,[2] so that it takes more foreign money than before to buy a given amount of Canadian money, and therefore of Canadian goods. To tempt wheat producers away from any but the worst lands will require a rise of linen above $1.43. On the other hand, the price of wheat will fall below $1 a bushel, since it can be produced more cheaply on the better lands and since the greater value of Canadian money compared to foreign money will prevent the export of any wheat except at less than $1 a bushel. Money wages will remain about the same, $20 a week. Wheat will be cheaper. Wage earners may be better off, but, if so, only at the expense of even greater loss to agricultural land owners.[3]

The possible gain of wage earners and loss to agricultural land owners and farmers, can perhaps be most clearly shown if we omit reference to money and money prices. When the Canadian tariff shuts out linen from abroad, the value of linen, in Canada, will rise in terms

[1] Chapter IV (of Part II), § 3.

[2] See, for example, Part I, Ch. VI, §§ 6, 7, 8, 9, and Part II, Ch. IV, § 3.

[3] A restrictive export tax on wheat might have a like result on the relative interests of economic classes, though having an opposite result on the general price level. Such a tax would cause prices to fall and would drive industry from wheat raising into other lines. But it might, conceivably, by preventing production of wheat for export and forcing out of cultivation the poorer lands, reduce wheat prices, in Canada, more than it reduced prices in general or money wages.

of wheat until it becomes profitable for men to leave off cultivating the less fertile and less desirably situated lands, in order to manufacture linen. Instead of 20 bushels buying 20 yards, as before, when the linen was purchased abroad, 20 bushels will buy less than 14 yards and 14 yards will buy more than 20 bushels. For if 14 yards of linen would buy but 20 bushels of wheat, only those on the very worst lands, if even those, would find it profitable to change from wheat to linen production. If, when a new equilibrium is reached, the worst lands still cultivated, and the marginal labor on all wheat lands, yield 25 bushels a week per cultivator,[1] while it requires a week's labor to make 14 yards of linen, then 25 bushels will exchange for 14 yards. Since considerable labor is diverted into linen manufacture at a wage of not more than 14 yards (or its equivalent in other form), a week's wages in wheat production will be not more than and not much less than 25 bushels a week (or the equivalent in other form). At any appreciably less wage, demand for labor would exceed supply, because at any less wage it would pay to hire more men, to cultivate land more intensively, and to cultivate worse land, while at any less wage, labor could not so easily be kept from the linen factories and at work on the farms. Wages in terms of linen are less (14 yards instead of 20) because of the tariff. Wages in terms of wheat are greater (25 bushels instead of 20) because of the tariff. If the wage earner has occasion to consume much wheat and to use little linen, his real wages, in this very hypothetical case, will be higher.[2] Owners of

[1] That is, if the last man hired adds that much to the total product. See § 2 of this chapter (V of Part II).

[2] Cf. Loria in the *Journal of the Royal Statistical Society*, Vol. L, on "Effects of Import Duties in New and Old Countries," 1887, pp. 408–410; Patten,

wheat lands, including farmers, will lose what the wage earners they hire gain, and will lose, besides, from the higher price of linen in terms of wheat. The wheat-producing wage earners will not gain in real wages what the farmers who pay them lose, for it will take more wheat than before to buy 14 yards of linen. Neither will the linen-making workmen gain as much from the higher price of linen in terms of wheat, as the wheat producers and owners of wheat lands lose, for the linen makers gain what the wheat raisers and land owners lose, only to the extent that they trade their linen wages for wheat. So far as they themselves have some use for linen, they also lose.

We are brought back, then, by another route, to the conclusion that a protective tariff will only add to the wealth or income of one person or class by taking a larger amount of wealth or income away from some other person or class.[1] It is conceivable, though, as we shall

Economic Basis of Protection, Philadelphia (J. B. Lippincott Co.), 1895, Ch. V; and Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 105.

[1] A number of economists (*e.g.* Sidgwick, Edgeworth, Carver) have apparently been led to the opinion that protection might not only raise wages but might even increase the total national wealth by drawing labor out of lines of increasing cost; or that the removal of protection to manufactures and other industries of relatively constant cost might decrease national productiveness as well as reduce wages. Sidgwick, for instance, imagined a protectionist country of limited natural resources suddenly becoming a free trade country, and its manufacturing population, previously protected, being thereupon undersold by foreigners and driven out of business and being unable to obtain employment in agriculture (*The Principles of Political Economy*, London, Macmillan, 1887, pp. 496–498). But if agricultural resources were in such a country so limited as to give little or no employment to the former manufacturing population, then this population would remain chiefly or entirely in manufacturing, accepting the lower wages required for competition with the imported goods. This, however, could not possibly decrease the national wealth (except as the reduced wages might affect efficiency) for the land owners would gain as much as the wage earners would lose. Employment, at some level of wages, would continue, and production would continue. If, with removal of protection, it proved possible

see, far from probable,[1] that wage earners may be the gainers and land owners the losers by such a policy.

Let no one welcome this conceivable consequence of a carefully devised tariff system, on the ground that the situation or fertility rent secured by the owners of superior land, is unearned. Assuming that it is unearned (and it is no part of the function of this book to discuss at length whether or not land rent is unearned), a change in the taxing system securing to the public its full rights to any such unearned wealth or income would be more sensible than a partial loss of such wealth or income

to employ more productively in agriculture even a few of those previously engaged in manufacturing, the total national wealth would be increased even though wages might fall. The discussions on this phase of protection between Professors Bastable and Edgeworth, in the *Economic Journal* (Vol. X, 1900, pp. 389–393 and Vol. XI, 1901, pp. 226–229 and 582–590) seem to the present writer not to bring out clearly this distinction between the effect on national wealth and the effect on wages. (See also Bastable, *The Theory of International Trade*, pp. 187–197.)

Carver (Publications of the American Economic Association, Third Series, Vol. III, pp. 176–182) uses a different illustration to establish what seems to be the same conclusion as that of Sidgwick. He supposes a piece of land which, in the absence of protection or some form of legal discrimination, will allow the employment of one man in sheep raising, while it might otherwise employ 20 men in wheat production. The total product, he assumes, would be greater in the latter case; but the land owners' rent, if trade were thus interfered with, would be lower. Removal of restrictions might throw 19 men out of work. In criticism of this view it is to be said that there are two extreme possibilities. Either the 19 men have a preferable alternative, under the free trade régime, to wheat raising, or they have not. If they have not, they will accept low enough wages, rather than be unemployed and have nothing, so that the land owner can realize as much rent for his land (or more) as if he used it for a sheep run. Unless their efficiency is thus impaired, they will then produce as much wheat as if they were protected. The effect of freedom from restriction may be seen in lower wages and higher rent, but not in decreased national wealth. If, however, they have a preferable alternative, these 19 men will not raise wheat but will occupy themselves otherwise at higher wages than wheat raising under free trade would yield them, while the land owner will at the same time realize the higher rent assumed to result from using his land as a sheep run. Free trade would then, also, raise rent more than it would lower wages.

[1] Shown in remainder of this section (5).

because of restrictions on trade. At any rate, those who support protection with the argument that it can be made to benefit wage earners at the expense of land rent, should be the last to oppose direct taxation of rent.

In practice, the likelihood of devising a tariff which shall benefit wage workers at the expense of farmers is extremely small. Such a tariff must, in the first place, turn enough labor from agriculture into other lines to raise, appreciably, the margin of cultivation. That is, so much of the poorer land previously cultivated must be left uncultivated, that the poorest land remaining in use is appreciably better than the poorest land which was in use. Otherwise, wages in terms of wheat cannot be appreciably higher, for owners of the poorer lands cannot pay higher wages, and, unless labor is so strongly drawn into other lines that they have to, owners of the better lands will not. To have any appreciable favorable effect on wages, protection must, therefore, set up large industries or many industries, giving employment to many men.

But if protection is to be of benefit to wage earners, it must be levied on goods consumed not at all or only to a very limited extent by them, and on no other goods,[1] so that any rise of money wages which may take place, shall not be more than offset by higher prices of goods workingmen have to buy.[2] The problem of drawing a large amount of labor away from agriculture (usually regarded as an industry of increasing cost, though it is by no means always an industry of rapidly increasing

[1] Or, at least, only slightly on other goods.

[2] This loss to wage earners is borne not the less if they buy goods made by machinery which has been raised in price by protection, or transportation from railway companies, etc., which have to charge more because of expensive materials.

cost) into industries (*e.g.* many kinds of manufacturing) of relatively constant cost, and selecting, as industries into which to draw this labor, only those producing goods little used by the masses, is indeed a problem hard to solve and a problem which, in the exigencies of practical politics, is unlikely ever to be solved.

As a matter of fact, few men in practical politics would dare advocate such protection, frankly stating its intended result and how the result was to be attained; for most men in politics would quickly realize that such an advocacy would be likely to array against them the opposition at the polls of nearly all the farmers. Our own (United States) protective tariff has been levied on raw wool, woolen cloth, cotton cloth, sugar, fruit, potatoes, shoes, coal, etc. It has been very far from being a tariff which would raise wages at the greater expense of rent. Rather has it been a general grab in which as many interests as possible have tried to get something at the expense of the general interest. It requires no argument to show that our protection has not been designed to avoid the things that the masses of working people have to consume. Nor has it by any means avoided goods produced under conditions of increasing cost, protection of which is likely to raise land rents, to the greater loss of wage earners. From the log rolling of actual political struggle, there is likely to issue a hodge-podge of tariff rates, causing loss to nearly all. The general average of American wages might be made higher by shutting out the immigrant laborers who enter this country as competitors of those already here; but the average American real wages are distinctly not raised by shutting out and, therefore, making scarce and dear, the goods which wage workers desire to consume.

§ 6

How Protection May Benefit One Section of a Country at the Expense of Other Sections

A protective tariff may benefit absolutely one section of a country, including manufacturers, wage earners, and farmers; but if so, only at the greater expense of some other section or sections. Protection to manufacturers of woolen cloth, in certain sections of New England, may benefit people in those sections, who are unwilling to move elsewhere, by making purchasers of cloth in other parts of the United States pay tribute to them. It may conceivably even work a benefit to farmers and farm land owners in the immediate vicinity of the protected mills, since the protected mill owners and mill workers, though gaining something at the expense of the rest of the nation, would have to share these gains with local dairymen and truck farmers in order to get the latters' services, just as they would have to share these gains with local building contractors, bricklayers, and so forth.[1] The gain, if there is a gain, is not equivalent to the loss of other sections, for the people of the locality benefited have the option of seeking better opportunities in these other sections, even if they do not care to carry on other industries where they are. If other sections have greater resources, then artificially to prevent migration into them is to diminish national prosperity, is to decrease wealth production in the naturally favored sections more than it is increased in the less favored. And, in any case, to turn industry into a line it would not otherwise follow, is, presumably, to diminish national prosperity. The policy, when all sections are considered, brings a net loss.

[1] Cf. Taussig, *Principles of Economics*, New York (Macmillan), 1911, Vol. I, p. 511.

While there is reasonable ground for the opinion that no large section of the United States has really gained by the long continued maintenance of protective duties, or could gain more than it would lose, in the general compromise of protective tariff making, yet certain parts of the country have felt themselves particularly injured. This has been the feeling in most of the Southern states, and is one explanation for the phenomenon of a "solid South." The cotton-raising states have realized that their staple product must be in part exported, and that a protective tariff could not appreciably, if at all, raise its price. And they have known full well that the prices of many things they have had to buy have been very considerably raised in price by the tariff. The wheat-producing areas of the middle West and, doubtless, certain manufacturing centres of the East, have been in a similar situation.

It is probably such facts as these, which have apparently produced in the minds of some of our public men the feeling that a protective tariff is, in spirit, unconstitutional, a feeling which found recent expression in the National Democratic platform of 1912. The Federal Constitution has given to Congress and the President the right to levy import duties and the right to regulate commerce with foreign nations. The passing of a protective tariff law has always been regarded as but an exercise of these powers. There is little reason to suppose that any Federal court would set aside a tariff law as unconstitutional merely because it was protective. A court would not be likely to go behind the professed intent of Congress and the letter of the Constitution, in order to raise questions regarding the ultimate economic effects of the laws passed. Such questions would be

assumed to be questions for the legislature and not the judiciary to decide. Therefore, Congress and the President must themselves decide upon the constitutional justification of a protective tariff. But the contention that to use either the tax-levying power or the power to regulate commerce, in such a way as to compel the people of some states to pay tribute to producers in other states, is contrary to the real spirit of a constitution framed as the basis for a federation of states, is a contention not without a degree of plausibility.

§ 7

Protection as an Encouragement to Monopoly

In its practical results, the tariff is likely to operate in taxing the entire nation, not for the benefit of all the people in any one section, but for the protection of monopoly profits. Though a tariff schedule may not be at first devised for this purpose, — and of course it would not, at least openly, be so devised, — it comes to have this effect if it encourages combination. This the tariff is likely to do. For it protects producers against foreign competition and so suggests to them the hope that, by combining among themselves, they may realize monopoly profits. A protective tariff which has only this effect cannot be said to benefit the masses of the people in any section. It certainly has no effect on real wages other than to lower them, if, as is usually the case, the goods produced are goods largely consumed, directly or indirectly, by working people. For the only way the tariff can possibly create or maintain monopoly profits, is to create or maintain monopoly prices; and that means that it takes money from the masses of the people, in order to give it to monopolists.

§ 8

Summary

We have now to summarize the conclusions we have reached regarding the effect of protection on classes and sections. Because protection tends to diminish national wealth, it has a tendency to restrict the extent of round-about production, to make the *rate* of interest higher (though not necessarily the total *amount* of interest), and to make wages lower. This is an indirect effect. But there is a more obvious direct action. When both protected and unprotected goods are produced, in the protectionist country, under conditions of approximately constant cost, the effect of protection is to reduce real wages. If the protectionist country and those trading with it have a common monetary standard, then money wages in the former will rise and money prices will rise in the same proportion, except that there will be a special rise of the protected goods, in addition, so that real wages will be lower. Assuming the protected industry to be one of increasing cost, while the unprotected industries are of relatively constant cost, it appears that protection may benefit land owners by raising land rents, but that the gain of land owners must be less than the loss of wage earners.

On the other hand, there is a conceivable case in which wage earners gain at the greater expense of land owners, viz. when the protected goods are produced under conditions of relatively constant cost and unprotected goods under conditions of increasing, perhaps sharply increasing, cost, and when wage earners are chiefly concerned, as consumers, with unprotected goods. Given these conditions, real wages will be higher because of protection,

and the rents of land (in our illustration, the profits of farmers) will be lower. But the owners of land lose more than the wage earners gain. Assuming the usual international monetary relations, money wages will rise; money prices of protected goods will rise more; money prices of the unprotected goods produced under conditions of increasing cost will rise little or not at all.

It appeared, however, that the mere devising of a tariff to have this result would be difficult, since it would be almost impossible to divert much labor from the industry or industries of increasing cost and so to make possible, in that industry or those industries, higher wages, without protecting the production of and raising the prices of, goods largely consumed by wage workers. The practical difficulties in the way of passing such a tariff act appeared to be no less great. The conflict of various interests is not likely to, and presumably never did, result in a tariff act which would raise wages at the expense of land rent. Even supposing such an act to be practically possible, and assuming that most or all of land rent is an unearned income belonging properly to the whole people, we must conclude that direct taxation of such rent would secure the larger general welfare and the less waste, as compared with the indirect and very partial appropriation of it and partial waste of it, involved in the protective tariff policy.

Protection can, it was shown, benefit a considerable territory within the protected group at the greater expense of another section of the same nation. In the United States, the South has usually felt itself to be a sufferer by the policy. Protection may also build up and secure against foreign competition, monopolies, and so injure the general public for the benefit of a comparatively few.

CHAPTER VI

A Consideration of Some Special Arguments for Protection

§ 1

The Argument that Protection is Desirable Because it Keeps Money in the Protected Country

One of the cruder popular arguments for protection is that it keeps the people of the protectionist country from spending their money in foreign countries, and so gets and keeps more money in circulation at home. It is, of course, true, as we have seen,[1] that the effect of a protective tariff is to decrease imports, while still, for a short time, not bringing about a corresponding decrease of exports, and that there is, in consequence, somewhat more money in a protectionist country than otherwise there would be. But it is also true that the net inflow of money or of gold is not perpetual, that it soon reaches a limit. It is further to be emphasized that money or gold is not the thing for the securing of which trade is really carried on. No one, other than a miser, wants money, except that he may pay it out again for other goods.

The argument in favor of getting money into the country and keeping it there, occasionally takes the form of a comparison between a business man and a nation. It is asserted that a business man is reckoned prosperous

[1] Chapter IV (of Part II), § 1.

in proportion as he takes in more money than he pays out, in proportion as he sells more goods than he buys; that a nation's prosperity is similarly to be secured by selling for money more than it buys with money; and that, therefore, a limitation on purchases from abroad is desirable.

The validity of such a comparison is sometimes questioned by free traders. It is said that, since a nation is not the same as a single individual, what conduces to the prosperity of the latter may not further the prosperity of the former. But free traders have, as such, no occasion to question the validity of the comparison, since the comparison does not show what protectionists intend it to show. The fact is that a successful business man does not take in more money than he pays out. On the contrary, he is always anxious to expend his money (or his bank deposit) for goods. If he does not spend it for enjoyments, he will wish to expend it by making investments. He will buy automobiles, yachts, residences, theatre tickets; or he will purchase factories, office buildings, railroad shares, machinery. It is by the one type of purchases that he endeavors to enjoy his prosperity, and by the other kind of purchases that he hopes to add to his prosperity. A wealthy man is not necessarily one who has a large amount of money in his pockets or one who has a large checking account. More usually his assets of that sort are small compared with his property in railroads, mills, stores, farms, etc. With a nation, which is a collection of individuals, the aim should be similar. A nation enjoys its prosperity, in proportion as it secures many services and many goods for immediate consumption. It increases its prosperity in proportion as it secures, from abroad if it can get more

by purchasing abroad, large capital equipment for aid in further production. For a nation as for an individual, money is not the thing most to be desired, but the wealth which money buys. A country which has a large amount of money and high prices, benefits from that fact only if it can use this money to buy goods where prices are lower. There is no gain, but only loss, in preventing purchase abroad in order to get and keep money within a protectionist nation.

§ 2

The Wages Argument for Protection

The argument for protection, which has, perhaps, been most persistently urged in political campaigns within the United States during the last half century or more, is the wages argument. We have already discussed at some length the effect of protection on wages,[1] and need not expand greatly upon the subject, here.

The general tendency of protection is to divert industry out of its most profitable into less profitable channels; and it is hardly likely that, by so doing, protection will make wages higher. We may rather expect that it will make wages lower. In fact, as we have seen,[2] a protective tariff cannot directly[3] raise any wages without raising, in the same degree, the prices of protected goods. And further, as we have also seen,[4] to the extent that protection operates to turn men into less productive lines, those whose wages are nominally raised will not

[1] See Ch. V (of Part II).

[2] Chapter IV (of Part II), § 2.

[3] The improbability of a tariff's raising wages indirectly has been sufficiently discussed in Ch. V (of Part II), § 5.

[4] Chapter IV (of Part II), § 2.

gain (if they do gain) as much as others lose. Even if they secure, in the protected industry, wages as much higher than they could otherwise get *in that line* as their employers get higher prices for the protected goods, they will not be getting wages correspondingly higher than they could have secured in the natural and relatively more productive industries of their country. The presumption is, that not only *average* real wages, but even the real wages of those employed in protected industries, will be lowered by protection. For competition, so far as it is free, tends to equalize conditions; and no one trade of wage earners can therefore hope to gain, for any long period, by means of protection, even at the greater expense of wage earners in other trades. Rather will all probably share, ultimately, in the national loss. Though wages measured in money may be slightly higher under protection because of an inflow of gold, wages measured in the necessaries, comforts, and luxuries of life, are practically certain to be lower.

The emphasis, in the wages argument for protection, is sometimes placed on the alleged danger of allowing American workingmen to be subject to the competition of cheap foreign labor, the competition of the so-called "pauper labor" of Europe. The truth is that the "competition" of cheap foreign labor cannot do otherwise than benefit the country as a whole. Such labor, *e.g.* labor engaged in the production of woolen cloth, can only injure American workingmen employed in that industry, by benefiting Americans in all other lines through lower prices of woolen cloth. And the Americans engaged in manufacturing woolen cloth would share in this benefit when they had turned their efforts into

other lines in which their relative efficiency was greater. If it is really so dangerous to American wage workers' prosperity to have goods from abroad sold in the United States at a low price, and the more dangerous the lower the price, then, obviously, it must be the most dangerous of all if the goods are given to us for nothing.[1] What ruin to our industries, what poverty and suffering must be caused, by our getting quantities of goods from abroad without having to produce any goods to send in return! For if we thus secure goods from other countries for nothing, we are able to devote all our energies to increasing still further our stock of wealth and our flow of income services.

Frequently an inductive wages argument is attempted, based on a comparison between the United States and England. Attention is called to the fact that wages in England are lower than wages in the United States, and it is implied, if not asserted, that the difference is due to the British policy of free trade as contrasted with an historic American policy (now, however, possibly in process of abandonment) of protection. Yet every one who is familiar with and able to distinguish between the legitimate and the illegitimate processes of reasoning, knows that such a comparison has little or no value unless other things are equal, or unless the effects of the other things which are not equal are known, and can be subtracted from the total result.[2] As a matter of fact, other things are not, in this comparison between England and the United States, at all equal. England is much

[1] An effective turn to the argument given by Henry George in his very readable *Protection and Free Trade*, New York (Henry George), 1891, pp. 121–125.

[2] See Mill, *System of Logic*, Book III, Ch. VIII, § 5 on the method of residues.

more crowded than the United States, and its resources, in comparison to population, are less. With thirty-three millions of people struggling to make a living in a country about the size of the state of Illinois (which has a population of something like two millions), England can hardly be expected to be a country of as high wages as the United States. Because of the law of diminishing returns, wages in England must be comparatively low in order that the demand for labor shall equal the supply. It is true that the people of England are not confined to, and are not mainly occupied in, agriculture. England is primarily a manufacturing and commercial nation. But the point is, that England has to engage in industries employing many persons per unit space, in order to support, comfortably, so large a population in so small an area. Hence, England has to engage in *commerce* and *manufacturing*, even if competition with other crowded countries and parts of countries, reduces the profits and wages which can be earned to a comparatively low level, and even though far distant markets must be sought and raw materials imported, at considerable expense, from abroad. In a country like the United States, however, there is always the alternative of going into agriculture, or mining, or manufacturing for which resources are available near at hand, and hence wages tend to remain at a higher level. Wages in the United States have been high, not because of a protective tariff which has tended to lower them, but because of the favorable relation of population to natural resources. Wages in the United States are in danger of being lowered, not by free trade, which would tend to raise them, but by immigration from the crowded and low-wage countries, by immigration which increases the supply

of labor, lowers the margin of cultivation toward foreign levels, and makes necessary low wages to equalize supply of and demand for wage earners' services.[1]

§ 3

The Make-Work Argument for Protection

Closely associated with the wages argument is the argument that protection makes employment. It is said that the tariff, by shutting out various foreign goods, gives encouragement to American capital and labor to engage in producing such goods. If protection does this, it is only because protection makes the production of such goods more profitable. For even without the defence of the tariff, home producers in any industry could have the entire home market and could, therefore, sell all the goods which that market would take — as well as some goods abroad — if they would make low enough prices, if employers and employees together would be willing to carry on the business without aid, and take what it could earn. The tariff simply enables them to do a business no larger, at higher prices, and therefore at the expense of persons in other industries. If employment is increased in one industry, it is only because that industry is made more profitable than it otherwise would be and because men will choose the employment

[1] If immigrant wage earners always went into the lowest grade labor, and if they and their descendants remained in this labor only, their competition might not lower wages in other work. If it increased the demand for other work more than, by pushing former low grade labor into such work, it increased the supply, wages in this other work might rise. Conceivably, most native labor would find employment in this high grade work (Hadley, *Economics*, New York —Putnam —, 1906, pp. 420–421). But in a few generations, the descendants of immigrants are competing for the higher positions as well as the lower, and, indeed, it would be more difficult to realize democratic ideals if they were not. The net result is likely to be a reduction of wages for most kinds of labor.

that pays best. Employment is made less profitable in other industries than it would else be, since those employed in these industries must bear the tariff burden. Will not the protective tariff, therefore, decrease employment in these other industries as much as it increases employment in the favored industry or industries?

Another way to look at this matter of employment is from the viewpoint of the tariff's effect on foreign trade. In a previous chapter [1] it was pointed out that any serious restriction of imports brings, eventually, a corresponding limitation on exports. It follows that to give employment in a new industry started by a protective tariff, is to take away employment in production of goods for export.

Even if the people of foreign countries would give us our imports for nothing, — which they will not, — so that our labor would not need to be employed in producing goods to return to them, still our labor might be sufficiently employed in producing additional goods or in producing goods of a different kind which we could not secure by gift. A high protective tariff would shut out the free goods and compel our labor to be wasted in producing these goods at home; but it would not make employment greater or more steady. Our labor would simply be producing goods which might have been got for nothing, instead of getting such goods free and producing additional goods.

Labor can be employed, and at high wages, when there are fertile lands or good sites to work upon, tools to use, available wealth to pay and support labor during the process of production (if roundabout), and a prospect of a return sufficient to compensate for the outlay. A

[1] Chapter IV (of Part II), § 1.

protective tariff does not increase or improve the lands or the sites; it does not multiply tools or increase wealth, but tends rather towards national poverty; it does not, for industry as a whole, improve the prospects for large returns, but has, rather, the reverse effect.[1] How, then, can a protective tariff increase employment?

§ 4

The Home Market Argument for Protection

In political struggle, it is usually fatal to antagonize any very large class. So in order to carry through a protective policy, it has been necessary, in the United States, to convince not only wage workers, but farmers as well, that the policy would benefit them. While many products of the farms, *e.g.* raw wool, have been protected, yet it has been difficult to show that the great agricultural staples, such as wheat, corn, and cotton, have been appreciably raised in price by the tariff [2] or that the tariff *could* directly raise their prices. The appeal to American farmers has therefore taken the form, in part, of asserting an indirect benefit of protection, through the establishment of a "home market." The "home market argument" points out, to begin with, that a protective tariff increases the number of persons engaged in the protected industries, *e.g.* manufacturing. Those thus

[1] *The Arguments of Schuller* (Schutzzoll und Freihandel, Vienna — Tempsky —, and Leipzig — Freytag —, 1905, pp. 75–84) to the effect that industry in any country is not rigidly limited by the factors of production, but may vary within wide limits in relation to these factors, proves nothing whatever for protection, unless it is also shown that industry is likely to fall short of its maximum, under free trade, and more nearly to approximate its maximum, under protection. For such a contention (aside from possible transitional effects during adjustment to a changed policy), there seems, to the present writer, no reasonable justification either in theory or in direct experience.

[2] See Ch. V (of Part II), § 5.

led to engage in manufacturing then have to buy the products of the farms, and so the farmers secure a home market for these products.

The answer to such an argument has already been indicated in our discussion of the effects of a protective tariff on exports.[1] If we of the United States refuse to buy goods from abroad, and so develop the production of those goods at home, to just that extent, in the long run, will we be deprived of an opportunity to produce goods profitably for export. The farmers can only gain a home market by losing a foreign market. And the extra prices they have to pay for goods, especially protected goods, because of the tariff, will cause them to suffer a net loss.

Sometimes the argument in favor of the development of a home market takes a slightly different form. Instead of its being asserted that the protected manufacturing industries will not exist or will not be so widely extended without a tariff, emphasis is placed on the contention that they will not be so prosperous. Those engaged in them will earn less. If the manufacturing industries are protected, it is urged, the farmers may, indeed, have to pay more for manufactured goods; but those engaged in manufacturing will then have more money with which to purchase the farmers' products, and so the farmers will get their money back again. The truth is that they will not and do not get it back again unless they give something else of value in return. If a farmer pays more for clothes, because of a protective tariff, than he otherwise would, we may admit that the clothes makers will have more money (other things equal) with which to buy, if they choose to, the farmer's products; but the

[1] Chapter IV (of Part II), § 1.

farmer does not get back this extra money for nothing; he must give extra products for it. To assume that the farmer does not have to give extra products to get back the additional money paid for the higher priced clothes, is to assume that the protected industry is not encouraged by the higher prices the farmer pays for its goods; for this is to assume that the higher prices so paid by the farmer for the protected goods, are balanced by higher prices which those in the protected industry must pay for the farmer's products. This would mean no change in the relative positions of farmer and manufacturers because of protection, save a merely nominal change. The idea which protectionists who use this "get it back again" argument endeavor to convey is that, somehow, producers of protected goods get larger real incomes because of the tariff; while, at the same time, those whose purchases of goods at higher prices make these larger incomes possible, lose nothing by the system.

The absurdity of such an argument is perhaps best shown by an illustration. Suppose that, in a small town, there are a number of robberies, as a result of which each of the merchants of the town finds himself minus several hundreds of dollars. Finally, the thief is apprehended. But upon being accused of his crimes, he asserts in his own defence that he has really done no harm. Though he admits having robbed the various merchants of money, yet he points out that he has lived in the town and has used all of this money to buy their goods and that thus they have "got it back again." The obvious fact is, of course, that the merchants have only got their money back by giving up for it other goods of supposedly equal value.[1]

[1] Cf. Sumner, *Protectionism*, New York (Holt), 1885, p. 125.

Protection may, as we have seen,[1] benefit one section of a country at the expense of other sections; and the gains to the section benefited will perhaps be distributed among all classes. If the West and the South are taxed to develop manufacturing in Rhode Island, the Rhode Island truck farmers and dairymen may share in the local gains by virtue of having a home market provided for them at the expense of others. But to say this is very different from saying that they would gain if the local market were provided entirely at their own expense.

§ 5

The Argument for Protection to Agriculture in the Older Countries against a Future when Cheap Foods and Raw Material may not be Obtainable from the Newer Countries

An argument not generally familiar to Americans, has been used in favor of protection to the agriculture of the more crowded European countries, in particular the agriculture of Germany.[2] There is, it is claimed, too great a reliance of the older and more densely settled countries upon the new countries for food supplies and raw materials. Eventually the new countries will be more thickly settled, will, like the old, devote themselves in larger part to manufacturing, and will have smaller surpluses of food, etc., for export. Therefore, the old and thickly settled countries, which will probably have grown still more in population during the period of importing food and raw materials from abroad, will get

[1] Chapter V (of Part II), § 6.

[2] See Adolph Wagner, *Agrar- und Industriestaat*, Jena (Gustav Fischer), 1901, p. 73. A good statement of the argument is given in Taussig, *Principles of Economics*, New York (Macmillan), 1911, Vol. I, pp. 534, 535.

their food supplies and raw material with increasing difficulty. The suggested remedy is that the thickly settled countries should levy, each, a protective tariff on such imports, force its people to get along, in the main, with what can be produced in their own country, resist thus the tendency to specialize in manufacture, and so prevent the growth of a population which is dependent upon foreign surpluses for its food and necessary materials.

If the fear is that the new countries, when they come to develop manufactures, will almost without exception shut out, by protective tariffs, goods manufactured in the older countries, and so eventually compel the latter to be self-sufficient, there is reason in the suggestion that these older countries remain self-sufficient from the beginning. By so doing, they will avoid the intense suffering which must result from a return to a sparseness of population capable of securing sufficient food, etc., at home.

But if the world can be expected to attain a liberal attitude towards trade, if a tendency towards low tariffs can be hoped for (and this is perhaps more likely to be the case as the stage of infant industry is left behind), then the argument for protection of agriculture has very little force. For no matter how extensively the now sparsely settled countries eventually go into manufacturing, they will not go into it, if not artificially encouraged, unless it yields, on the average, as satisfactory returns as agriculture.[1] That manufacturing populations in the older countries will have to meet the competition of manufacturing groups in the newer, is true. But assuming free trade (and if trade is not free, then in

[1] On the margin of production.

proportion as restrictions are slight), this merely means that the manufacturing populations of the older countries, cannot charge higher prices and therefore cannot get higher wages and profits per unit product, than the manufacturing groups in the newer countries. It does not mean that the condition of the old countries must become appreciably worse than that of the new. So long as many persons in the new countries care to engage in manufacturing (and that they will do so is all that is feared), it must be that manufacturing is about as profitable as agriculture. If it were much less so, assuming free trade or any near approximation to free trade, the newer countries would withdraw from manufacturing and the older countries could carry it on without competition. If manufacturing in the new countries is as profitable as agriculture, and if trade is free, manufacturing in the older countries (assuming equal efficiency) must also be, except for the greater costs of transportation, as profitable as agriculture in the new, because as profitable, save for transportation costs, as manufactures in the new.

§ 6

The Infant Industry Argument for Protection

The argument which is usually regarded by economists as stating the best case for the protective tariff, is the so-called infant industry argument. The more careful thinkers who advance this argument admit that protection involves a cost, a temporary loss of productive power. They admit that it involves turning industry from a more productive into a less productive line. But they urge that the newly established line may be only temporarily less productive and may be eventually more pro-

ductive and advantageous for the country than the older lines of industry. It is urged that a country may have natural advantages adequate to the successful carrying on of a given industry, but that, at the beginning, the competition from more experienced management and better trained workmen abroad is likely to prevent the growth and development of the industry, and, therefore, to prevent the attainment of the greatest possible efficiency in it. Give such an industry temporary protection, it is said, so that it can get a start, and it may eventually undersell its foreign rivals. Then the protectionist country will perhaps realize a gain which will more than compensate for the temporary loss.[1]

It should be said, to begin with, that this argument for protection applies at all, only in regard to those industries in which success depends largely on acquired skill and not merely on natural advantages. It is hardly an argument, therefore, in favor of protection to much else than new manufactures, and it is not an argument in favor of perpetual protection for these. It is highly probable, however, that in some cases, if the industries to be protected are chosen wisely, and are not protected too long, the desired results can be attained. In the United States, a considerable part of the silk industry, started by protection, seems eventually to have reached a position where it can produce as cheaply as foreign concerns and where, therefore, it does not need protection.[2]

But while such suggestions have a great deal of force, the opposing considerations, especially on the practical

[1] This view was presented in Alexander Hamilton's Report on Manufactures, and later, in Germany, was urged by Friedrich List.

[2] Mason, "The American Silk Industry and the Tariff," *American Economic Association Quarterly*, December, 1910, p. 177.

side, are also not without weight. In the first place, though new industries may indeed be developed in this way, yet they can be thus developed only by drawing the labor force required, from other lines. It follows that the development of skill and the progress of invention in those other lines may be retarded as much as in the new lines they are forwarded. New ideas are less likely to be evolved among a few than among many. And in proportion as there are more persons in the new lines, there are fewer persons in the old lines. Indeed, it is not inconceivable that some of the older industries, industries still capable of further progress, may be made so comparatively unprofitable — especially if their necessary machinery or materials are taxed by the tariff — as to be entirely given up. We have already seen that protection tends to decrease the export trade [1] and that it may, by leading to rise of prices,[2] ruin other industries.[3] Before, then, protection is accorded to an infant or embryonic or projected industry, inquiry should be made as to the following points: first, as to whether that industry can be expected to develop without such aid; second, as to whether, if it will not, such aid will suffice to develop it to a point where it can and will sell its products more cheaply than they can probably be secured elsewhere, and enough more cheaply to compensate, with interest, for the loss incident to starting it; third, as to whether the attempt to encourage it might not involve a risk of discouraging other industries, which would balance any hoped-for gain.

In view of all these considerations, it becomes impor-

[1] Chapter IV (of Part II), § 1.

[2] Or a change in value relations of money systems, which acts similarly.

[3] Chapter IV (of Part II), § 6.

tant to judge the fitness of the governing body to apply such a policy, decide upon its effects, and select the industries to be encouraged.[1] It is a special function of the enterpriser-capitalist to select for his own investment (and the investments of those whom he influences) industries capable of succeeding. If he does not, the principal loss falls upon him and upon others in like situation. The community suffers only indirectly and incidentally. The enterpriser-capitalist is a product of selection. His power to direct industry into profitable channels is due to his possession of capital, or the confidence of other business men and investors, or both. His possession of capital and of this confidence, though sometimes due in part to inheritance from able progenitors or relatives, is frequently due, in no small degree, to past successes. He has the power to direct industry into those lines which he believes will pay best and which, therefore, are presumably the lines most needed by the community, because he has successfully so directed industry in the past. Men whose knowledge of law or politics has made them members of a law-making body are not, as a rule, the product of the same kind of selection. If they were, the fact that their own fortunes are not at stake does not conduce to caution. In case a new industry established by protection never becomes profitable, the loss which its establishment causes falls upon the general public and not upon legislators as such. Similarly, in case an industry is prematurely established or in case its establishment retards other industries, the loss is that of the public.

Given the present form of our own and other republican

[1] Cf. Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 140.

governments, there is a special pressure tending towards unwise selection of lines to be favored. This is the pressure of localities or, at least, of large interests in various localities. For in republican government, legislators usually represent districts, states, or other territorial units. When it is proposed to encourage various industries, when the idea of protection is politically dominant, many and influential interests in each state and district are likely to desire that the industries of that state and district shall get such help at the general expense. The tariff eventually decided upon, the tariff to which legislators from different sections can agree, is not likely to be one which even attempts, scientifically, to apply the theory of infant industry protection. Instead, it is likely to be a hodge-podge of special favors, distributed according to the relative strength of conflicting interests, and bringing general and long-continued injury to the public.

The longer such a system continues and the more extensive its application, the greater are the difficulties in the way of its reform. More and more industries are built up by tariff barriers, and their owners and workmen taught to rely upon these barriers for protection against foreign rivalry. Managerial effort, which might otherwise be devoted to development of the highest efficiency, is instead devoted to the exertion of political pressure. Every effort is made by numerous interested persons to retain and increase the favors secured. Those engaged in the industries assisted are seldom ready to consent to reduction of the tariff after a period of favoritism, however long, but endeavor, usually, to keep the protection indefinitely. Proposals for reduction are met by predictions of dire calamity, and strong opposition to reduction is thus aroused.

To the suggestion that protected industries might decline and die without protection, the answer has been made that "no industry will ever be given up except in order to take up a better one, and if, under free trade, any of our industries should perish, it would only be because the removal of restrictions enabled some other industry to offer so much better rewards that labor and capital would seek the latter."[1] There is doubtless reason in the contention that, since many persons have invested capital in the protected industries and since many others have acquired skill not equally useful in other lines, relying upon a continuance of the past policy of our government, therefore the entire protective system should not be swept away with one blow. Time should be given (as, under the tariff reduction policy of the present administration at Washington, it is being given) for adjustment to new conditions. Nevertheless, the public cannot be held to have pledged itself or to be under any obligation to maintain indefinitely the protective system. Producers must be held to have taken the risk of change, knowing eventual removal of tariff duties to be the public's privilege. Because the people have been willing to pay higher prices for goods during a limited period, it does not follow that they are duty bound to suffer an equivalent annual loss through all future time.

§ 7

The Argument that a Protective Policy should be Followed in Order to Diversify Industry

It is also sometimes argued that protection is of use to *diversify* industrial activity within a country. We

[1] Sumner, *Protectionism*, p. 130.

have already seen that, while the protective policy encourages protected industries, it may cause the decline of others. Yet if applied carefully and consistently with the object of diversification in view, it is probable that a high tariff would increase the number of industries carried on.

It does not follow that prosperity would be increased. There is no special advantage in having a larger number of occupations carried on when the average income is reduced by having them. As a matter of fact, a large country like the United States, with a wide range of natural resources and a versatile population, would be certain to have diversified industry within its borders, under either protection or free trade. With its mines of coal, iron, copper, etc., the United States could hardly fail to be not alone an agricultural country, but a manufacturing country as well.

§ 8

The Argument that Protection should be Applied as a Means of Getting and Maintaining a Certain Degree of National Self-sufficiency

Not all of the arguments for a protective tariff are strictly economic in character. There is, for instance, the argument that protection should be used to insure national self-sufficiency. This argument, in so far as it carries great weight, is of a military significance. It is urged that a country at war with another or others, is likely to have its foreign trade seriously interfered with.[1] If the country in question has relied on foreign

[1] It may, of course, be interfered with to some extent if another country or other countries, with which it habitually trades, are at war. But only a part of its foreign commerce is likely, in that case, to be affected.

trade for the necessaries of life, it will be subject to a considerable strain during the war period, and perhaps will be less able to carry the contest to a successful conclusion. If it has relied upon foreign trade for firearms and ammunition, it may be in no better position. It is asserted, therefore, that a country should adopt the policy of producing all necessaries, including all things required for war purposes, within its own borders, even though to do this brings economic loss.

It must be admitted that this argument, like the argument for protection to infant industries, is not without claims to a respectful hearing. There are, however, some considerations of importance on the other side. In the first place, close trade relations, such as are more likely to follow from a free trade or from a low tariff policy than from protection, do much to promote international good feeling and, therefore, to prevent the occurrence of war. And in the second place, even if war does occur, it may well be that the larger wealth and population made possible by a liberal trade and tariff policy will give greater military strength, through the larger fighting force which can thus be supported, than would any degree of national self-sufficiency.[1]

In this connection we may cite the case of Great Britain. If national self-sufficiency is imperative, there would seem to be nothing which it would be more important to produce in the home country than food. Had Great Britain persisted in a policy of excluding foreign grain and compelled her people to live upon what they could themselves produce, she would have been aiming at this ideal of self-sufficiency. Had Great Britain carried out such a policy, however, her population

[1] Sumner, *Protectionism*, p. 143.

could not have become so great by many millions as it has, nor could her wealth have become so great. She has chosen rather to specialize in production, to import foodstuffs, to attain a numerous population and large wealth. She is not, it is true, self-sufficient in time of war. She must rely for her food upon lands across the seas. But the wealth which a free trade policy has brought her makes possible the maintenance of the most powerful navy in the world, a navy by means of which her commerce is protected. Is England not a stronger nation, a richer nation, and a not less independent and happy nation, than she could have been had the contrary policy been followed?

§ 9

Free Trade within the United States

With the exception of political or military arguments, practically every consideration advanced in favor of tariff duties on goods produced in foreign countries, could be urged with no less (and no greater) plausibility in favor of tariff duties levied by one State or section on goods produced in another State or section. Is it suggested that we do not wish to send money out of the country and that to do so makes us poorer? An exactly parallel argument would assert that we should adopt measures to keep money from being sent out of the State or the county. Do stanch protectionists tell us that to let goods come in from abroad at low prices, must lower American wages? If so, then for Ohio or Illinois to let low-priced goods be imported from New York or from Pennsylvania, must tend to make wages in Ohio and Illinois lower than they otherwise would be. If to shut out English goods from the United States makes

additional employment for American wage earners, then to shut out Connecticut goods from Rhode Island must make additional employment for Rhode Island wage earners. It is hardly necessary to pursue the comparison further. Carried to its logical conclusion, the system of protection would prohibit all trade and, therefore, all the gain in wealth which flows from trade.

Fortunately, the Federal Constitution makes tariff barriers between the different states of the United States impossible. If it did not, we should doubtless find some of our states levying protective duties against their neighbor states, as Massachusetts, New York, and Pennsylvania did under the old Confederation of 1781.[1] As it is, trade between the states is, for the most part, regarded with equanimity. The coal of Pennsylvania is exchanged for the shoes, woolen and cotton goods, clocks, etc., of Massachusetts, Connecticut, and other New England States. The wheat, corn, and meat of the Middle West, and the cotton, rice, and sugar of the South, are sold throughout the country, and the special products of other sections are given in payment. When improvements in transportation facilities make low transportation rates possible, we regard the consequent reductions as cause for rejoicing, because of the stimulus thus given to trade. There is no reasonable doubt that free trade within the borders of the United States adds greatly to our national prosperity and adds, also, to the prosperity of each separate state. To widen this free trade area, so far as lies within our power, would still further increase our economic welfare.

[1] Hart, *Essentials in American History*, New York (American Book Co.), 1905, p. 199.

§ 10

Ethical Considerations Bearing on the Policy of Protection

Before concluding this discussion of the high tariff system, let us consider briefly the moral issues involved. The maintenance of this system means that wealth is to be gained, in the favored industries, not by serving the public well, not by giving to the public better goods than could otherwise be secured or goods at lower prices than must otherwise be paid, but by depriving the public, through influence on legislation, of such benefits. The maintenance of protection means that political influence calculated to injure the community will often bring larger returns to those who wield it than would business carried on in rivalry with others for the benefit of the community. As a consequence, energies which might be devoted wholly to legitimate business, that is, to seeking profit through efficient service, spend themselves instead in selfish political activity, in the attempt to make impossible any rivalry in service from foreign producers, in the attempt to force higher prices from consumers, and so to realize, at the expense of consumers, higher profits than are earned. If the ideal of industrial morality is that profit shall be in proportion to service, if to seek profit by disservice is immoral, then the selfish attempt of private interests to realize wealth by arbitrarily shutting out foreign competitors through tariff restrictions, like the attempt to shut out domestic competitors through seeking railroad discriminations, violates this ideal and is immoral.

§ 11

Summary

In this chapter the attempt has been made properly to estimate the value of most of the standard arguments for protection. The argument that protection increases national prosperity by getting and keeping more money in circulation in the protectionist country was shown to be fallacious, since money is not the ultimate or principal end of trade. The popular "wages argument" for protection, so much used in political campaigns, was shown to have little better basis. Money wages tend to be somewhat higher because of the tariff,[1] but real wages are almost necessarily lower. The much feared "competition of cheap foreign labor" is beneficial to our wage earners when it means cheap goods from abroad, and is injurious to our wage earners only when it means immigration of this cheap labor. Those who attempt to show, inductively, *e.g.* by comparison of English and American wages, that protection makes wages higher, fail to take other things, such as relative density of population, into account. The argument that protection increases the opportunities for employment was likewise shown to be untenable. It increases employment in any industry only by making that industry more profitable. But in so doing it makes other industries less profitable. Natural resources and accumulated capital, which make employment at remunerative wages possible, are not increased by protective tariffs.

The third argument considered was the so-called "home market" argument. This is one of the principal

[1] Except, of course, in the case of unrelated currencies. See Ch. V (of Part II), § 3.

arguments by which the farmers' votes are sought for the protective policy. Examination showed that the gaining of a home market by protection involves the losing of a foreign market in whole or in part, and that the higher prices which protection makes farmers pay for goods are not compensated for by the fact, supposing it to be a fact, that those to whom the money is paid have more money with which to buy farm produce.

An argument having, if convincing, more significance at present for Europeans than for Americans, is that in favor of protection to agriculture, as security against a time when the newer countries may be less inclined to buy manufactured goods of and sell food-stuffs, etc., to the older ones. We saw, however, that if future trade is unimpeded or is impeded only by low tariffs, the older countries can always have a market for their manufactures without having to accept returns less by much more than necessary transportation costs, than those of manufacturing industries, and, therefore, agriculture, in the more largely agricultural countries. Unless great restrictions on future trade are feared, this argument for protection to agriculture has little force.

Protection to infant industries has been urged, even by some careful thinkers, as a desirable temporary policy. The principal objections are practical. It is difficult to be certain that the development of other industries is not being hindered as much as that of the favored industry is being helped. It is difficult to be certain that the protected industry will eventually reach a point of development such that the cheapness of its products will repay the public for the admitted temporary loss. It is doubtful if a legislative body is usually competent to select industries for protection, on this principle, and it

is probable that, in practice, political pressure from interested parties in various localities will play much too great a part. There is danger that the temporary protection will be continued much longer than is necessary or desirable, since its beneficiaries seldom want to give it up.

Protection is also urged as a means of diversifying industry, and it probably has somewhat this effect. Yet diversification can be purchased at too great a cost. And a large country, with varied resources, is pretty sure of a considerable diversity of industry, even without protection.

The argument for protection to insure national self-sufficiency is, in the main, a military argument. National self-sufficiency is undoubtedly an advantage in time of war. So is large population and great wealth. Protection tends to increase the degree of self-sufficiency and to limit wealth and (consequently) population. It cannot be definitely asserted, therefore, that protection has often an adequate military justification. The greater wealth and population resulting from a free trade policy may mean the possibility of a larger army and navy and a greater safety from attack.

Most of the arguments for protective tariffs on foreign produced goods (though not, of course, the military argument) might be used with equal plausibility in favor of protection by one part of a country against goods produced in another part. It is generally taken for granted, however, at least in the United States, that free intranational trade brings benefit to each separate state or other section of the country. If so, free trade with foreign countries would, in the same way, bring gain to the nation as a whole.

The industrial and commercial ideal is that wealth shall be gained by service to the community and not by injuring the community. Tested by this ideal, the effort of interested parties to get protection for their industries is morally wrong. For they are endeavoring to gain business and wealth by prohibiting a foreign competition beneficial to the public, instead of by serving the public better than do their foreign rivals.

CHAPTER VII

The Nature and Effects of Bounties

§ 1

Bounties as Compared and Contrasted with Protection

Somewhat similar in principle to an import protective tariff is a bounty. A bounty is a payment made at intervals by government to the persons engaged in some industry which it is desired to encourage, in proportion to the quantity of goods turned out or sold or in proportion to the quantity exported. The purpose is, or purports to be, the encouragement and development of the industry receiving the periodic payment. A bounty is like protection in that it tends to divert industrial activity into a different line or lines than such activity would otherwise follow. Thus, to use our previous illustration, Canada could, by means of a bounty as well as by protection, encourage Canadian production of linen. The beet sugar industry in continental Europe has been, largely, so encouraged. Likewise, by means of bounties or so-called shipping subsidies, a number of countries have endeavored to build up their shipping interests.[1]

On the other hand, the bounty differs in several respects, in its application, from protection. To begin with, a protective tariff encourages an industry by guaranteeing it the home market, *i.e.* by shutting out goods from abroad. But a bounty does not attempt to inter-

[1] See discussion of shipping subsidies in Ch. VIII (of Part II), § 2.

fere with foreign competition. It endeavors, rather, to enable the home producer more easily to meet foreign competition.[1] The one method, protection, directly *shuts out* rivals. The other method provides home producers with the means to *drive out* rivals.

It follows, as a second and related distinction, that, while a protective tariff enables the protected producers to charge more for their goods, a bounty puts the favored producers in a position to sell their goods for less than they could otherwise afford to take.[2] It is thus that these producers are enabled to capture the business. A bounty may, because of this difference from protection, divert industry out of its natural channels to a greater degree than a protective duty. For the latter can do no more than guarantee the home market to producers who, since they need protection at home, are unlikely to get any considerable business elsewhere; and in fact, protection, by causing inflow of money and higher money costs, is likely to have the effect of making invasion of foreign markets more difficult than before. But the former, a bounty, may make it possible for an industry, through competition in lower prices, to capture the markets of the world, though very probably at great expense to the taxpayers of the bounty-paying country.

Third, the burden of protection falls upon the buyers of protected goods in proportion to their purchases of these goods; while the burden of a bounty falls upon taxpayers in proportion to their respective contributions to the tax fund. Protection compels consumers to pay higher prices. A bounty compels citizens to pay higher taxes.

[1] Cf. R. Meeker, *History of Shipping Subsidies* (in Publications of the American Economic Association, August, 1905), p. 172.

[2] Cf. *ibid.*, p. 173.

§ 2

The Various Possible Effects of Bounties on the Level of Prices

The effect of a bounty on the general level of money prices in the bounty-paying country is similar to that of protection. We may, for the purposes of our discussion, distinguish three cases. In the first case, the bounty acts like a protective tariff in that it decreases imports. Thus, Canada might have a bounty of 43 cents a yard or slightly more, on linen cloth, which would enable the Canadian cloth producers to sell at home for $1 or slightly less a yard, instead of $1.43. As a consequence, we may suppose, the Canadian cloth producers would be able to get complete control of the home market. Then, as in the case of protection, no money would flow to Ireland or elsewhere, for linen. But foreign consumers would still buy Canadian wheat, and there would be a tendency for prices in general, in Canada, including the price of linen, to rise.[1] Eventually Canadian prices would be enough higher than before, as compared with foreign prices, to bring back equilibrium in trade. If Canada's currency system were unrelated to the systems of other countries, if, for example, it were based on inconvertible paper, the rise of money prices would not take place, but equilibrium of trade would eventually result through a change in the relative values of Canadian and other currencies.[2]

In the above assumed case, we have supposed a bounty not quite high enough to make it easy or perhaps possible,

[1] This might lead, as in the case of protection, to a demand for a greater bounty, or to a demand for bounties to industries previously not encouraged. See Ch. IV (of Part II), § 6.

[2] See Part I, Ch. VI, §§ 6, 7, 8, 9, and Part II, Ch. IV, § 3.]

for Canadian linen producers to meet transportation costs and invade foreign markets. Let us now suppose a bounty of 60 cents a yard. With a production cost of $1.43, this bounty would reduce the net cost to 83 cents a yard. Even after paying transportation costs, Canadians could then perhaps sell linen abroad for 85 or 90 cents a yard, thus greatly increasing their business and driving out foreign competitors. In this case, not only would Canadian importation of linen be decreased, but Canadian exportation of linen would be greatly increased. As a consequence, there would be a net inflow of money into Canada and a relative rise of Canadian prices. This rise would continue until equilibrium became established either by larger purchases of Canadians abroad, or by smaller purchases of foreigners in Canada, or by both. Thus, Canadians might even, if prices should rise sufficiently, buy goods abroad which they had previously produced at home. If so, other Canadian producers would clamor for bounties or for protection. Nevertheless, an equilibrium of trade must eventually be established.[1]

The third case would be realized if, at the time of establishing a bounty on linen manufacture, Canada was already largely supplying the world with linen and could not hope greatly to extend her foreign market. In this case, the effect of the bounty (assuming free competition among present and potential Canadian linen producers) would be to lower the price of linen without correspondingly increasing its sale. Less money would therefore flow into Canada, while as much as before would flow out. Other things equal, there would be a net outflow of money, and money prices would fall. It hardly needs

[1] Cf. Ch. IV (of Part II), § 6.

to be stated that, if Canada's money system is assumed to be different from those of other countries, there would be a change in the value of Canadian money in terms of other money, rather than a fall in Canadian prices.[1]

§ 3

The Various Possible Effects of Bounties on the General Welfare in the Bounty-paying Country and in the Countries with which it Trades

Consideration of the effects of a bounty on the general welfare of the bounty-paying country and of the countries with which it trades, may profitably follow the line of the above three cases. In the first case, where it decreases imports by enabling the home producers to gain the home market but does not enable them to gain a foreign market, the bounty acts substantially like a protective tariff. It tends to prevent imports but not to stimulate exports. It conduces to national self-sufficiency. It prevents what would else be a profitable trade. Like protection, it turns labor and capital away from the channels they would naturally follow, away from what are presumably the most profitable channels, into channels favored by law. The effects on total production are obviously the same, whether diversion is caused by protection or by bounty.

Not only is the bounty-paying country injured, but also the countries with which it trades are, presumably, to some extent injured. These other countries lose a profitable export trade, and they do not secure goods more cheaply from the bounty-paying country since the bounty is not high enough, in the first case discussed,

[1] See, particularly, Part I, Ch. VI, §§ 6, 7, 8.

to encourage sales abroad by the recipients of this bounty.

The second case to be considered is that in which the bounty encourages export by the bounty-paying country, of the goods on which the bounty is paid. If desired, the bounty may be paid only on exported goods. In this second case, as in the first, the prosperity of the bounty-paying country is made less than it otherwise might be. Industry is turned from more profitable into less profitable channels. Trade with other countries is not prevented to the extent that it is in the first case or in the case of protection, and may be actually increased. But the trade stimulated is not relatively a profitable trade. The export of linen by Canada, in our illustration, takes the place of other exportation more profitable to Canada or of internal trade which would be more profitable. It is as uneconomical to encourage a trade which would not otherwise take place, as to discourage, by protection (or by high export taxes), trade which otherwise would take place.

The effect of the bounty on other countries than the one which pays it, is, in this second case, beneficial. We know that other countries would gain by the trade if the new industry were one which became established in the bounty-paying country because of suddenly discovered natural resources or because of acquisition of skill. And as far as other countries are concerned, the bounty has the same effect as either of these other causes of development of the favored industry. It is no longer desirable for them to produce the goods in question for themselves. These goods can be got more cheaply at the expense of the taxpayers of the bounty-paying country. The persons in other countries, who

formerly produced these goods, must, it is true, change their occupation.[1] But there are presumably other occupations equally or almost equally, profitable, and the consumers of these other countries gain, therefore, more than the producers lose.[2]

In the third case, the bounty does not appreciably increase the sales abroad by the favored producers of the bounty-paying country, but simply results in their selling about the same quantity of their goods at lower prices. In this case, the loss to the bounty-paying country is more obvious than in the other cases, while it is even clearer than in the second case, that foreign countries gain. Since the bounty simply lowers prices without extending trade, it benefits foreign consumers without driving any foreign producers from the line of production favored into other lines.[3]

[1] The trade between second and third countries and their relative gains from trade, may be affected. A bounty on the production of linen in Canada may, by encouraging export of Canadian linen, drive Irish manufacturers out of, say, the German market. Irish linen producers are injured. German linen consumers are benefited. But Ireland can get its own linen, thereafter, more cheaply by importing it from Canada, and gains in so far as linen is desired to use. Ireland is injured in so far as Canada enters trade as her competitor in selling linen to Germany, but this loss is balanced by Germany's gain. Ireland gains in so far as she secures linen from abroad more cheaply than she could make it herself. It becomes more economical for Ireland to devote herself to some other line or lines. If the new products which she now endeavors to export are less desired abroad than the old, the rate of trade will tend to become somewhat less favorable to Ireland and more favorable to these other countries, than before. Ch. II (of Part II), § 2. Ireland will also, probably, become somewhat more self-sufficient. But the conclusion remains that when all other countries except the bounty-paying country are considered, the general result is favorable. See, however, Ch. IV (of Part II), § 6.

[2] See Ch. IV (of Part II), § 2.

[3] There is a tendency, also, for the rate of trade to become more favorable to other countries and less so to the bounty-paying country. Money flows out of the latter and into the former. Prices fall, relatively, in the latter and rise, relatively, in the former, though this change would probably be slight in the case of a bounty on only one kind of goods. Hence, foreign countries may be

England was for a long time a very great gainer by virtue of the export bounties paid on beet sugar until 1903,[1] by the beet sugar producing countries of continental Europe.

Had only one such country adopted a bounty-paying policy, the effect would have been much larger exports of sugar for that country and a slightly lower price of sugar for buying countries. This is the kind of situation discussed in our second case. But when all the European beet sugar countries were simultaneously paying bounties on exported sugar, the net result was that no one of them could extend its export trade to anything like so great a degree, while all of them had to accept very low prices for their product. There was then a closer approximation to the conditions described in our third case, though probably, since beet sugar largely displaced cane sugar from the West Indies and elsewhere, the conditions of case 3 were not realized.

However this may have been, it is obvious that the sugar consumers of other parts of the world were great gainers by virtue of these bounties, and gainers at the expense of the bounty-paying countries. Particularly did the bounties redound to the profit of free-trade England, whose people were not prevented by tariff restrictions from securing the sugar cheaply.[2] So it resulted that the English were able to consume several times as much sugar per capita as, for instance, the

able to buy other goods than the favored kind more cheaply than before from the bounty-paying country, while having higher money incomes with which to buy.

[1] Fisk, *International Commercial Policies*, New York (Macmillan), 1907, p. 137.

[2] Although eventually, because of colonial sugar interests in the West Indies, England supported the general agreement to discontinue the bounty competition. It does not follow, of course, that England acted wisely in so doing.

bounty-paying Germans.[1] Furthermore, all those British industries which depended upon the use of sugar prospered in a large degree.[2] In the confectionery and preserving trades, thousands of persons were employed and many thousands of tons of sugar were annually used.

If, in some distant future, the philosophy of protectionism comes ever upon the discredit which it deserves, the descendants of those whose taxes supported the favored business of sugar production may at least console themselves with the thought that many foreigners were benefited. Though the bounties turned industry from its natural channels, though they caused the consumption of beet sugar, when cane sugar would have involved a less labor cost, though they diminished the economic well-being of the world as a whole, though part of the taxpayers' burdens was therefore in every sense a net loss; yet another part of their burdens was compensated for by extra gains, in the form of cheaper sugar, to the people of a neighbor nation.

§ 4

The Various Possible Effects of Bounties on Wages and Rent

A bounty, or system of bounties, would usually affect money wages as compared with real wages, just as does a protective tariff. The immediate effect of a bounty would be to tax the people more than it lowered the price of the goods favored. For illustration, suppose that Canada can buy linen, in Ireland, for $1 a yard, while the cost of linen produced in Canada is $1.43. By granting a bounty of 43 cents or of 53 cents, the

[1] Sumner, *Protectionism*, New York (Holt), 1885, p. 81.
[2] *Ibid.*, p. 86.

Canadian government enables home manufacturers to sell linen at $1 or at 90 cents a yard. The people of Canada lose, as taxpayers, 43 cents to gain nothing, or 53 cents to gain 10 cents. Unless the taxes are so levied that they do not fall upon and cannot be shifted to wage earners,[1] real wages must be lower.[2] This remains true after the inflow of money which raises prices (or the outflow — case 3 — which lowers prices). For money prices and money wages will tend to be affected in equal proportion by the change in money supply. A bounty on exports only, may lower the price of the favored goods, to foreign consumers, at the expense of taxpaying citizens of the bounty-giving country, while it will not lower the price to domestic consumers.

§ 5

Why Bounties may be Less Objectionable than Protection if Encouragement of Infant Industries is in Any Case to be Attempted

The bounty method has sometimes been recommended as superior to the method of protection, for the establishing and developing of an infant industry. Since the bounty system is more clearly seen to involve taxation, public support is less likely to be given to schemes for its widespread application. It is perhaps not quite so unlikely that care will be used in deciding upon the industry or industries to be favored. For the same reason, the likelihood that the bounty will remain a permanent burden upon the general public may be somewhat less.

[1] Even if the necessary taxes fall in no sense upon wage earners, and so really raise wages, they raise wages less by turning labor into unprofitable lines than if the money were directly paid to wage earners, as a forced charity.

[2] There is, however, as with protection, a conceivable exceptional case. Cf. Ch. V (of Part II), § 5.

§ 6

Summary

A bounty, like protection, is a special favor granted by government to some industry or industries. It differs from protection in that it does not tax foreign competition, but enables the domestic producer to meet it, in that it lowers instead of raises the price of the favored goods, and in that the burden falls upon taxpayers as such rather than upon consumers. A bounty may simply insure domestic producers their home market, or it may be high enough to enable them to meet transportation costs and increase their foreign business, or it may enable them to sell the same amount of goods abroad as before, at lower prices. In the first two cases, the level of prices in the bounty-paying country will rise as compared with the levels in the countries with which it trades. In the third case, the level of prices in the bounty-paying country will fall. In all three cases, the effect on the national prosperity of the bounty-paying country will almost certainly be unfavorable. In the second and third cases, other countries will be likely to profit to some extent at the expense of the taxpayers in the bounty-paying country. Since a bounty system tends to burden the taxpayers, with no corresponding gain to the general public, it tends to lower real wages, for it can hardly be supposed that wage earners will be unaffected by the level of taxation. If an infant industry is in any case to be established, however, the bounty method may be better than the method of protection.

CHAPTER VIII

Uneconomical Government Interference with, and Encouragement of, Transportation

§ 1

Navigation Laws

One of the important methods which governments have sometimes followed in order to develop a national mercantile marine, has been the method of navigation acts, excluding foreign vessels from certain designated commerce. For example, England's navigation acts of 1646 to 1660 (act of 1651 perhaps of chief importance), prohibited the importation of any goods into England or Ireland or any of the British Colonies, except in British ships, owned and navigated by British subjects, or in ships of the country where the goods were produced; also these laws prohibited the export to foreign ports of any goods produced in the American colonies, except in British ships.[1] Our own Federal law regarding the coasting trade is of the same genus. This law requires that "no merchandise shall be transported by water, under penalty of forfeiture thereof, from one port of the United States to another port of the United States, either directly or via a foreign port, *or for any part of the voyage*, in any other vessel than a vessel of the United States."[2]

[1] See Lindsay, *History of Merchant Shipping*, London (Low, Low and Searle), 1847, Vol. II, pp. 182–189.

[2] 30 Stat. L. ch. 26, p. 248. Referred to in the Report of the Commissioner of Corporations, on *Transportation by Water in the United States*, Part

Such navigation acts are closely analogous to protective tariffs. Like protection, they develop the favored home industry by excluding foreign competition, not, as in the case of the bounty, by providing funds to help meet this competition. Like protection, these laws can do no more than guarantee home patronage; they can not insure successful invasions of other commerce, dependent solely on foreign patronage. As with protection, the burden of these laws rests upon consumers (of goods carried in the protected ships), rather than upon taxpayers as such. The burden rests upon consumers, because the exclusion from the designated commerce, of ships presumably able to carry goods more cheaply than the favored domestic ships,[1] tends towards high transportation rates, and, therefore, towards higher prices to consumers, of goods carried, or towards decrease of domestic commerce, or both. The burden of such a policy may not be equally distributed over a country enforcing it, but may rest with especial weight upon those sections of the country which, being on or near the coast line, have most to gain from cheap water transportation. A navigation policy like that established by the historic navigation laws of England, above mentioned, may also tend, by increasing transportation costs, to limit the export trade of the country adopting such a policy. Only in case other countries have no available alternative source of supply for goods desired, can the extra cost of

I, 1909, pp. 118, 119. Since the above was written, Congress has passed a law (August, 1914) admitting foreign-built ships to American registry if owned or purchased by Americans (See *New York World*, Aug. 18, 1914). Such vessels were not previously ranked as American and had to sail under alien flags. But the new law does not permit foreign-built ships to engage in the coasting trade.

[1] If the latter carried goods more cheaply, they could drive out foreign rivals without legal aid.

carrying these goods rest as a burden on the consumers of those other countries.

The main argument against navigation laws is the same as that against protection. Like protection, it diverts labor and capital from lines which they would otherwise follow, into relatively unprofitable lines. These laws are, therefore, as indefensible, economically, as are protective tariffs. Where navigation laws would be likely to develop a national marine, able, eventually, to compete in the world's commerce successfully without aid, there is a reasonable probability that conditions are favorable to this success and that it would be attained in time without government coddling. Where, in spite of navigation laws intended to develop a national marine, ability to compete outside of the protected limits is never attained, the protective laws involve a continuous burden on the general public. Whatever military justification may exist for such protection to national navigation, economic justification is usually absent, and is probably always of doubtful weight.

§ 2

Subsidies to Native Shipping

Another method of encouraging a national mercantile marine is that of paying so-called shipping subsidies. Shipping subsidies are simply bounties paid to the shipping industry. What was said in Chapter VII (of Part II) regarding bounties applies, therefore, to shipping subsidies. Like bounties and like protective tariffs, shipping subsidies divert national industry out of its natural lines into a line which, without such encouragement, it probably would not follow, or which it would not follow to

the same extent. Unlike protection, subsidies do not exclude foreign competition, but simply endeavor, by money payments, to make it possible for the national marine to meet this competition. As with other bounties, therefore, the burden falls upon taxpayers, rather than upon shippers or ultimate consumers. The two last classes may even gain somewhat, if a subsidy is sufficient to cause lower freight rates in spite of the greater cost of transportation in native ships. But even these classes will gain nothing if a subsidy is just high enough to enable native ships, previously unable to compete, to charge rates no higher (and no lower) than those charged by foreign ships.

One of the cruder arguments for subsidies, as for protective tariffs, is to the effect that when we patronize foreign vessels we have to send our money abroad, and that we would "save" this money if we carried the freight in our own vessels. As a matter of fact, money is not the one thing for which trade, in the last analysis, is carried on. Furthermore, if money flows out unduly, it thereupon begins to flow back again, in accordance with the principles which we have so often set forth in previous chapters.[1] As regards the most economical directions of industrial and commercial development, it should be apparent that if British or other ships can carry goods more cheaply than our own merchant marine, then our labor may better be devoted to the lines where it yields greater returns, to services which others cannot so well perform for us, to our factories, farms, mines, and railroads. If American labor is more profitable when devoted, for instance, to the running of railroad trains, then it is poor economic policy to draw it, by subsidies, into the running of ships.

[1] See, for example, Part I, Ch. V, §§ 6, 7, 8.

Another argument for subsidies is based on the assertion that "trade follows the flag." This assertion, used in relation to subsidies, suggests that a national merchant marine acts as a species of advertisement, that, for example, the American flag flying at the mast head of a merchant ship will stimulate a desire in South America or elsewhere, to examine, and, therefore, eventually to buy, American goods. Except for purposes of advertisement, foreign ships serve as well to carry American goods to market as do American ships, and better in proportion as they carry these goods more cheaply.

Probably there is some advertisement for a country's goods in the ubiquitousness of its merchant ships. Yet we must beware of exaggerating the amount and the value of this advertisement, and of overlooking its cost. France has made considerable effort to develop shipping and has hoped thereby to develop foreign commerce, while the United States has done almost nothing to stimulate foreign trade in American ships; yet a practically stationary foreign commerce of the former country has been contemporaneous with an extensive growth of the commerce of the latter.[1] "The history of the world's commerce seems to show conclusively that the nationality of ship owners is quite a secondary matter in the development of trade." [2]

So far as the presence of a nation's ships, *e.g.* American ships, on the high seas and in foreign harbors, really tends by its advertisement to stimulate American export trade, it would seem that the persons having to pay for this advertisement should be those who expected to reap special gain from it. Why should not merchants

[1] Meeker, *History of Shipping Subsidies* (in publications of the American Economic Association, August, 1905), p. 213. [2] *Ibid.*

and manufacturers who are interested in exploiting the trade of any part of the world, and who seriously think that the presence there of vessels flying the American flag will bring them a larger market, be willing to subscribe to the stock of American lines, or pay a little extra to have their goods carried in American vessels, or both? Is it not possible that American merchants and manufacturers will not do this to any great extent, because the gain would be so small as not to equal the cost? Hard-headed business men spend a great deal of money in advertising. Some of them are enthusiastic over the assumed gains of this particular kind of advertising if it is proposed that it shall be done at public expense by means of subsidies. But would they consider the rather problematical results of such indirect and indefinite advertising worth paying for out of their own business profits? By the subsidy method, many persons and many sections of the country are taxed to secure results which may be of little or no benefit to them and which are probably of not very much benefit to any one.

Another argument in favor of subsidies is one that corresponds to the infant industry argument for protection. It is urged, in this view, that subsidies should be given to divert industrial and commercial activity more largely into shipping, in the hope that the merchant marine will develop in efficiency until it is able to stand alone. An important counter-argument is the fact that no one is able to foresee with any certainty whether or not the shipping industry ever can stand alone and that legislators are less likely to risk the public wealth wisely than business men are to risk their own. There is great danger that subsidies, once started, would continue indefinitely on the plea that they continued to be

necessary.[1] And if, as a consequence of a subsidy system, the national mercantile marine should become larger, though at the general expense, then the political pressure to maintain the subsidy system would very probably become greater. It is altogether too probable that if the giving of subsidies is generally recognized as a proper function of government, men who would otherwise devote themselves to planning improvements and to seeking real progress in efficiency, will instead devote themselves to influencing political action, in order that they may get, or maintain, or increase, a subsidy.[2] This method of acquiring gain is not consistent with the ideal of industrial and commercial morality. Industry and commerce should be so organized that profits will be made only by serving the public, and that profits will be large to any person or firm in proportion as that person or firm serves the public well. The prosperity of those engaged in operating a nation's merchant marine ought not to be made dependent upon their political influence rather than upon their economic service.

Apart from purely economic considerations, shipping subsidies are sometimes urged as a means of increasing a nation's naval strength. Two principal naval reasons are commonly given for the maintenance of a merchant marine, even at the expense of a subsidy. The first is the desirability of having a "naval reserve" made up of large and swift merchant steamers suitable for conversion into cruisers, colliers, and transports, should need for such arise. As a matter of fact, it is only as colliers and transports that such vessels are likely to be useful, since ships of war are nowadays highly specialized, and

[1] Meeker, *History of Shipping Subsidies*, p. 81.
[2] *Ibid.*, p. 216.

merchant vessels cannot, economically, be made over into cruisers.[1] The second reason is the desirability of having experienced seamen from whom to recruit colliers, transports, and additional fighting ships when war threatens, to replace those killed and wounded, to hold captured vessels, etc.

These objects may be perfectly justifiable, even laudable, in themselves. And it may be cheaper to pay subsidies to certain lines, thus helping to keep them in ships and men capable of emergency use by government, but letting them be mainly supported by commerce, than to support, continuously, and wholly at public expense, a larger naval force. But if the policy of subsidizing ships appears necessary to us for military reasons, we should frankly recognize that this policy involves an economic loss, that it is an expense borne for the same purpose as the expense of maintaining a navy. We should not deceive ourselves into the belief that the subsidizing of ocean navigation is an economically profitable policy. We should therefore aim to get the largest military result possible at the smallest possible cost. Large payments to swift mail lines and possibly to certain other ships constructed for speed and carrying capacity and conforming, in other ways, to possible emergency requirements, mark the limit beyond which we should not go in subsidizing, even if we should go so far. Subsidies granted according to these principles are payments for certain definite services or potential services, and are not to be classed with subsidies granted for purely commercial reasons.

[1] Meeker, *History of Shipping Subsidies*, p. 215.

§ 3

Indirect Subsidies, Favoring Native Ships as Compared with Foreign Ships

A country may try to extend and develop its own merchant marine, to the consequent decrease (or slower increase) of the number of foreign ships, by indirect as well as by direct subsidies. Any service which a country, through its government, performs for its own ships without pay, while charging foreign vessels for it, is equivalent to a money subsidy.

Were it not for clear treaty obligations, there would probably be, in the United States, as strong a demand for free use of the Panama Canal by all of our American merchant ships, as there has actually been for its free use by American vessels engaged in the coasting trade.[1] To let American vessels use the Panama Canal free would be equivalent to a money subsidy, because it would amount to the same thing as to make a charge for the use of the canal and then to make a payment equalling this charge, to American shipping interests. In either case, the taxpayers of the nation would bear a burden, or lose a chance for lower taxes, that special interests might be encouraged. For if letting American ships use the canal free would mean that the canal could never pay a reasonable return on its cost, then taxpayers must meet the deficit by taxes paid to government over a series of years, in order to liquidate, or at least pay interest upon, the indebtedness caused by building. If, on the other hand, though all American ships used the canal free of tolls, the amounts collected from foreign

[1] For a discussion of the economic advisability of giving American coasting lines this special privilege, see § 4 of this chapter (VIII of Part II).

ships would suffice to pay interest on the debt contracted, still this interest might be had and more besides, were the American lines also made to contribute.[1] In other words, to allow American ships free use of the canal must, in any case, mean either a loss or a smaller net revenue yielded to the government than might otherwise be yielded. If the canal is to yield the nation a revenue because of its use by foreign ships, that revenue should be used to lighten the burden of taxation on the whole people; it should not be used to encourage a single industry by giving it something for nothing. Thus to encourage American shipping would be to give it an artificial advantage over other American industries, and would be, in so far, to interfere with the tendency of labor and capital to engage in the industries really most profitable for the nation. There is no economic gain[2] in having our commerce carried in American ships if foreign ships are able to carry it more cheaply. Nor would the prosperity of the nation as a whole, including those who bear the burden of taxation, be so much furthered by having our commerce carried in American ships which could pay little or nothing for the use of the canal, as by having it carried in foreign vessels which could pay a reasonable amount for its use without charging correspondingly higher transportation rates. Assuming these to be the relative abilities of native and foreign vessels,

[1] It is not intended to assert that either American or foreign ships should be charged exorbitant rates. Such rates on ships carrying American commerce, of whatever nationality the ships might be, would tend to discourage this commerce, even when it could pay the proper costs of its own movement and would therefore be profitable. As to the effect on American welfare of exorbitant rates charged ships not carrying American commerce, see footnote at end of this section.

[2] Unless we assume a gain from the advertisement thus secured. See § 2 of this chapter (VIII of Part II).

the foreign vessels would be a more economical means for us of carrying our commerce than our own; for them to carry it would mean either lower rates and, therefore, lower prices to consumers and higher prices to producers, or larger returns to the government, favorable to taxpayers, or both such lower rates and higher prices; for them to carry our commerce would mean gain to our people as producers and consumers, or as taxpayers, or as both. It would be desirable, therefore, for our capital and labor to seek other kinds of activity; but this is just what discrimination in the rates charged for use of the canal would prevent.[1]

§ 4

The Free Use for Navigation of Government-built Canals

Since to give free use of the Panama Canal to all American ships and to no others, seemed clearly to involve a violation of treaty obligations, Congress was content, in the Panama Canal Act of 1912, to confer this privilege only upon American ships engaged in the coasting trade. Even this lesser tolls exemption appeared to many to be a violation of treaty rights; and the law has recently,[2] at the request of President Wilson, been changed in this regard so as to require the same charges from American coasting vessels as from all other merchant ships. We shall discuss, here, the possible eco-

[1] Were we to plan,'intelligently, so to discriminate in rates charged for use of the Panama Canal, as to pay for it, as largely as possible, at the expense of foreigners, we would base the discrimination on the sources and destinations of goods carried, rather than on the nationality of the ships which carried them. Goods going to and from the United States would be allowed, perhaps, to pass through the canal at fairly low rates, lest American consumers or producers be unduly taxed; while goods going from one foreign country to another would be charged the highest rates possible to collect.

[2] June, 1914.

nomic effects of tolls exemption for American coasting ships. As we have already seen,[1] the Federal government assures American vessels a monopoly of the coasting trade, including the trade from any port of the United States to any other port, *e.g.* from Baltimore to San Francisco. Free use of the Panàma Canal by American vessels engaged in the coasting trade could not, therefore, increase our mercantile marine at the expense of foreign rivals in the trade. The primary effect of free tolls to this special class of ships would be to reduce the expense of coast to coast trade, and therefore, supposedly, to reduce rates. Possibly foreign vessels could carry at the lower rates, even without free tolls. If the coasting trade were open to foreign ships, the effect of discrimination in favor of American vessels engaging in this trade might simply be that the American ships would be able to get part of the trade away from their foreign competitors, at substantially the same rates. As it is, such free tolls would tend to make rates lower than they would else be, though much of the saving might be diverted to the owners of monopolistic navigation companies. Hence traffic would be encouraged to go through the canal, which otherwise would not.

The construction of a canal across the Isthmus of Panama, to be used without charge by American coasting vessels, would therefore mean that traffic from the East to the West, and *vice versa*, which is not worth the whole cost of carrying, might nevertheless be carried at the expense of the tax-paying public. If it is worth $5000 to get certain goods from New York to San Francisco, and the cost of carriage, including proper payment for all necessary facilities, is $6000, and if this cost is

[1] § 1 of this chapter (VIII of Part II).

covered by the charge made, the goods will not be sent. It will be more economical to have a greater degree of local self-sufficiency and less geographical division of labor. But if the taxpayers should contribute more than $1000 in the form of maintenance and running cost of the canal, and interest on its cost of construction, then the goods would be shipped, for the charge to the shippers could be made less than $5000. The total cost would be $6000 and the total gain would be $5000. There would be a real net loss. But this loss would be borne by the taxpayers, and therefore the traffic would be carried.

Again, the encouragement of the coasting trade by the building of an Isthmian ship canal to be used by coasting vessels, free of charge, might mean that goods would be carried by water or partly by water, at the taxpayers' expense, which might be more economically carried by rail. Suppose that a quantity of goods can be shipped from New York to Salt Lake City by rail for $4000, including a proper allowance for wages of employees and something towards profits. Suppose that, at the same time, the cost by water and rail, including risk, damage, longer time in transit, maintenance cost of the canal and interest on canal facilities provided, is $5000. $1000 may be saved if the goods go by rail, and to make them go by the other route, if we include interest on the cost of partly constructing this route for them, maintenance expenses, etc., would be to waste $1000. The community or the nation would be so much poorer, yet if the government were to provide the $1000 or more in the form of canal facilities paid for, eventually, by the taxpayers, shippers would gain by using the waterway route.

It is not asserted, of course, that all goods ought to pay in the same proportion to use the canal, if discriminations should prove to be practicable. If the plant is incompletely utilized, it may not be improper to let some goods go through for comparatively low rates, provided they would not otherwise go at all. But no goods ought to be allowed to go through which cannot pay at least a fair share towards running expenses, wear and tear from use, and (probably) a little towards interest. And the canal should not have been built (military considerations aside [1]), unless it was expected that the traffic through it, as a whole, would be enough cheaper to pay interest on it. To build it, if it could not be made to pay, was economic waste, was, as above pointed out, to encourage transportation not really worth its total cost to the people. Now that the canal is completed, it would be unfair to the American people as a whole that the traffic which goes through it should not, if possible, pay for it, that those who realize the chief benefit should not contribute in proportion to the benefit realized.

Here, as in the case of protection, we meet the possibility that government interference with the direction of industry may affect differently the people of different sections, benefiting some at the expense of others. It is obviously only that part of our population living on or reasonably near the coast, which has much to gain from subsidizing, directly or indirectly, coast to coast water transportation. Those living in the far interior will, in any event, have to rely mainly on other means of transportation. Yet by the scheme of indirect subsidizing under discussion, but which has, fortunately, been aban-

[1] As a matter of fact, it is hardly to be doubted that economic considerations had great weight in inducing its construction.

doned, those in the interior would be made to contribute to the cost of facilities of transportation which others use and which they cannot use in the same degree.[1]

The principles above elaborated apply equally when government builds canals in the interior, if traffic is allowed to use these canals free of charge. New York State is now enlarging the once busy and profitable Erie Canal at an estimated cost of not less than $100,000,000, in order that it may carry barges of 1000 tons capacity from the Atlantic Ocean to the Great Lakes and *vice versa*. The plan is to charge nothing for the use of the canal. This will mean a burden on the taxpayers of the state, an uncompensated loss to the taxpayers in those parts of the state which cannot economically use the canal either to market their produce or to obtain goods for consumption. It amounts to a gift by the taxpayers of the state of New York to those producers and consumers in other states, who can sell their products for more or buy desired goods for less, because of the free use of the Erie Canal. It involves encouragement to transportation via the canal of goods which might better go by railway or by the St. Lawrence river. If the traffic which is expected to use the canal would be able to pay the cost of operation and maintenance, and interest on the $100,000,000 or more sunk and to be sunk, then it should be charged this cost and interest, to the end that those who reap the benefit of the canal in lower cost of carriage, and in prices of goods higher to producers and lower to consumers, shall pay for the advantage so se-

[1] An excuse for such discrimination against dwellers in the interior might perhaps be found in the fact that those living on the coast chiefly bear the burden resulting from the limitation of the coasting trade to American vessels. Two policies, each tending towards economic waste, would partially offset each other as regards inequality of effect.

cured; and that those who reap the most gain shall pay the most; and to the end that the burden shall not fall upon the general public without any regard to proportionate use and to benefits received.[1] If, on the other hand, it is not believed that those using the canal can meet such charges and still find it profitable to carry goods over it, then we must conclude that the canal ought not to be (or, in part, to have been) enlarged, since the total expenses, including cost of this enlargement, of carrying goods over it, will probably be greater than the benefits to be received from transporting the goods, or will be greater than if the goods were carried over another route, *e.g.* a railroad.

Before the days of railroads, much confidence was felt in the possibilities of canals. A number of our states expended a great deal of money in canal building. To-day it is generally recognized that, since the capital cost of canals is a tremendous initial expense, railroads are generally cheaper. Only in a comparatively few cases can canal building be expected to pay. These are, first, cases where the canals connect navigable waters located near to each other, and between which, if they are connected by a canal, there will be large traffic; second, cases where comparatively short canals, like the Suez Canal, save a very great sailing distance and so are extensively used; third, cases more doubtful, where short canals connect with the ocean, great cities which have grown up not

[1] It is no sufficient answer to this contention to cite the usual practice regarding our numerous streets and roads. To charge tolls, individually, on each person as he used any given street, would obviously be an intolerable nuisance. These facilities we must have, anyway, and substantial justice may be secured, if care is taken to avoid extravagance, by levying on local property owners according to some fair system. Since land values depend largely on streets, etc., it may be possible, by basing assessments or taxes on land values, to make costs to different persons vary, on the whole, in proportion to benefits.

far from it.[1] "Practically all the canals now in most successful use are ship canals, forming comparatively short links between important natural waterways, and opening up extended routes of transportation by water for large vessels. Such short-link ship canals are to be clearly distinguished from long inland canals, and the success of the one offers no safe criterion as to the probable success of the other." [2] Moulton's study of the much vaunted waterway system of Germany seems to provide conclusive evidence that canals are as cheap as railways for shippers, only if the taxpayers, in effect, help pay the freight, and that, in general, canals and canalized rivers involve tremendous loss to the nation which undertakes their construction, and are therefore a source of industrial and commercial weakness rather than of strength.[3]

If there were adequate reason to believe that canals, generally, were cheaper and more satisfactory means of transportation than railroads, it would not be necessary to have public agitation and political pressure to get canals built. Private companies would undertake to build them for profit, just as they build railroads for profit, and just as canals were built, in England particularly, before the days of railroads.[4] As a matter of fact, investors are not clamoring for a chance to buy the securities of such companies, nor are promoters eagerly looking for opportunities to project new lines. When the build-

[1] Preliminary Report of United States National Waterways Commission, 1911, pp. 13, 14. Reprinted in Final Report, 1912, pp. 75, 76. See, however, as to an example of the third class of cases, viz. the Manchester Ship Canal, Moulton, *Waterways versus Railways*, Boston and New York (Houghton Mifflin Co.), 1912, Ch. VII.

[2] Report of Commissioner of Corporations on *Transportation by Water in the United States*, Part I, p. 45.

[3] Moulton, *Waterways versus Railways*, Chs. IX, X.

[4] *Ibid.*, p. 99.

ing of canals is mentioned favorably, the assumption is always made that taxpayers shall bear the burden, or at least the risk, of building them.

§ 5

The Improvement of Harbors

Water transportation which is not worth its cost, may likewise be stimulated by a wrong system of harbor improvement. In the United States, the construction and care of lighthouses, the building of breakwaters, the dredging of harbors, and the dredging of channels between the sea and harbors, are done largely by the Federal government.[1] It cannot be said that nothing is paid towards the expenses involved, by the traffic aided, since the tonnage dues collected by the government amount to $800,000 or $900,000 a year.[2] But considering the fact that the Federal government appropriates about $5,000,000 a year for lighthouse maintenance alone,[3] and, on the average, appropriates millions of dollars each year for dredging, breakwater construction, etc., the traffic entering and leaving the ports of the United States cannot be said to bear the costs which it occasions. Rather is this traffic, in a considerable degree, subsidized at the expense of taxpayers. As with canals, so with lighthouses and harbors, we must conclude that those who benefit by them should be the ones required to pay for them, and that to place the burden of their construction

[1] Report of Commissioner of Corporations on *Transportation by Water in the United States*, Part III, 1909, pp. 39, 40.

[2] Johnson, *Ocean and Inland Water Transportation*, New York (Appleton), 1911, p. 252. Given in Report of Commissioner of Corporations on *Transportation by Water in the United States*, Part I, p. 404, as $1,076,571.69 in 1908. The coasting trade is free even from this.

[3] *Ibid.*, p. 262.

and support on the general public, with no reference to benefit received, is undesirable and unfair.[1] We must further conclude that constructions and improvements made in harbors, for which the traffic using the harbors cannot afford to pay, involve national economic loss and ought not to be undertaken.

In many cases the money spent in harbor improvements by the Federal government is wholly or partly wasted, for appropriations are frequently made for which there is no economic justification and for which there would be no economic justification even if the largest sums possible were to be realized by charging the users. Such wasteful appropriations are doubtless in part due to lack of business sense among legislators. They are perhaps more largely due to the pressure of local interests. The very fact that these appropriations are so largely made by the central government, and that there is, or seems to be, a chance for interested localities to get something for nothing, results in expenditures which would not be made if the localities particularly concerned had always to provide the means, or if private capital had to be induced to do so.[2]

[1] It is not a sufficient answer to the above argument, to assert that our tariff system taxes trade and that therefore this trade pays for itself by paying for the facilities used. For the burden, nevertheless, does not fall where it properly belongs. It does not fall anything like evenly on all traffic which uses the facilities provided. On some goods the tariff has been, until recently, prohibitive, artificially interfering with normal and profitable trade. On other commerce and on passenger traffic, the tariff duties are little or nothing. Such commerce and traffic may, in effect, be receiving a subsidy, while the remainder of commerce is burdened. The principle of charging the cost of facilities provided, to those who use them and upon different interests in some proper proportion to the benefit received, is not conformed to. We fall far short of the economic ideal when we set up contradictory policies of discouragement and encouragement. These contradictory policies do not exactly neutralize each other, but in one case there is a net loss in one direction, and elsewhere there is a net loss in another direction.

[2] Cf. Preliminary Report of National Waterways Commission, p. 20 (Final Report, p. 82).

A different system, and one which is economically more defensible, is that common in Great Britain. There the central government, except as naval considerations may be involved, does nothing whatever by way of harbor improvement, but leaves this matter to the localities immediately concerned. The British system of harbor improvement and maintenance requires the creation for each harbor of a so-called "public trust" or public harbor trust.[1] A public harbor trust is a semi-public body or a corporation, authorized by parliament, to which body is granted power to own, improve, and manage a particular harbor. It has been compared[2] to the board of trustees of an American university or charitable institution. The members receive no salaries, but regard their position as an honorary one. The composition of a harbor trust is determined by statute. Representatives are usually selected by the British government, the government of the city concerned, boards of trade and chambers of commerce, ship owners' associations, and other interested parties. Money is borrowed for necessary improvements, usually at low rates, for the harbor trust is authorized to collect port and dock charges from vessels utilizing the facilities given, and this power makes the security good, at least in the case of a port sure to have large traffic. Sometimes money is borrowed from the municipality itself. In any case, money needed in excess of what has been collected in previous years from traffic, is borrowed, and must be paid back out of future collections. There are no stockholders, and, therefore, there is no attempt to make a profit above a fair interest and

[1] Described in Smith, *The Organization of Ocean Commerce*, Philadelphia (Publications of the University of Pennsylvania), 1905, pp. 129, 130.

[2] *Ibid.*

sinking fund. Indeed, a private corporation authorized to collect tolls from all the shipping of a port, for the sake of dividends to stockholders, would, unless strictly regulated, be an intolerable monopoly.

But the British system of harbor control does make the traffic pay for the facilities required, and is in so far consistent with the economic principles so wisely applied to British trade and commerce generally. There is no attempt to encourage trade which is not nationally profitable, by partly supporting it, *i.e.* by providing free harbor facilities at public expense and, therefore, at the expense of other lines of economic activity, any more than there is the attempt to interfere with nationally profitable trade by high tariff duties. The public trust unites responsibility with direct action. It furthers efficiency, economy, and lowness of rates, but it does not subsidize.

The function of maintaining lighthouses, however, almost of necessity devolves upon a central government. No city or private corporation is in a position to perform this function and make the traffic benefited pay for the service provided, since much of the benefit will be received by vessels which have no occasion to visit the particular city or to come within reach of the particular corporation. The British government, therefore, maintains the lighthouses, but collects "light dues" in return, amounting to about $2,500,000 yearly, from vessels entering English harbors. These dues pay the entire yearly cost of maintaining the lighthouses and about $250,000 a year besides.[1] Here, also, is no policy of subsidizing, no attempt

[1] Johnson, *Ocean and Inland Water Transportation*, p. 262. If the slight charge above yearly cost is criticised, it should be remembered that a reasonable return on investment is not an improper aim.

to foster one industry at the taxpayers' expense, or to encourage an undue and uneconomical geographical division of labor.

§ 6

The Improvement of Rivers

The responsibility for the improvement of rivers, like that for the improvement of harbors, has rested, in the United States, chiefly with the Federal government. The work done has included the removal of obstructions to navigation, the deepening of channels by dredging, the construction of revetments, and the development of slack water navigation by the building of locks and dams to maintain a navigable depth. Improvements of this sort have been carried out, to some extent, on most of the navigable rivers of the country. But the appropriations of Congress for these purposes have not always been wisely made, nor has the distribution of improvements throughout the country been influenced solely by commercial or economic considerations.

Let us notice one or two typical instances of Federal activity in river improving. To improve the Mississippi river, the government has spent, in all, more than $90,000,000.[1] Of this amount, $15,000,000 has been spent on the 200 mile stretch between the mouths of the Missouri and Ohio rivers.[2] But the traffic on this stretch of the river, including that of St. Louis (which is located between these points near the Missouri), has steadily decreased. In 1880, upwards of a million tons

[1] The Report of the Commissioner of Corporations on *Transportation by Water in the United States*, 1909, Part I, p. 47, gives $97,685,920.

[2] The facts and figures in this and the next paragraph are taken chiefly from an article by Herbert Brace Fuller, in the *Century Magazine*, January, 1913, pp. 386–395, entitled "American Waterways and the Pork Barrel."

of freight were shipped from St. Louis. In 1900, the amount aggregated only 245,000 tons, and in 1911, only 191,965 tons. Is it safe to assume that there has been so much saving in the expense of carrying this traffic, as compared with what it would have cost to carry it by rail, or to carry it on the unimproved river, as to compensate for the money sunk? Would those who have used this section of the river have been willing to invest, jointly, the $15,000,000, in order to have the better navigation conditions which that investment has made possible?

If there remains any doubt in this case that money has been unwisely spent, there can be no doubt in other cases that public funds have been wasted for the sake of returns to private interests and to limited territories, almost incomparably less than the general loss. The Big Sandy river is a tributary of the Ohio river. The Big Sandy and its two branches or tributaries, the Tug and Levisa rivers, lie in Kentucky and West Virginia. On their improvement, the Federal government has spent, in all, about $1,700,000. Excluding timber, which can be and commonly is floated down-stream, the average yearly traffic on these rivers is about 2000 tons. Reckoning interest on this $1,700,000 as only $40,000, or less than 2½ per cent a year, the annual cost to the United States of providing facilities for this traffic is $20 per ton a year. Adding $20,000 a year for maintenance, we have a cost of $30 a ton.

Average railroad charges in the United States are considerably less than one cent per ton mile.[1] For low grade freight (the only kind which makes much use of

[1] Statistics of Railways in the United States, Interstate Commerce Commission, 1910, p. 59.

inland waterways) going long distances, railroad charges average very much less than this, probably markedly less than a half cent. The facilities provided by the government on the above mentioned three rivers would, therefore, have to reduce the transportation cost upon them to zero, in order that the construction or investment by the government should be proved worth while, unless the traffic benefited moved an average distance of over 6000 miles. For even at zero cost of carriage, each ton carried one mile would secure a saving of but one-half a cent. And unless it were carried 6000 miles, the total saving would not amount to the $30 interest and maintenance cost.

What is the reason for the numerous appropriations of this sort made by our government? A partial explanation may be found in the current American practice of donating to commerce the improvements made, and letting the general public bear the burden in indirect and, therefore, hardly realized taxation. Commercial interests are the more ready to plead for comparatively useless dredgings, revetments, and canalizations, because, however small the benefits are, they reap these benefits, and because, however heavy the cost is, others mainly bear it. Any reform which goes to the root of the evil must espouse the principle of making those contribute most to the fixed charges and maintenance costs of navigation improvements, who chiefly use those improvements and to whom their benefits chiefly go.

A further partial explanation is suggested by noting the distribution, throughout the country, of money appropriated for waterways. In the general River and Harbor Act of 1910, appropriations were received by 296 congressional districts in the United States, out of a

total of 391,[1] in other words, by over three-fourths of such districts. Apparently the appropriations were given to nearly every district in which there was a stream or harbor offering any excuse for expenditure. This River and Harbor Act illustrates what has been called the "pork barrel" system of waterway development.

The difficulty is one which seems to apply generally to the activities of a democratic government. A despotic or aristocratic government is based on the privilege of special persons or classes. It governs largely in the interest of legally privileged classes. It insures to those classes, political and economic privileges maintained at the expense of others. Such a government was that of France before the Revolution. Such is that of Russia to-day. In the case of a popular government and an intelligent people, privilege is probably less excessive, and its forms less obnoxious. But there may still be, especially if the government carries on industrial functions or interferes at all with the natural laws of trade, the privilege which comes from bargaining. One class wants a special kind of tariff law, adverse to the public interest. Another class desires legislation subversive of currency stability, also contrary to the general welfare. The representatives of each, in Congress, may support the desires of the other, in return for counter support.

The evil shows itself most of all, perhaps, through the influence exerted by localities or by special interests in different localities. We have noted this particularly in the case of the protective tariff.[2] And just as, in the case of the tariff, congressional representatives from

[1] Fuller, *American Waterways and the Pork Barrel, loc. cit.*

[2] Chapter VI (of Part II), § 6.

different states and districts desire, each, to get or keep a high tariff for the goods produced in his district, whatever the effect on the common weal, and sometimes inconsistently with their party platforms, so these representatives desire appropriations of money to improve waterways, each for his own district, even though the cost to the country as a whole far exceeds the benefit, and even though each district suffers more from its forced contributions to improvements in other districts, than it gains. There is, consequently, a process of "log-rolling," so-called, in which A votes for B's project in return for support of his own; and the ultimate result is an appropriation or set of appropriations having no consistency and involving general loss.

Each Congressman thus acting, feels that he is gaining favor with his constituents. The persons interested in local waterway constructions make representations to him regarding the importance of them. He feels that the people of his district are not concerned primarily in having him act the part of a wise and conscientious legislator, careful not to waste the nation's resources, but that they are concerned rather in having him "do something" for them. If he succeeds in getting what is desired, the newspapers of the district publish the fact that, through his influence, Congress has been led to appropriate a sum to improve navigation on the local stream or to deepen the local harbor. The fault is not alone that of the Congressman who, under such circumstances, does the thing which he believes his constituents desire, but is also largely the fault of those constituents themselves, whose selfish local interests overshadow in their minds the greater interests of the nation of which they are a part, and whose limited intelligence will not let them see

that the system practised is likely, in the end, to hurt more than to help even their own welfare.

It would seem, then, that a reform which would go to the root of the difficulty must not only insist upon the attempt to charge users rather than taxpayers, for facilities provided, but must also insist that the entire first cost and risk of constructing these facilities shall not fall upon the nation as a whole. If government expenditure rather than private investment is thought to be necessary to improve certain waterways, at least the government expenditure and risk should be partly borne by localities most directly concerned. If such localities will not support certain improvements, themselves, they should not expect the nation to do so. If the nation refuses to bear the burden alone, but insists, always, upon local aid, there will be far less pressure for Federal appropriations, and many wasteful expenditures will be avoided.[1]

§ 7

Subsidies to Railroad Building

The subsidizing of transportation, by government, has extended, in the United States (not to mention other countries), to railroads also. The railroads of the United States have, it is true, been built pretty largely with private capital, but they have also received aid from the national government, from many of the states, and even from county and city governments. The states and local governments, in some instances, invested in railroad securities, so enabling the roads to get capital

[1] Cf. Preliminary Report of National Waterways Commission, pp. 19, 20 (Final Report, pp. 81, 82). See also Report of Commissioner of Corporations on *Transportation by Water in the United States*, Part I, pp. 8, 59, for reference to European practice.

which, perhaps, private persons would have been less ready to provide. But the Federal government, in addition to making loans, made very extensive land grants to companies constructing numerous desired lines,[1] chiefly in the less densely settled parts of the country, the West and Southwest. The grants made between 1850 and 1871 turned over to the railroad companies about 159 million acres of the public domain, an area exceeding five states the size of Pennsylvania.[2] So far as the land grant policy was based on military conditions, we cannot judge it on economic grounds alone. But so far as it can be regarded as a commercial policy, it can be judged in the light of commercial principles.

We shall not, of course, be able to decide, absolutely, whether the land grants and other government aid to the railroads actually decreased the total of national wealth. So to decide, we should have to know not only what has happened, but just what would have happened if business and transportation development had taken its natural course. But we can lay down general principles of usual application, which, in the long run, are apt to be safest to follow.

To begin with, it must be admitted that there is such a thing as undesirable transportation. The labor and capital of a country should be applied in order of pref-

[1] See, on this subject, Haney, *A Congressional History of Railways in the United States*, Vol. II. The Railway in Congress: 1850–1887, Madison, Wis. (Democrat Printing Co., State Printer), 1910, Chs. II, III. Also Sanborn, *Congressional Grants of Land in Aid of Railways*, Madison (Bulletin of the University of Wisconsin), 1899, Chs. VI, VII. A good brief account is in Johnson, *American Railway Transportation*, 2d revised edition, New York (Appleton), 1909, Ch. XXII.

[2] Not including land forfeited by failure to conform to conditions. The granting of the mere rights of way might be regarded as analogous to the granting of farms to actual settlers. But the granting of millions of acres additional cannot be so regarded.

erence to different industries according to their relative importance, according to the relative need for them. In other words, the people should devote their efforts to the lines which pay best. It may be said that the people living in the Middle West and Far West, where railroad building was encouraged by government more than in the East, desired railroads as a means of reaching eastern markets. But the mere existence of railroads leading to markets does not in itself mean greater prosperity, since the benefits so received may be appreciably less than if the same capital were invested in some kind of productive enterprise for immediate local needs. Unless the trade made possible by a railway brings as much wealth and prosperity as could have been had by foregoing the trade and producing more locally, unless, that is, as much of desired wealth is produced by the railway as would be produced were the labor and capital applied instead to the farms and ranches, to building houses, making furniture, etc., the building of the road is not economy for the community. If a railroad when constructed will yield the people of a community a benefit equivalent to what the same investment would yield in another line, then those who receive this benefit can afford to pay, for the use of the railroad, a proper return on the capital invested. If they cannot afford to pay such a return, it must be because they are not receiving a correspondingly valuable service and, therefore, it must be that the capital invested in the railroad is not producing the value which it might have produced if invested otherwise.

If the territory through which a railroad is desired is sparsely settled and would offer but small traffic in proportion to trackage, thus only very partially utilizing

the plant of the railroad, then high charges would be required, in order that the railway plant might pay to the owners the average rate of profit on investment. But high charges may be as serious preventives of reaching markets as absence of railroads leading to markets. If, therefore, only small traffic can be hoped for, it may be truer economy for the territory concerned and the various communities in it, to be more self-sufficient, to depend more exclusively on natural waterways, or to carry goods by using horses and vans, than to build a railroad.

The people of a given section of the country may think that they gain nothing by having an incompletely utilized railroad, if they have to pay, in high freight and passenger rates, interest on its cost. They may not be prepared to patronize such a road, feeling that the service is not worth the charges. Yet if the road is paid for in part by government aid, even though they have to pay the taxes that make the aid possible, they may delude themselves into thinking that they are gainers by having the railroad. Nevertheless, the people are paying for the service rendered just as surely by this method as by the other, and if it is unprofitable for them to pay the amount in the one way, it is unprofitable to pay it in the other. The chief difference is that if government supports the enterprise without receiving any corresponding return, the cost of the service rendered is paid for by the people without any regard to the proportionate benefits received.

If the assistance is by grants of land, the essential principle of the policy is the same. The public domain belongs to the whole people. It rests with them to give it to settlers, to keep it as forest reserve and for other

purposes, or to secure money revenue by selling it. To contribute it to railroad companies is as much a cost as to contribute the equivalent in money.[1]

As a consequence of the land grant policy, capital was diverted to transportation purposes which might have yielded larger returns in agriculture or in manufactures. In so far as the policy had this effect, it lessened rather than increased national prosperity. Because of the land grant policy, also, population tended to be diverted towards the Middle and Far West, while there was still room in the East, South, and Central states. As a result of this diffusion of population, goods were probably carried by rail over longer distances than would have been necessary had population been for a time more concentrated and had its extension westward been more gradual. Had the westward movement, except that by water to the Pacific coast, been slower, a shorter connection could have been kept by the near frontier with the more densely settled parts of the country, and the necessity of long hauls of meagre traffic through undeveloped sections could have been, in part, avoided. It is doubtless true that some sections of the West are exceptionally rich and fertile, as some are exceptionally mountainous or arid. That the former should eventually hold a large population was both unavoidable and desirable. But that the movement westward should have been artificially hastened, at the cost of millions of acres of the public domain, at the cost of diverting labor from other industries into transportation, at the cost of unnecessary distances in transportation, and at the cost of building railroads in advance of traffic, ought not to be too readily taken for granted.

[1] See, however, considerations later in this section, especially in footnote.

As some parts of the country presumably gained by the policy, so other parts probably lost wealth. Many of the eastern farmers, for instance, found themselves disadvantaged by competition with producers of the West. So far as western farmers, by virtue of natural advantages, were able to undersell the farmers of the East, the result was economical and beneficial. But so far as western farmers were, in effect, given bounties, by having transportation provided in part at national expense, the result may very well have been a national loss. If the prosperity of the government-aided western farmer was increased, that of the eastern farmer was decreased. If the value of western land was raised, that of eastern land was lowered.[1]

One type of municipal or local aid deserves particular mention. This is aid which is made conditional on the choice of a route through the town or city giving it. Such aid introduces an uneconomical basis (from the social point of view) of calculation into the choice of a route. The route selected is less apt to be the one which, all matters of traffic and expense considered, is most profitable, and, therefore, socially most desirable, but is apt, rather, to be a route favored by the largest promises of local aid.

[1] To the argument that the government so raised the value of the remainder of its own land, it can be answered that it is not the business of a government to depreciate the land of citizens in order to raise the value of public land. If the principle that land rent is largely a social product and belongs mainly to the whole people, were commonly accepted, depreciating some land to raise the value of other land would appear clearly to be uneconomical. It is probable, in the case under discussion, that enough railroads would soon have been built, and that the government, even in the narrow sense here used, lost more than it gained by making the grants.

§ 8

Summary

Let us now briefly restate the principles set forth in this chapter, regarding government interference with and encouragement of transportation. Navigation laws were first considered. These laws attempt to develop the national merchant marine by excluding foreign ships from certain trade. The United States excludes foreign vessels from the coasting trade. Considered from the purely economic viewpoint, these laws are analogous to protection, and for similar reasons they are economically undesirable.

Shipping subsidies are in the nature of bounties. In general it may be said that they are without economic justification. It may be defensible, however, or even desirable, to make definite payments to certain lines of ships, in order to have a claim to vessels as naval reserves. Subsidies may be indirect, as when certain privileges are given to a nation's own merchant vessels, at the taxpayers' expense, which are denied to the ships of other nations. The purpose of discriminating subsidies, direct or indirect, is not so much to increase commerce as to have it carried in vessels of the subsidy-paying country.

Facilities for transportation are frequently provided by government at the taxpayers' expense. These tend to stimulate commerce which is not worth the expense borne, and which could not pay this expense. Such a policy is unfair to the general tax-paying public and violates the principle that those who gain by any facilities should be the ones to pay for them. Such provision of commercial facilities at public expense would have been the carrying out of the plan to allow United States coast-

ing vessels to use the Panama Canal free. Such provision of facilities at public expense is the plan to have the Erie Canal forever free from tolls. Sections of the country, or of the state of New York, which have little or nothing to gain by the creation of these facilities, would have been, or will be, taxed that other sections might use them toll free. The Federal policy of harbor and river improvement is also a policy of subsidizing commerce, and is, therefore, popular with and favored by the interests subsidized. Like the protective tariff policy, the policy of subsidizing water transportation is partly the result of bargaining between representatives of different districts, each trying to get something at the general expense. The British system of a Public Harbor Trust avoids private monopoly of facilities, but makes the traffic using the facilities provided, pay for them.

Land grants to railways, like other aids to water transportation, are indirect subsidies given to commerce, and, as such, are open to objections. The general rule which it is safest for government to follow, is that those who chiefly benefit by facilities provided for commerce should chiefly pay for them, rather than that these facilities should be paid for by the people in general, without regard to proportionate benefits received.

PART III

THE TRANSPORTATION COSTS OF COMMERCE

CHAPTER I

THE COST OF TRANSPORTATION

§ 1

Preliminary Remarks on the Expenses of Railroads

BEFORE taking up a consideration of transportation rates, or of economical versus uneconomical carriage of goods,[1] we may, with advantage, analyze transportation costs. We shall begin by classifying and discussing the expenses of railroad companies.[2] Scarcely any of the expenses which a railroad company has to meet can be said to vary in exact proportion with the traffic. Even the cost of fuel and the wages of engineers and trainmen do not vary in exact proportion with amount of goods carried, or in exact proportion with the number of cars or the number of trains hauled. But it is probably not widely false to state that such expenses as these will vary, in any given period, about as the number of trains

[1] Except as such carriage of goods has already been considered in Part II, Chapter VIII.

[2] The writer has found particularly helpful, though he has not followed it throughout, the analysis of ton mile cost in Woodlock's *Anatomy of a Railroad Report* and *Ton Mile Cost*, New York (S. A. Nelson), 1900, Chapters I to V, inclusive, of *Ton Mile Cost*. See pp. 86 and 87 of Woodlock for summary of classification. On the difficulty of finding any uniform and entirely satisfactory basis for the allocation of railroad expenses on different roads, even between freight and passenger service, see Hooper, *Railroad Accounting*, New York (Appleton), 1915, Chapter XV.

times the average number of miles a train is taken during that period. If we bear in mind that, within the limits permitted by reasonable frequency of trains, the number of cars to a train will be, on the whole, the best paying (*i.e.* the length of train will be the best paying), then we may say that these expenses (for fuel, wages of engineers, etc.) vary, in a considerable degree, as traffic varies. Other railroad expenses, however, seem to have much less relation and, in some cases, almost no relation to the quantity of transportation business done.

By a parallel argument it may be shown that no appreciable amount of a railroad's expenses can be exactly allocated to (regarded as particularly caused by) any special traffic. For example, suppose coal and live stock to be carried in the same train load. Much of the expense of carrying is a joint expense, *e.g.* the cost of fuel and the wages of engineer and fireman. If the coal and the live stock are carried in the same train, it will appear difficult, if not impossible, to determine how much of the cost of running the train is a cost of carrying coal, and how much is a cost of carrying live stock. Yet when train loads are homogeneous, made up, each, entirely of one kind of goods, some expenses may be allocated, such as fuel cost, engineer's wages, etc. It can be determined, approximately, what is the cost per train load of hauling coal, and what is the train load cost of hauling live stock. From this we may deduce the cost per ton mile of hauling each. But there are other and more general railroad expenses which cannot thus easily be allocated, or attributed to different kinds of traffic, any more than they can be said to vary in proportion to traffic. What is needed

is a careful analysis of the expenses of a railroad, with a view to determining the relation which these expenses have to amount and kinds of traffic, and the influence which they have and ought to have on rates.

§ 2

Classification of the Expenses of Rail Transportation

In attempting such an analysis, we may divide the expenses of a railroad into four classes, in rough proportion to the relative exactness with which these expenses vary as traffic varies, and in proportion, also, as they are easily and clearly attributable to different kinds or to different lots of traffic. The first class of expenses of a railroad company includes all expenditures for the production of train mileage, train mileage being defined as the total number of trains run during a given period, times the average number of miles a train is run. The expenses in this first class will be found to be the most variable and apportionable of any. Second, there are terminal expenses, which are variable in proportion to volume of traffic and are in some degree apportionable, but which have no relation to the distance goods are carried. Third, there are the general expenses, or preparatory and complementary expenses, which are slightly variable within wide limits, but which are not likely to vary much, if at all, with small changes in the volume of business, and which cannot, to any considerable extent, be allocated, or attributed to any special traffic. The fourth class is made up of the so-called fixed charges (or the sunk costs), which, once the road has been built, are not at all variable as traffic changes, or at all attributable to different parts of the total

business done.[1] Let us consider these four classes of railroad expenses in the above order.

Expenses for the production of train mileage include some half dozen different subclasses of expense. First, there is the cost of production of locomotive power. This cost includes wages of engineers and firemen, value of coal burned, of oil and tallow used, etc. Second, there are expenses for maintenance of equipment, such as repairs of engines and cars. The third item among expenses for production of train mileage is a part of the cost incident to maintenance of way. Renewals of rails and renewals of switches and of rail fastenings, so far as they are due to wear and hence depend upon the number of train miles, are maintenance of way expenses which must be classed as being for the production of train mileage. The same thing is to be said, in part, of expenses for tie renewals. In part, these renewals are necessitated by weather conditions and are not related to the use made of the tracks, but in part they depend upon this use. This third item includes also such repairs of roadbed as are not due to weather and floods, and includes, further, a certain amount of bridge repairs. Fourth, the expenses for the production of train mileage include the cost of train service and supplies. This means particularly the wages of trainmen, oiling, and, in the case of passenger trains, heating and lighting. Fifth, there is the cost of superintendence and supervision in the movement of trains, a cost which depends in large part upon the number of trains to be run and the average distance they are to be run. Other expenses might perhaps be mentioned, which pertain particularly

[1] See, however, later paragraphs of this section (2), in which the possible requirement of additional construction is discussed.

to the production of train mileage, but those here given are fairly inclusive, and will at least serve for illustration.

The expenses above given incident to the production of train mileage are the operating expenses which vary in some approximate proportion with the trains moved times the average number of miles, *i.e.* with train mileage. They do not, however, vary in *exact* proportion to the number of trains times the average number of miles that trains are run, since trains are not all of the same length or loaded with equally heavy cargoes. The cost of running long and heavily loaded trains is greater for the same distance than the cost of running less heavily loaded and shorter trains. Yet it is not greater in proportion to the larger amount of goods carried, until the train load of maximum efficiency has been reached.[1] This train load will be, where circumstances favor, the largest which the most efficient and economical type of engine for the purpose can conveniently draw. The cost in fuel and labor of drawing such a train load, obviously will not be twice as great as the cost of drawing the same train loaded to but half its capacity or of drawing a train of half the length. The expense of production of train mileage does not, therefore, increase as rapidly as business increases, except in the case of a road (or part of a road) whose volume of business is already so great as to permit the train load of maximum economy. Where traffic is not heavy, the frequency of service required for public convenience makes impossible the larger trains and heavier loading which otherwise

[1] The special case of traffic taken to fill cars which must otherwise be returned empty to their starting point is discussed in Chapter V (of Part III), § 7.

would be attempted. The first class of expenses, therefore, that for the production of train mileage, increases as the amount of traffic increases, but does not increase, on the average road, as rapidly as traffic increases.

The second class is terminal expenses. These, too, may properly be regarded as operating expenses. They are the expenses for loading and unloading freight, when this is done by the railroad company transporting it and not by the consignor and consignee. They include, also, expenses of switching, expenses for making up trains, expenses incident to repairing terminals, so far as this repairing is occasioned by the use of these terminals, and, in general, expenses incident to collection and handling of freight and passengers at terminals proper and at intermediate points. The amount of freight and the number of passengers carried affect these expenses, though probably not proportionally, but the distances the freight and passengers are carried do not affect them.

General, or preparatory and complementary, expenses constitute the third great class of costs. These general expenses we may subdivide, in the main, into two subclasses. First, there are a part of the expenses for general direction and supervision, for clerical work, for soliciting traffic, etc., which would not need to be incurred if a railroad company should elect to do no business at all, but which, nevertheless, vary comparatively little even with marked increases and decreases of traffic, and which, with, perhaps, the partial exception of soliciting expenses, can be allocated hardly at all, *i.e.* cannot be said to be especially incurred for this or that part of the traffic. Such expenses are among those sometimes

described as joint costs [1] of all the traffic. Second, there are many expenditures for maintenance of plant, such

[1] As by Taussig in the *Quarterly Journal of Economics*, 1891, Vol. V, pp. 438–465. Pigou, in his *Wealth and Welfare*, London (Macmillan & Co.), 1912, pp. 215–219, criticizes the view that railway transportation is essentially a business of joint costs. See, also, discussion between Professors Taussig and Pigou in the *Quarterly Journal of Economics* for February, May, and August, of 1913. While the method of approaching the theory of rates, in this book, may appear to be essentially that of the joint cost theorists, the conclusions reached have been carefully qualified in the text and in footnotes, and it is hoped that any substantial basis for criticism on that score has been avoided. It must be admitted that the carrying of (say) two commodities, *e.g.* wheat and coal, by railroad, is not a case of joint cost in quite the same sense as the production of, for example, beef and hides. The transportation of the wheat and coal is a case of joint cost (if we wish to use that expression), only in the sense that certain expenses do not vary proportionately whether traffic (within wide limits) is large or small, only, that is, in the sense that the plant which is constructed primarily, perhaps, to carry the wheat, cannot be fully utilized in transporting the wheat and may also be used, without correspondingly greater expense, to carry the coal. But, supposing the size of railroad plant of maximum economy to have been reached, a larger and larger demand for the transportation of wheat would not increase — it would, rather, decrease — the possible supply of the service of transporting coal. So long as the plant was but partially utilized in transporting the wheat, it might be possible to carry the coal at very low rates, because the relatively constant expenses were chiefly covered by the charge made for transporting the wheat. But when the plant came to be more fully utilized, with, perhaps, a possibility of being completely utilized, in transporting the wheat, the transportation of coal would be a *competitive* rather than a *complementary* use of the plant; and even before the capacity of the plant was put to the test by traffic all of which was able to pay its proportionate share towards the general expenses and fixed charges, the increased demand for the transportation of wheat might somewhat raise the rates on the transportation of coal. The production of beef and hides is a typical case of joint cost. An increased demand for beef tends to raise its price and to encourage its production. Such increased production of beef necessarily involves the first stage of, and a partial meeting of the expenses of, an increased production of hides, and so tends to lower the price of hides. (See Fisher, *Elementary Principles of Economics*, New York — Macmillan —, 1912, p. 349.) Somewhat analogously, the transportation of wheat, when this requires the preliminary construction of a railroad plant which cannot be completely utilized by carrying wheat only, may involve the first stage of, and a partial meeting of the expenses of, the transportation of coal, and so may tend to make possible the transportation of coal at very low rates. But a further increase in the transportation of wheat would decrease rather than increase the facilities which might be available for the transportation of coal and would be likely to raise the rates for such transportation.

as renewals of ties, repairs of roadbed, etc., which are not dependent upon the amount of train mileage, which have, perhaps, very little relation to the amount or kind of traffic, but which are necessitated by weather conditions or other extraneous circumstances, and which must be met to a degree, if a railroad company intends to do any business at all.[1] Not only are these expenses of the third class not dependent upon amount of traffic, but they cannot be allocated to different kinds of traffic.

Fixed charges constitute the fourth main class of costs.[2] This class includes interest on a company's

[1] A very great decrease of traffic might, of course, make possible a decrease in the administration expenses and an abandonment of part of the plant, *e.g.* one of several tracks, with resultant saving of maintenance costs. On the other hand, an increase of business sufficient to require additions to the plant, *e.g.* additional trackage, would involve added expense for maintenance and, perhaps, supervision. But, within wide limits, general expenses are largely independent of the volume of business.

[2] The Interstate Commerce Commission has, as one of its duties, to prescribe a system of accounting for all interstate railroads. In carrying out this duty, it has made a classification of expenses considerably different from that above described. (See Statistics of Railways in the United States, 1910, pp. 85, 86.) Operating expense accounts of the railroads are made to include items for:

I. Maintenance of way and structures (such as for upkeep of roadbed and bridges); this was $425,173,389 in the year ending June 30, 1913, for all the railroads of the United States. (For this and for the following figures, see Statistics of Railways in the United States, 1913, pp. 50, 51, and 52.)

II. Maintenance of equipment (upkeep of engines, cars, etc.); this was $513,406,662 in 1913.

III. Traffic expenses (as those for advertising and for soliciting traffic); in 1913 this was $63,082,500.

IV. Transportation expenses (such as wages of engineers, trainmen, and yardmen and cost of fuel), totaling $1,101,742,932 in 1913.

V. General Expenses (including administration, insurance, etc.), amounting for all the roads, in 1913, to $79,363,517.

In addition to these operating expenses, there are such fixed charges as rentals (totaling $133,903,011 in 1913) and interest on funded debt ($380,145,142), besides a few minor deductions from revenue.

This classification, however, though it may be much more practical for many purposes of accounting and supervision than the one which we have followed, is not equally significant in the study of railway rate making. For such operating expenses as those pertaining to maintenance of way and structures and to main-

debt, rentals which it may have obligated itself to pay for the privilege of operating certain branch lines or using certain tracks, and taxes. These expenses are the least variable among all the four classes. In fact, once a sufficient trackage and other facilities have been constructed, most of them do not vary at all with changes of traffic. Whether traffic be large or inconsiderable, profitable or the reverse, interest on the debt must equally be paid when due. Likewise it is obvious that these fixed charges cannot be allocated to any special part of the traffic of a road, cannot be said to be incurred for the sake of any particular traffic.

But it may be objected that a railroad need not have much of fixed charges, that it may have leased no branch lines and may have no debt, that its capital may have been raised entirely by the sale of stock and not at all by the sale of bonds. In that case, the annual fixed charges would have relatively small or no importance. Fixed charges, however, are in large part but interest on the original cost of a railroad system. Interest paid to bondholders is interest on cost; rentals are, in effect, interest on cost (or estimated value) of branch and other leased roads. If, then, there are no fixed charges, there are at least sunk costs. These sunk costs represent the

tenance of equipment, as well as the so-called "traffic expenses," are in considerable degree independent of amount of business. In order to estimate the character of their influence on rates, we may with advantage group a part of each of these classes, for example, those for maintenance of way so far as dependent on weather conditions, with *general expenses*. Other maintenance of way expenses, dependent largely on amount of business, may profitably be grouped with most of the "transportation expenses" under the general title of *expenses for the production of train mileage*. Still other expenses, drawn from one or more of the Interstate Commerce Commission's categories, may, with gain to our study, be classed as *terminal expenses*. Thus we are naturally led back to the division of railroad expenses into those for the production of train mileage, terminal expenses, general expenses, and fixed charges.

amounts already invested in terminals, way, construction, and equipment, including, therefore, both necessary land or space, and the improvements, structures, and equipment, which are the products of labor. So far as the investment in a railroad represents borrowed capital, the annual interest may be regarded as a measure of the investment made, and is entirely independent of traffic. If none of the capital was borrowed and no interest has to be paid, we may say that the original cost of building the road has been sunk once for all and cannot be recovered, however small the traffic, and that it cannot be attributed to any particular part of the traffic. The amount sunk is equivalent to, and would have been exchangeable for, the perpetual annual interest on that amount, and *vice versa*. In either case, this expense, once the investment is made, is independent of traffic.[1]

Let it be said, in this connection, that the fixed charges, or the sunk costs of a great railroad system, are usually sums of great magnitude. A railroad system is a highly capitalistic enterprise even in a capitalistic era. In some kinds of business, yearly running expenses are a large part of the total expenses, and the initial cost is low. But railroading is a business of the opposite type. However large are the yearly expenses of a road, *i.e.* the expenses of *doing*, the expense of *becoming* overshadows these. The predominant fact in a railroad company's history is building the road, and the existence and rela-

[1] If existing facilities are insufficient for the possible traffic, and further construction is necessary, then, it may be said, the cost of such construction, or the annual interest charge on it, is occasioned by the additional traffic sought, and may be attributed to this additional traffic which requires it. Yet here, again, once the additional track laying or other construction has been done, the sunk costs, or the fixed charges on the investment, are the same whether the additional traffic sought proves to be heavy or light.

tive magnitude of this primary cost has large significance in the problem of rate making.

It is commonly stated that the railroad business is subject to a law of decreasing cost, or, as it is sometimes expressed, of increasing returns. Taking the expenses as a whole, they do not increase in proportion to business. But it should be emphasized that the tendency to decreasing proportionate cost with increasing traffic applies, in its full extent, only up to the point where the railroad plant is most economically utilized. Up to that point, increasing traffic will not correspondingly increase expenses.[1] After that point is reached, greater business may require the expense of new construction and of maintenance of a larger plant than before. Until this larger plant is utilized nearly as fully as was the smaller one, total expense per unit of business is likely

[1] This is equally true of the operation of other businesses up to the point of most economical utilization of their fixed plants. If we reckon as fixed charges the interest on the value of a farm and the cost of upkeep, it is true of farming. So long as additional men add more to the value of the product than they are paid in wages, it is worth while to utilize the land more fully, *i.e.* to cultivate it more intensively. Reckoning interest and upkeep expenses as fixed charges, we would find that the larger labor force increased the product by a greater per cent. than the total increase of expense. Nevertheless, the law of *diminishing* returns is said to operate, when the additional men no longer add to the total product, *in proportion to their number*. Analogously, a law of diminishing returns may be said to operate for additional labor (or labor and rolling stock) applied to moving goods over a fixed railway plant, when the additional labor no longer increases the hauling capacity of the railroad in the same proportion. Yet, since the fixed plant need not be increased, the greater business may be worth while. In the sense that efficiency and profits are greater in proportion to *total expense*, we have *increasing* returns; in the sense that efficiency is (possibly) less in proportion to the *quantity of operating labor*, we have *diminishing* returns. (See Carver, *The Distribution of Wealth*, New York — Macmillan — , 1904, pp. 86–89.) The railroad business is much more a business in which a large plant is necessary and in which a larger plant is more economical, than the business of agriculture, or, perhaps, than any other business. And, in the case of railroads, it is often impossible for the size of plant of greatest efficiency to be fully utilized by available traffic. Hence, the matter of utilization of plant has large practical importance in railroad economics.

to be greater than before. Whether the larger plant, when thus fully utilized, will be more economical than the smaller, depends upon whether the size of plant of maximum efficiency has been reached. The question whether there is increasing economy from fuller utilization of an existing plant, is to be distinguished from the question whether a few larger, or more smaller, plants, bring greater results in proportion to the same expenditure. A two-track road can carry more than twice as much traffic as a one-track road, since on the latter much more switching is required and trains cannot follow each other with the same frequency. It is probable that a four-track road can accommodate more than twice the traffic possible on a two-track road, since some of the tracks can be used for fast freight and passenger service and others for slow freight, thus preventing interference of either kind of service with the other. Either fuller utilization of an existing plant or, with still further increase of business, a correspondingly complete utilization of a larger and more efficient plant may, therefore, mean smaller cost per unit of traffic.

3

Influence which these Various Expenses Have and Should Have on the Determination of Railroad Rates

We turn now to a consideration of the influences which the four classes of railroad expenses exert in the making of rates. First, let us consider expenses for the production of train mileage. These vary in a considerable degree according to the business done, though they increase, almost always, in a less proportion than the volume of business. If additional business is taken by

a railroad, it will involve additional expense for the production of train mileage, but usually not proportionally additional expense. If, therefore, rates on new traffic cannot be as high as on traffic already assured, it does not follow that a railroad must refuse this new traffic. But, since the owners of a railroad do not care to do a losing business, any particular traffic which cannot pay for the extra train mileage expense incident to carrying it, will, granting intelligent management, be refused.

It is not desirable from the point of view of social or national economy, that such traffic should be taken. For it to be taken, means that labor and capital is devoted to this task when it could with greater profit be devoted to another, *e.g.* agriculture or manufacturing. Whatever the railroad must pay for this labor and capital is presumably not more than the labor and capital can produce of actual wealth or valuable service, if otherwise used or employed. To say that any traffic will not pay for the additional labor and capital (*e.g.* fuel) required to move it, is to say that the traffic will not pay what the labor and capital can produce in other lines, and this is to say that, if the railroad takes such traffic, industry will be in so far diverted from some more profitable to a less profitable line.

Second, let us consider terminal or station expenses. These vary somewhat as the amount of traffic, but do not vary in proportion to the average distance traffic is carried. Therefore, on the principle that a railway company will not accept freight offered for transportation when to accept it would lessen the railway company's net profits, any traffic which cannot pay as much towards terminal expenses as it adds to these expenses, besides paying for the train mileage costs which it occasions,

will be refused. But these (terminal) expenses will not prevent a railroad from carrying any traffic for long distances, even though this traffic pays only the increased train mileage cost which it occasions, and pays no more towards terminal costs than traffic moving much less distances. The reason is that the longer distance traffic adds no more to total terminal expenses than does traffic for shorter distances. It is a waste of the community's labor and is, therefore, socially undesirable, that traffic should be taken which cannot pay enough to meet the terminal expenses which it occasions.

Third, we have to consider the influence on rates, of general expenses. These expenses do not vary, in any corresponding degree, as traffic varies, but they will cease if a road is content to do no business whatever. As a consequence, a railroad company will take traffic which does not pay its apparent share of the general expenses, rather than not to get this traffic, provided the rate which can be charged covers the cost of train mileage, terminal expenses, and something, however little, towards the general expenses. If any traffic will yield so much, a railroad is better off with it than without it, provided the road's equipment and plant are not too congested to make any greater traffic worth while. Since the general expenses have to be met before anything is left over for profit, it is better to take additional traffic, as long as the plant is not congested, which will aid in paying these expenses, than not to take it, utilize the plant less fully, and get less profit. But it should be emphasized that if the total traffic of a railroad does not pay the necessary general expenses, and if it is not expected to do so in future, business will stop and the

road be abandoned;[1] or such general expenses as repairs may cease temporarily to be met, and the road will be finally abandoned when it can no longer be used without its owners meeting these expenses.[2]

Social economy does not require that each train load of freight should pay just as much towards general expenses as every other train load. The needs of the community may make it desirable that a railroad should connect two given places, *A* and *B*, and hence that the general expenses of maintaining the system should be met, even if only certain kinds of traffic can be secured to carry between these places. Suppose, however, that there is other traffic which the plant can perfectly well accommodate, but which cannot be taken if the charge for its carriage covers much more than the necessary train mileage and terminal expenses incident to this carriage. We may assume that this traffic, if it took place, would be from *A* to *B*, that the goods carried could be produced more cheaply at *A* than at *B* to the extent of a saving of $10.05 worth of labor and material. Assume, also, that the cost of labor and material (fuel, etc.) incident to carrying the goods, *i.e.* the train mileage expenses and terminal expenses, is $10. Then it is desirable that the goods should be carried. There is a saving to the community of 5 cents from carrying them. This is not much, but it is something. Since the general expenses are no greater because of this traffic, the labor and materials required to carry it yield a benefit as great as or slightly greater than the same labor and

[1] Cf. Fisher, *Elementary Principles of Economics*, New York (Macmillan), 1912, p. 328.

[2] Though these expenses may be met, temporarily, for the sake of patronage, etc., if there is hope for better things in the future. Cf. Hadley, *Railroad Transportation*, New York (Putnam), 1885, pp. 70, 71.

materials would produce if otherwise employed. To carry goods which pay very little towards general expenses is not, therefore, necessarily to divert labor from a more productive into a less productive employment; it may be, if the railroad plant is not already fully utilized, the reverse.[1]

But if the total traffic of a railroad cannot pay enough to cover general expenses, then it is economically undesirable that the road should operate and continue to carry goods.[2] For if the total traffic cannot pay the general expenses, as well as train mileage and terminal expenses, then presumably it is not worth, to the community, the equivalent of these expenses. In other words, the transportation service yielded by the railroad is not equal in value to the services or the wealth which the same labor (or labor and materials, *e.g.* coal[3]) could produce if devoted to other industries.

Fourth and last comes a consideration of fixed charges or sunk costs, and of the influence which is or is not exerted by them upon railroad rates. Fixed charges, or at least that part of them which represents interest on a railroad company's debt,[4] must be paid whether

[1] If a portion of the plant, *e.g.* a track, which might otherwise be abandoned, is kept up in order that any special part of the total possible traffic may be taken, in order, for instance, that coal may be carried on a given railroad *as well as* wheat; then the additional expense of upkeep is borne for the sake of that special part of the traffic and ought to be covered by the rates which such traffic pays. But in practice it frequently happens that a given plant, *e.g.* a roadbed and two tracks, is in any case required for a proportion only of the possible business between two given places. This roadbed and these tracks, once constructed, can be more or less completely utilized without corresponding variations of the general expenses, and without the possibility of allocating these expenses to different parts of the business.

[2] Except temporarily, until the need of repairs, etc., becomes imperative.

[3] Involving, of course, labor for its production.

[4] Taxes are generally placed among fixed charges, but are sometimes levied on gross earnings and so vary with business. If rentals are not paid, leased lines

traffic is large or small. Stopping the business and abandoning the road will not relieve the corporation of its interest obligations, so long as it is not bankrupt. It may better run at a loss than not to run and thereby suffer greater loss.[1] Therefore, a road may continue to carry traffic, even although the goods carried do not pay enough to meet all the fixed charges.

Even if, because it cannot pay full interest on its debt, a railroad company becomes bankrupt, its plant is likely still to be operated. The bond holders would probably continue to operate the system after foreclosure had given them control, if it yielded or could be expected to yield much beyond general expenses, even though the per cent. profit should be less than average interest on their original investment. As we have seen, fixed charges are, in large part, interest on a funded debt, *i.e.* interest on that part of the sunk cost which was met by bond holders. Taking the capital as a whole, it has in large part been invested once for all. A great part of the investment cannot be withdrawn for other purposes. It must be used as a railroad or abandoned. So far as this is true of a railroad plant and equipment, the rate for transporting any given traffic will be made without any reference to fixed charges or to sunk costs.[2] The managers of the road will endeavor, in any case, to get for the road all the profit they can get. But they may accept a rate lower than a really paying rate rather than not get traffic. If six per cent. cannot be earned, it is nevertheless better to earn

must be surrendered. But there is nevertheless the sunk cost of such lines to be considered, even though the lines become independent.

[1] See Hadley, *Railroad Transportation*, pp. 70, 71.

[2] Assuming, of course, that the rate is made by the managers intelligently and without government compulsion.

two or three per cent. than nothing. Not only, therefore, may certain parts of a railroad's business pay little or nothing towards the fixed charges or towards interest on the capital investment, but even the traffic as a whole may be accepted at rates yielding an inadequate return on the original cost of the plant rather than that traffic should be much smaller and return on cost still less. The fixed charges, or sunk costs, also, cannot be allocated or attributed to any special traffic. Provided the railroad plant is not fully utilized, traffic which can contribute but little above the incident train mileage and terminal costs of its own moving, nevertheless adds something towards general expenses, fixed charges, and profits, and is worth taking.[1]

It is desirable from the point of view of the greatest total of national wealth, that the plant should be used even if the return realizable is less than that which could have been realized in other industries. In that case, it is true that the labor of constructing the railroad plant has been devoted to a less profitable instead of a more profitable industry. But this labor has been expended and cannot be reclaimed. If the results of its application are not cast aside, *i.e.* if the railroad plant

[1] By way of qualification it should be said that if a road is congested and cannot carry all the traffic offered, then the traffic which can pay least is the traffic which it should reject; and additional trackage should not be constructed for this traffic unless the rates chargeable can be expected to yield fair returns on the cost of such further construction. But it is apt to be the case, in practice, that the trackage which is in any case required for a considerable amount of well-paying traffic, is also sufficient for the accommodation of other traffic which is, therefore, worth taking even at somewhat lower rates. Also, if additional trackage is mistakenly constructed for traffic which proves to be relatively unprofitable, it may nevertheless pay better to take this traffic at low rates than to refuse it. It should be hardly necessary to add that if a railroad company's trackage, bridges, stations, etc., are capable of doing more work without additional construction, it may be desirable to take additional traffic at low rates, even though this traffic necessitates some increase of rolling stock.

which has been constructed is used, the labor of using it may produce as much as and even more than it could produce if otherwise directed. It may produce not only its own proper return but some return, however inadequate, on the misdirected labor of construction. The labor of construction plus the labor of utilization may produce a less value return than if it had been otherwise directed; yet since the labor of construction has been expended, the labor of utilization may add more to the net welfare of the community than if it were turned to other channels and the railroad plant abandoned.

Cost of construction of plant influences railroad rates in so far as this cost lies in the future. If it is believed that a railroad in any given territory and connecting any given points cannot get traffic enough or charge high enough rates to earn average profit or interest on the investment, capital will not be forthcoming for its construction. If a railroad already built cannot get sufficient traffic or charge sufficiently high rates, to earn as large interest returns as most other lines of business, competing roads are less likely to be built; its own lines are less likely to be extended; the supply of transportation is thus kept down; and transportation rates tend to be kept from falling further. Even expenditures for repairs which are made for the sake of traffic during a period of several years to come and which are, therefore, of the nature of permanent investment, will not be made if it is believed that interest on these expenditures will never be realized. It is desirable from the viewpoint of national wealth that this should be the case, that further direction of labor into a relatively unprofitable line should be prevented. We may say,

then, that over a period of many years, rates must, in general, yield a fair return on cost.[1] In a business requiring such tremendous capital investment, the oscillations to one side and the other of a normal return may extend, each, over a considerable period of time.

Even after the investment has been made, a railroad will not continue to operate indefinitely if it is believed that no return whatever can be realized. For part of the plant can, if necessary, be used in alternative ways. The roadbed may have been rendered useless for any other purpose. But the terminals, and especially, perhaps, the land on which the terminal structures have been placed, would have value and would yield a return, if otherwise used. Though a railroad unfortunately located may, therefore, be operated for what would otherwise be an inadequate profit, it will not intentionally be permanently operated for a less profit than parts of its plant, such as terminal real estate, would yield in other uses.[2] Obviously, it is not desirable that the railroad should be operated, if its services are of so little value to the public, and if the terminal real estate and other parts of the plant would yield greater service in other uses.

[1] At least, investors must expect this if their capital is to be risked. See discussion in Marshall, *Principles of Economics*, 6th ed., London (Macmillan), 1910, pp. 372–375 and 420, 421.

[2] If it is objected that the value of terminal real estate for any use depends largely on the presence of the railroad, the answer may be made that this is not true if we suppose the railroad plant to be decreased by small increments or if we suppose the places in question to be served by several railroads. In other words, it is not true for the marginal railroad or the marginal track or the marginal construction of transportation plant in general. Furthermore, while it is a fact that the presence of railroads operates to increase land values, it is also true that the presence of other industries and of large population is a necessary condition to high land values and, therefore, to high value of railroad-owned real estate.

It is not enough to say that a railroad should not be constructed unless it will yield an average profit on its labor cost. It should yield, also, a surplus above this amount, as great as the land space required would yield in the best alternative use. If the railroad cannot yield such a return, it is more economical to use the land otherwise; the transportation use is not as important as the other use; the unwillingness of the community to pay as much, in transportation rates, for this use, as they can be induced to pay for the other, is evidence that the other is more needed or, at least, more desired.

The growth of a community frequently adds greatly to the profits of railroads and other land owners. The land comes to have more rental value for nearly all purposes. Though this community growth is partly due to railroads, it is usually the result of many causes of which the building of any particular railroad is only one. It is frequently asserted, therefore, that this greater profit of railroads is unearned and that it should not be enjoyed by the owners of railroad securities. Assuming this view to be correct (and it is unnecessary for our present purposes to prove or disprove it), the conclusion does not follow that rates should be reduced. As above stated, a railroad does not justify itself unless it can earn as much as the land could earn in some other use. If the rental value has gone up for other uses because of community growth, presumably the amount which the land can earn if used for a railroad, will be greater. Rates will probably not be higher and may even be lower, but business will be larger. To reduce rates arbitrarily by law, in order to deprive railroads of an alleged unearned increment, would serve no good pur-

pose. It would be a discrimination against railroads as compared to other land owners. It would largely prevent the use of land for railroad building, even, perhaps, when railroads are much needed. It would give the benefit of the unearned increment to those who patronize the roads instead of to those who own them, or to the different members of the community in proportion to the use each makes of the railroads. It would not give the unearned increment to the public as a whole, to be used for public benefit. If the unearned increment belongs to the whole community, as is frequently claimed, this community right can be asserted with least inconsistency and least interference with an economical distribution of labor to different lines, by a general and properly apportioned tax on land values.

§ 4

Average Railroad Rates as Affected by Degree of Utilization of Railroad Capital

Since expenses for the production of train mileage do not increase in proportion to traffic, and since general expenses and fixed charges (or sunk costs) taken together do not greatly depend, within the limits of utilization of plant, upon the amount of traffic, it follows that average rates can be made lower without being made unprofitable, if utilization of plant is relatively complete. Where traffic is extremely heavy, even though there are a number of railroads to carry it, each railroad may be fairly well utilized and so able to make low rates. Where traffic is very light, even a single one-track railroad may be utilized to so slight a degree that its rates must be high to yield a reasonable profit.

We have said that the tendency to decreasing proportionate cost does not apply to the same extent after existing plant is fully utilized, though it may apply to some extent if a larger plant can give more economical service than a smaller. A double-track road, fully utilized, may, as has been already pointed out,[1] be able to carry goods more cheaply than a one-track road. Trains can follow each other more closely and with less switching, each track being used only for the traffic in one direction. Maintenance costs will not probably increase in proportion to the efficiency of the plant. Similarly, large and powerful engines, and cars of great carrying capacity, which it would not pay to use if traffic were small and the average train load light, may mean much cheaper transportation if the volume of traffic justifies their use.

§ 5

Expenses and Rates of Water Transportation

Expenses of water transportation may be classified in much the same way as expenses of rail transportation. First, there are the expenses which pertain particularly to moving the traffic, and depend most nearly upon the amount of traffic. This class of expenses includes fuel, wear and strain on machinery and vessels, so far as due to use, and, in a great degree, wages of seamen. Even these expenses do not vary strictly in proportion to traffic, since they are not twice as great for a vessel fully loaded as for one carrying only half a cargo. But in the case of the tramp vessel, sailing almost invariably only after it has secured a full or nearly full cargo, these

[1] § 2 of this Chapter (I of Part III).

expenses probably vary in something like the same proportion as business. And traffic which cannot pay enough to cover these expenses would be refused.

Second, we have terminal expenses, including the cost of loading, unloading, and transshipping, the charges for pilotage and towage, charges for wharf space, etc. If a navigation company owns the wharves it uses, part of the expense for wharf repairs may properly be classed with terminal costs. Terminal expenses vary to a considerable degree as the volume of traffic but not in proportion to the distance it is carried. All traffic carried must therefore pay enough to cover the incident terminal costs, but traffic carried long distances will not necessarily be required to pay higher rates than that carried short distances, except as the mere cost of carrying it is greater.

General expenses, in the case of navigation companies, include some of the expenses of managing, *e.g.* the salaries of ship officers so far as these salaries may be steady regardless of increases or decreases of traffic. In the case of companies operating a line of ships, expenses for general oversight, freight soliciting, etc., would have to be included. General expenses would include, also, cleaning of the hulls of vessels, part of the repairs, part of the expense of wharf maintenance where a company itself owns the wharves used, etc. These expenses would stop if business were given up and, therefore, the business as a whole must cover them; but they do not vary as traffic varies, cannot be definitely allocated, and do not fix a minimum rate for any particular business. If it is necessary to get the business, a rate may be made for certain special traffic,[1] or between certain special

[1] See, however, § 6 of this Chapter (I of Part III).

points,[1] or during a given period of time or season when business is not easy to secure, which pays but little towards the general expenses. It is better to take traffic which helps to pay the general expenses, even if it does not pay what appears to be its mathematically proportionate share, than to refuse this traffic and so lose the smaller share which it can pay. Only if equipment is fully utilized by the better paying traffic, can traffic which contributes even but a little towards general expenses be properly refused. On the other hand, traffic as a whole must pay enough, in the long run, to cover general expenses, or it will not be worth while for a navigation company to continue operating.

Fixed charges include interest on the original cost of ships and of terminals, if construction is with borrowed capital. In any case, the original cost is a sunk cost. It cannot be recovered (except so far as the materials used have value as lumber or old iron, etc.) if the investment of capital proves to have been unwise. The individual investor may sometimes recover it by disposing of his ships to some one else for more than they are worth, but for society as a whole, the choice cannot be made again. The fixed charges or sunk costs do not vary with traffic and cannot be definitely allocated. They do not fix a minimum rate for any special traffic. Part of the cargo of a regular-line ship (which must sail on schedule, whether loaded or not) may pay but little towards the fixed charges or even towards general expenses, and yet be worth taking if traffic is light and nothing else can be had to make up a full cargo.[2] Even a vessel carrying cargoes in bulk, *e.g.* a "tramp" vessel,

[1] See remarks at end of § 1 in Chapter IV (of Part III).

[2] Except roughly over extremely long periods. See remainder of this section.

may sometimes carry freight during a dull season or on a single trip, though this traffic does not pay the usual profit, rather than to refuse the traffic and get no profit.

If the business as a whole of a navigation company does not pay general expenses and cannot be expected to, abandonment of ships is more economical than continued use, although in some cases vessels can, as railroads cannot, be taken into other districts where their use might pay. But if the traffic pays all the general expenses and something besides, even if this surplus is not a fair interest on the original investment (but is fair interest on the value of the material for other uses), continued operation is worth while. If ships have been mistakenly built for traffic which cannot bear profitable rates, or if they have been built too small or too large for the most efficient service, it is nevertheless better to earn 2 or $2\frac{1}{2}$ per cent. than nothing. It is better from the viewpoint of national wealth that such equipment should be used even if its construction has involved a partial waste of labor, than that the equipment should not be used and that the labor of its construction should be, therefore, a total waste.

If, however, the average rate chargeable, multiplied by the traffic, cannot yield enough to pay fair interest on investment in ships, new ships are not likely to be built as rapidly as commerce increases, or even, perhaps, fast enough to replace the old as they become unseaworthy. As long as existing ships can be kept in service by not too extensive repairing, they will be used. But anything in the nature of renewed investment will not occur. It would involve a diverting of labor into a relatively unprofitable line, if it did occur. So, in the

long run, although not necessarily over a period even of several years, rates charged must cover interest on investment, else supply of service will not equal demand.

§ 6

Comparative Importance of General Expenses and Fixed Charges on Railroads, on Natural Waterways, and on Canals

It should be particularly emphasized that transportation on the ocean and sometimes on lakes and rivers differs from railway transportation in the relative unimportance of general and fixed charges. There are no appreciable general expenses in ocean navigation for maintenance of way,[1] and there are no fixed charges (or sunk costs) resulting from the necessity of constructing a way or roadbed and tracks for the passage of cars. Both general expenses and fixed charges appear to be of less relative importance in the case of ocean and sometimes lake and river transportation. Water transportation seems, therefore, not to be so markedly a business of decreasing proportionate expense or increasing return.[2]

Furthermore, in the case of securing rail transportation between two distant points, the least possible investment is a roadbed and a single track, costing, perhaps, millions of dollars; though the traffic available may not at all fully utilize such a plant. It is very apt to be the case, therefore, that if there is enough of paying traffic

[1] Except as lighthouse service, etc., may be so regarded; and this is an expense usually borne by government.

[2] Cf. Report of the Commissioner of Corporations on *Transportation by Water in the United States*, 1909, Part I, pp. 13, 14.

to warrant building the road, it will be worth while to take additional traffic at lower rates, when such additional traffic will pay anything whatever, however little, towards net profits. In the case of transportation on a natural waterway, however, nothing but vessels and wharves have to be constructed. If possible traffic is small, fewer vessels will need to be constructed for it, or the vessels constructed may be made of smaller size. In a sense, a part of a vessel can be constructed for the traffic, since a vessel to be used mainly for other traffic can make an occasional trip between the two points in question. Thus, in the case of transportation on natural waterways, excess facilities on which to pay interest are, perhaps, less frequently constructed, and there is probably less occasion to seek additional traffic at lower than average rates, in order to utilize such facilities. So far, of course, as larger vessels are a distinctly more economical means of carrying freight than smaller ones, there is a motive for building ships large, even if, fully to utilize them, some freight must be taken at slightly less than average rates.

Water transportation expenses seem to be more analogous to railroad expenses, when vessels navigate a canal or other waterway on the improvement of which much money has been spent. The annual cost of maintaining the canal or other waterway, *e.g.* dredging or repairing, or both, may be regarded as very largely a general expense. The amount spent in constructing or improving the waterway is a sunk cost, and, if the money was borrowed, interest on it should be regarded as a fixed charge. As a matter of practice, such improvements are commonly made, in this country, by government, and the interest is apt to be regarded, not as a

fixed charge on the traffic, which ought to bear it, but as a fixed charge on tax-payers.

Taking the case of a canal, the logical conclusion, according to the principles which have been set forth in this chapter, regarding railroads, is, that no goods should pass through without paying whatever extra costs their carrying occasions, including cost of moving, wear occasioned on the canal, etc.; that traffic which can pay that, and anything besides towards general expenses, should be accepted rather than rejected, if plant is not fully utilized; that the traffic as a whole must pay all general expenses of operating the canal and keeping it in repair, else permanent operation will not pay; that it may be better to operate for a small profit, once the canal has been constructed, than to refuse to operate because profits are not large; that the construction of a canal or the improvement of any waterway should not be undertaken unless a profit approximating that in other investments is reasonably to be expected, and that the construction or improvement of a waterway when such returns cannot be had, involves a diversion of labor from a more profitable into a less profitable line. It may be added that a canal, like a railroad, should not be constructed if some other use of the necessary land space would yield a larger return.

§ 7

The Proper Basis of Wharf Charges

Wharves are often owned by other interests than those owning the vessels using the wharves, not infrequently by states or municipalities. It may be worth while, therefore, to give brief separate attention to the sub-

ject of wharf charges. The charges for use of a wharf may properly be high enough, taken as a whole, to pay the average return on necessary investment for construction. Also, the space required, if it has value for other purposes than as wharf space alone, *e.g.* for the location of a manufacturing plant on the water's edge, may rightly be made to yield as much when it is used only as a wharf. Otherwise, the space is devoted to one use, and some other use, able to pay more and, therefore, presumably more worth while to the community, is excluded.

Or again, if, about any given harbor, the space which can satisfactorily be utilized for wharves is limited, the charge for use of wharves may, not unjustifiably, be high enough to keep the demand for wharf space down to the available supply, or to keep the demand for the more desirable wharf space down to the available supply. Such a charge cannot operate to decrease commerce, for it allows all the commerce for which there are facilities, and no more commerce could pass through a given port if there were no charge whatever. Neither will such a charge operate to raise prices to consumers, for it will not limit the supply of goods going through the given port or over the desirably located wharves, any more than such supply would be limited anyhow by the lack of space. The limitation of the supply of goods is all that can raise their prices, and the supply of goods is not affected. In any case, the remainder of the goods, beyond what the given port or the given desirable wharves could provide accommodation for, would have to go inland by way of other ports or other wharves, and the competition of these will determine supplies and prices. If the superior port or wharves did not charge

for its or their superiority, the fortunate users (ship owners or sellers of goods) would simply get a surplus profit over what their rivals could get, analogous to land rent.

The proper charge, then, is a fair rent for the space used, based upon its desirability and its scarcity, and a fair interest for any necessary cost of construction. This is what the charge would tend to be under competitive conditions. No one would be likely to charge more for his wharf space, else it would not be used. No one would be likely to charge less, for the demand would make it possible for him to get that amount [1] whether others chose to do so or not. What would be a normal competitive charge under conditions of private ownership is what ought to be charged by state or municipality if it owns the wharves.

The statement that a proper charge includes economic rent for space required does not necessarily mean that this rent should go ultimately into the pockets of private persons. Space afforded is not service rendered or effort sustained by an individual. The rent for it may plausibly be regarded as an unearned income and as properly belonging to the community. But, in any case, the rent of wharf area constitutes in this regard no separate problem. It should be judged along with the problem of land rent in general.

§ 8

Economic Objections to Monopolistic Transportation Rates

Up to this point we have been concerned chiefly with the question of what expenses transportation rates ought

[1] See Part I, Chapter I, § 2.

to cover and what returns on investment they ought to yield. A few words should be added regarding what returns they ought not to yield. They ought not to yield monopoly profits. High rates yielding surplus or monopoly profits are distinctly adverse to the general interest. Not only do they involve an unfortunate distribution of the products of industry, but also they involve a diminution in the total amount of these products. For a monopolistic transportation company will charge those rates on each kind of traffic which yield the largest profit, even though a lower average of rates would be profitable, would more fully utilize the transportation plant, and would widen the field of commerce. Monopoly rates prevent transportation which would be worth to the community the labor cost required, which would be worth fair rates, but which cannot take place when excessive rates are charged.[1] Monopoly rates, like tariffs, interfere with commerce between communities, with commerce which would be profitable, if not thus prevented, to both or all the communities engaged in it.

§ 9

Summary

The discussion of expenses of water transportation has already given us, because of the analogy between the two, something of a review of the principles regarding railroad expenses. A brief summary of the conclusions of this chapter may, therefore, suffice. For both rail and water transportation, we made a fourfold classifi-

[1] It is impossible for the monopolistic company to avoid this result by making low rates on such particular parts of its traffic only as are for the use of hesitating consumers, since nobody knows who these consumers are or which special tons or bushels will eventually go to them.

cation of expenses. First there are the expenses pertaining most particularly to the moving of goods. Second there are terminal expenses, affected by the volume of traffic but not by the distance carried. Third, there are general expenses which will cease if the plant or capital equipment is abandoned but which change only a little with considerable increases or decreases of business. Fourth, there are fixed charges or sunk costs, which, once the investment has been made, do not vary with traffic. Each item of traffic must pay a rate high enough to cover the additional expenditure which it occasions. To carry traffic which cannot pay this involves economic waste. Traffic as a whole must cover general expenses, else continuance of transportation service becomes unprofitable. Construction of transportation facilities should not be undertaken unless there is reasonable probability that traffic as a whole can pay a fair return on investment. Yet if investment has been mistakenly made, it may be better to operate for small return than to abandon the capital so invested. Total charges should be high enough to pay at least as large returns beyond interest on construction cost as the space used would yield if devoted to the best alternative purpose. Up to the limit of complete utilization of plant, expenses of transportation increase less rapidly than business. Beyond that limit, they may increase less rapidly than business if the larger plant is more efficient than the smaller. But additions to plant may mean, for a time, incomplete utilization and so greater proportionate expense. Water transportation on free waterways appears to be less subject to the tendency towards decreasing proportionate expense than rail transportation, because there are no corresponding

expenses for construction and maintenance of way. Water transportation on canals is in this regard more analogous to rail transportation. Wharf charges should cover interest on necessary construction cost plus a normal land rent for the space used. Finally, as to both rail and water transportation, the conclusion is that monopoly rates are uneconomical as well as unfair, since they tend, like tariff restrictions, to interfere with commerce which is normally profitable and which ought to be allowed to take place.

CHAPTER II

The Competition of Transportation Companies

§ 1

Competition of Routes

Competition of transportation lines may be classified as of four kinds: competition of different companies over the same route, competition of routes, competition of directions, and competition of locations. Let us consider these four kinds of competition in order. Competition of different lines over the same route applies particularly to transportation on free waterways, for example, on the ocean. In such transportation, the way or route is not the possession of any one company but may be used by all. The different companies operating over a given route may be in competition with each other.

Competition of routes may exist between navigation companies or railroad companies or both. By competition of routes is meant competition between two or more different routes or lines of transportation, either or any of which can carry goods between two given points. Such a competition, for example, is that which obtains between Chicago and New York. These cities are joined by a number of transportation lines. Goods moving between these two points have a choice of routes; and the tendency is for the goods to be sent, in each case, by that route which is, for the shipper, most economical, considering rates, speed, liability to

injury, etc. Some of the possible routes are: that by the Great Lakes, the St. Lawrence River, and the Atlantic Ocean, that by the Lake Shore and Michigan Southern and the New York Central railways, that by the Pennsylvania lines, and others. The transportation of wheat, corn, and other farm products from American centers of production to Europe, *e.g.* between Chicago, St. Louis, etc., in the United States, and Liverpool in England, is another example. These products can frequently be taken via the Great Lakes, via any of the trunk lines, or via lines operating in southern territory to Norfolk, Galveston, or New Orleans, and thence to Liverpool. Still another example of competition of routes is the traffic from Australia and China to New York, which may be carried either by ship westward via the Suez Canal or by ship eastward to San Francisco and thence by rail to New York (soon also, doubtless, the Panama Canal will be a permanently available avenue of transport). These two different routes are in vigorous competition for the traffic.[1] We have substantially the same kind of competition, *i.e.* of routes, when goods are stored with wholesalers or jobbers at intermediate points, and, likewise, when they are changed in form, say from raw materials to finished products, at intermediate points, provided source and destination of traffic by the various routes are about the same. The different transportation companies compete, each to carry goods from the common source to manufacturers or jobbers on its own line and thence to the common market. Each transportation company desires that the conditions shall be as favorable for such stoppage and reshipment on

[1] McPherson, *Railroad Freight Rates*, New York (Holt), 1909, p. 146.

its line as on rival lines. In order, however, that the competition of routes between two or more rail or water lines may be availed of, it is not necessary that the goods to be shipped should be produced at a point where several such lines meet. It is only necessary that the goods should be produced within reasonable wagon- or truck-hauling distance from such routes. Thus, within the wheat- and corn-producing regions of the United States, numbers of farms are located near enough to two or more railroad lines to exercise a real choice among these lines.

Competition of routes may mean and frequently does mean that goods are taken to their destination by a very roundabout way. Sometimes the distance freight is actually carried in being taken from one point to another is from 50 to 100 per cent. greater than the shortest possible distance.[1] In the Savannah fertilizer case, for example, it was shown that goods were carried from Charleston, S.C., to Valdosta, Ga., by connecting lines of railroad, a distance of 413 miles, when they might have been carried by a more direct line to Valdosta, a distance of only 275 miles.[2]

Other things equal, such roundabout transportation is uneconomical.[3] It costs more to carry goods by a long than by a short route between two given points. Assuming the same rate on either line, the long line presumably has a less surplus as profit than the short line would have. Diversion of freight to the long line, therefore, probably means that the short line loses a

[1] W. Z. Ripley, *Railroads, Rates and Regulation*, New York (Longmans, Green & Co.), 1912, pp. 269, 270.

[2] Interstate Commerce Reports, Vol. VII, p. 476 (458–480).

[3] Cf. Ripley, *Railroads, Rates and Regulation*, Chapter VIII, where this and other transportation wastes are criticized.

larger profit than the long line gains. Looked at from the point of view of community economy, it means that a greater amount of labor is used to secure a result which a smaller amount of labor would equally well secure. This greater amount of labor is less profitably employed than it might be, with resulting loss in the total of the community's wealth. As in the case of the protective tariff, labor is employed where it does not yield the maximum return to the community. It is not, of course, always the shortest line in miles which is most economical. The shortest line may be one which has relatively steep grades and so requires more labor and fuel than a longer one. As between two lines of equal length, the choice should ordinarily fall upon the more level; while as between two lines of equal grades, the choice should ordinarily fall upon the shorter. For the same reasons, it is desirable, *other things equal*, that a place should have goods brought to it from the nearest source of production and that centers of production should send their goods to the nearest markets. This, of course, may be very undesirable when other things are not equal. It may be better that goods be brought from a far cheap source than from a near-by dear one. But where production costs are equal, transportation costs should be the least possible.

§ 2

Circumstances which May Make Carriage of Goods by a Longer Route More Economical than their Carriage by a Shorter Route

There are, however, three possible situations, in any one of which it may be desirable that goods should be

carried by a relatively long and roundabout route instead of by a shorter and more direct one, even though grades are equal. To illustrate the first case of this sort, suppose the cities *A* and *D* to be connected by the two railroad lines *AD* direct and *ABCD*. (See figure 1.)

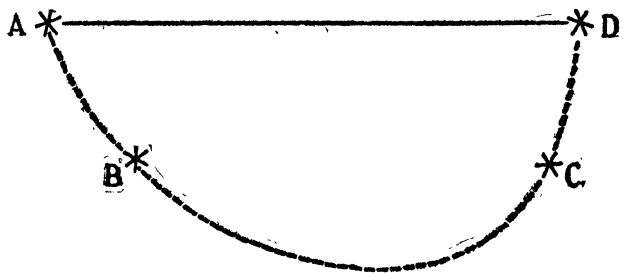


FIGURE 1

Suppose, also, that the traffic between *A* and *D* is more than the direct line *AD* can properly care for. Then it may well be that the surplus traffic, beyond what the line *AD* can carry, should go by the indirect line *ABCD*, rather than that a new direct line should be built between *A* and *D* or that the line *AD* should increase its trackage. For the construction of a new line or more trackage involves an additional investment of capital. The capital invested in the roundabout line *ABCD* has been already sunk and cannot be recovered. If the line *ABCD* yields any appreciable interest returns, it will probably be worth while to operate it, even though these returns are small. From the point of view of greatest national wealth, it is desirable that such a plant should be operated, even though it would not be desirable, could the choice be made again, to construct the plant.

On the other hand, the construction of a new line or

new tracks should not be undertaken unless rates can be charged which will pay about the average return on investment. The old roundabout line may be able to make profit enough to justify its continued operation for a great many years, on rates lower than would justify the construction of a new line, even if a more direct one. The construction of such a new line, under these circumstances, would involve economic waste. Exactly the same conclusion may be reached if we assume that there is no direct line but only the roundabout line between *A* and *D* and that the roundabout line is able to carry the traffic between these two points. To the question whether a direct line ought, under such circumstances, to be constructed, it is not unlikely that a correct answer would be a negative.

To illustrate the second case where carriage of goods by a more roundabout line may be desirable, suppose (see figure 1) that there is a great deal of possible traffic between *A* and *D*, but that no railroad connecting those points has yet been built. The question is, whether a direct or an indirect line will be the more profitable. Other things equal, the direct route would be preferred. But let us suppose that *B* and *C* are thriving towns, and that the traffic to and from each can be greatly developed, while on a direct line from *A* to *D*, no other towns are located. On this supposition, a direct line, if constructed, must be able to earn enough on the through traffic between *A* and *D*, to pay not only production-of-train-mileage expenses and terminal expenses, but also all of its general expenses and profits. To do this and yield profits worth building for, it may have to charge fairly high rates. If a roundabout road is built, through *B* and *C*, it will have the

local traffic between *A* and *B*, between *B* and *C*, and between *C* and *D*, as well as the through traffic between *A* and *D*. The local traffic will presumably help to pay general expenses and interest or profits on the investment. The local traffic may, in fact, pay enough to cover all the general expenses and almost enough to justify, even with no other sources of revenue in view, the construction of the road. If the road is built, rates can be made on the through traffic between *A* and *D*, which yield very little more than is required to cover additional production-of-train-mileage costs and terminal costs; yet this little more will make the road a paying proposition. Even though freight from *A* to *D* or *vice versa* would have to be carried a longer distance on this road, it may be possible to carry it for lower rates than would pay all expenses, including general expenses, and including also a fair profit, on a more direct road. Yet without the through traffic between *A* and *D*, the line *ABCD* might not be able to make an average profit, or it might be able to make such a profit only by charging higher rates on its local, short-distance business. If, then, a more indirect line can carry goods more cheaply between *A* and *D* than a direct one, while making no less a per cent. or a greater per cent. profit, and while, perhaps, being able to make lower rates on its intermediate traffic than would otherwise be necessary, the former is the more economical route to select.[1] If the indirect route is chosen, the

[1] If, however, both a direct and a roundabout line already exist between *A* and *D* and it is merely a question of constructing a new line or additional trackage, because of insufficiency of the existing plants, then whether the direct or the indirect route would be economically preferable will depend upon the relative amounts of intermediate and through traffic. If the existing roundabout road can handle all the intermediate traffic, *i.e.* the traffic from *A* to *B*, from *B* to *C*,

additional labor necessary to carry the longer distance traffic is less than if a direct road is constructed for the longer distance traffic alone. The same principle may apply if the more direct line can hope to secure some intermediate traffic, but considerably *less* than the other. The same principle may apply, also, if the direct railroad, *AD*, though able to carry all the local or intermediate traffic available along its line, is nevertheless inadequate, without the construction of one or more additional tracks, to carry, besides, all the traffic seeking to go the entire distance from *A* to *D* and from *D* to *A*. In such a case, the additional track or tracks on this more direct route, if constructed, would be solely for the sake of the longer distance traffic, and to lay them would be uneconomical unless the longer distance traffic would alone yield a reasonable profit on the additional capital investment required. Supposing that a roundabout line, through *B* and *C*, had not previously been built, and that, if constructed, such a line could be largely supported by intermediate traffic, while yet being able to carry some of the longer distance traffic also, the roundabout line might be a more economical and more profitable investment of capital than additional trackage along the direct line.

The third case to be here considered is a case where the lines *ABCD* and *AD* (see again figure 1) have both

from *C* to *A*, etc., and the inadequacy of facilities is due solely to the excess of the *A* to *D* and *D* to *A* traffic over what the direct road can carry, additional construction along the more direct route would almost certainly be the more economical investment of capital. Rather than lay additional tracks, the roundabout line should, perhaps, under such circumstances, resign all through traffic and confine itself to intermediate traffic. But if additional trackage must be constructed by the roundabout line for the intermediate traffic, and if such additional trackage will also serve for the carriage of some of the through traffic, the roundabout line may be economically justified in carrying both.

been built, but where the traffic between *A* and *D* is not more than can be taken care of by one of the roads alone. Not only is there no need for new construction, but already existing facilities are in excess of business. Unless more traffic is to be hoped for in future, it will be the truest economy to abandon one of the roads. Otherwise the community must be burdened with two sets of general expenses and must in so far lose the economy that comes from complete utilization of a transportation plant.[1] If other things are equal, the conclusion will be that the more roundabout road should be the one to be abandoned. But, as in the second case, other things may be unequal. The roundabout road may be able to rely upon intermediate traffic which the more direct road cannot hope to secure. In that case, the direct road *AD* cannot afford long to operate unless the through traffic between *A* and *D* can bear rates high enough to cover most or all of the general expenses of the road. But the road *ABCD* has, by hypothesis, intermediate traffic to and from *B* and *C*, and this intermediate traffic may possibly be considerable enough to pay all the general expenses of the road and something towards profits. It may be worth while to operate the road *ABCD* even without any of the through traffic between *A* and *D*, or with rates on this through traffic barely above the additional production-of-train-mileage costs and terminal costs necessary to move it. The roundabout road may therefore be able to make lower rates on through traffic between *A* and *D* than the direct road could

[1] This saving has been already in part lost, when the unnecessary line has been constructed, since capital which might have earned a fair return has been put where it cannot do so.

possibly afford to make, even though the former must carry the goods longer distances; and may yet be a more profitable investment for its owners than the latter could hope to be without charging higher rates. It may sometimes, therefore, be truer economy to abandon the direct than to abandon the roundabout line between two given points.

An illustration of a movement of traffic in part by relatively indirect routes is furnished by the import and export trade of the United States. Goods are carried to Chicago and other middle western cities from Europe, and from the great grain-raising sections of the United States to Europe, by various transportation routes, and not always by the shortest. All the important ports and the railroads and steamship lines serving these different ports are in competition for this traffic. Wheat may be carried due south to New Orleans, or southeast to Galveston, and thence to Europe, instead of going east through Baltimore, Boston, or New York. If a railroad from the American wheat and corn regions to Norfolk, Newport News, Galveston, or New Orleans is useful for domestic commerce, and can add anything to its profits by engaging at lower rates in export and likewise import trade, it may be as well or better that such a railroad should engage in this trade, as that the New York Central and the Pennsylvania systems should enlarge their plants so as to do more of export and import business. The different ports and railroads concerned in this business have on many occasions engaged in contests to secure, each, a larger share of the trade. These contests can only be satisfactorily settled by such an agreed relation of rates as will secure to each road a quota of the business.

The Interstate Commerce Commission itself, when endeavoring to settle such a contest, has been able to find no better basis than this.[1]

The conclusions we have reached, should, it is believed, have some weight against any proposal to prohibit absolutely the competition of roundabout lines. We have seen that there are possible cases where a roundabout line may more profitably be built for the traffic between two points than a direct one. Yet if the builders know in advance that they will not be allowed to compete against a direct one, should the latter be constructed, they will be less apt to build the roundabout line. Undoubtedly there are wastes of competition in the form of uneconomical carriage of goods over unduly long routes to destination, and some legal limitation on these wastes may be desirable. Yet on the other hand, as we have seen, it is not necessarily always the shortest line which is really the most economical for the purpose. Furthermore, the stimulus of competition between rival routes is not altogether without beneficial effects in hastening improvement, increasing efficiency, and keeping down average rates. The Interstate Commerce Law of the United States penalizes the competition of roundabout lines by forbidding rates on intermediate traffic, *e.g.* from *A* to *C* in our figure, higher than rates on longer distance traffic over the same line in the same direction, the shorter haul being included in the longer; though the rigor of this section (4) of the law is lessened by the power of the Interstate Commerce Commission to set it aside on application of the common carrier concerned, in cases where such a ruling

[1] See Interstate Commerce Reports, Vol. XI, pp. 13–81, particularly pp. 62, 63.

seems proper, and to whatever extent circumstances seem to warrant. An application of this law or of its principle of limitation, which should require of the straightest line between two points, strict conformity to the law as now worded, and which should allow to more roundabout lines, in some cases, a percentage departure from this rule, might satisfactorily meet the difficulty.[1] A more roundabout line might be allowed to depart from the rule by a larger per cent. than one less roundabout, since otherwise reduction of its rates on goods going over the long distance might require so great reductions on its intermediate traffic as to deprive it of revenue. Yet after a certain degree of roundaboutness had been reached, further increase of the allowed percentage departure from the rule might properly be refused, since an undue difference would mean either that the long-distance traffic was being carried for less than the additional cost occasioned, or that the intermediate traffic was being charged exorbitant rates.

The solution here suggested would not do away with all uneconomical roundabout carrying of goods, but neither would it do away with the stimulus of competition. It may be better to have competition even with the economic waste inseparable from it, than not to have competition at all. No government rate regulation can ever stimulate progress as competition does, even if it can successfully prevent the enjoyment of monopoly profits. If the percentage of deviation from the long and short haul rule were properly arranged, no road would have any unfair advantage over any other, and competition, so far as it existed, would influence

[1] For further discussion along this line, see Chapter V (of Part III), § 1.

intermediate as well as strictly competitive traffic. An administrative body such as the Interstate Commerce Commission, may well, perhaps, have power to decide in each case, in view of all the circumstances, the extent of departure from the rule which ought to be allowed, and the amended Federal law, as above stated, specifically gives to the Commission this power.[1]

In the case of ocean transportation, there is, as has been pointed out,[2] no expense for construction or maintenance of way. It would therefore never be worth while to abandon a more direct route in order to save expense of upkeep. Unless winds or currents, etc., interfered, full cargoes shipped at one point, and destined to another, would ordinarily go direct, though two or more available routes may, not infrequently, be equally short or otherwise equally favored by nature. A somewhat roundabout route may sometimes be chosen for the sake of intermediate traffic, especially in cases where through traffic will not by itself provide full cargoes sufficiently often to justify the frequency of service desired by shippers. Also, a roundabout line, whose vessels are mainly but not quite utilized by intermediate traffic, will sometimes enter into competition with a direct line for through traffic, in order to carry more nearly full cargoes. Sailing vessels frequently follow indirect routes to avoid regions of calm and of unfavorable winds, but in such cases the route which is long in miles may be the shortest in time.

[1] Its exercise has recently been upheld by the Supreme Court. See Intermountain Rate Cases, 234 U. S., 476.

[2] Chapter I (of Part III), § 6.

§ 3

Competition of Directions

The third kind of competition which we have to consider is competition of directions.[1] To make clear what conditions must exist in order that there should be competition of directions, we shall begin with an assumed case where such competition hardly exists in any significant degree. Suppose two roads leading from *A*, which we shall assume to be a center of coal mining, one to *B* and the other to *C* (figure 2). If

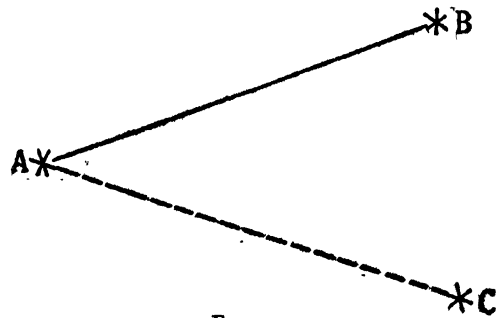


FIGURE 2

the roads *AB* and *AC* should compete strenuously, each endeavoring to carry the coal over its own line to *B* and to *C* respectively, we should have here an example of competition of directions. But unless we make further assumptions, there is little basis for a conclusion that such competition would take place. Neither road need reduce its rate on the coal to a competitive level even

[1] This, and the kind of competition next to be considered, are generally lumped together with, it is believed, inadequate analysis, under the head of competition of and for markets. See, for example: Noyes, *American Railroad Rates*, Boston (Little, Brown, & Co.), 1906, pp. 125, 126; Johnson, *American Railway Transportation*, 2d revised edition, New York (Appleton), 1909, p. 265; Ripley, *Railroads, Rates and Regulation*, pp. 118–123.

if the other road does so, and neither is likely to gain but is rather likely to lose from taking the initiative in such reduction. Suppose the road AB to make low rates on coal to B. It does not follow that the road AC must make low rates to C or lose the traffic. It is true that the producers at A will prefer to ship their coal to the market which will yield them, after subtraction of transportation expenses, the largest return. But the people at C will presumably need coal, and if the road AC has a monopoly to that point, it can probably continue to charge a high rate and still get large traffic. The people at C will have to pay a high enough price to cover this transportation expense and induce producers at A to send them the coal. The road AB will not succeed in diverting much more than previously of the output of A, to the point B, and therefore, since its rates are lower, will suffer a reduction of its revenues.[1]

Let us now consider a situation in which competition of directions might accomplish something appreciable for the community. Suppose, as before, two roads leading, one from A to B and the other from A to C. But suppose that both B and C are in part supplied with coal by competing roads leading from other coal-producing sections than A, namely, from D and E respectively. (See figure 3.) We may suppose, also, that the annual coal production of A is not sufficient to satisfy completely both of the markets B and C. In this situation, the lines AB and AC can charge high rates only by combination or agreement with each other and at the expense of producers at A. The price

[1] The possibility that B may be built up and that industries may desert C, and the consequent effects on the revenues of the roads, will be discussed with a consideration of the fourth kind of competition, that of locations.

of coal at *B* and likewise at *C*, because of the supply from another source or sources than *A*, cannot exceed, say, $5 a ton. High railroad rates from *A*, *e.g.* $3 a ton, cannot force consumers at *B* and *C* to pay more than $5, and must, therefore, result in a return of not more than $2 per ton to producers at *A*. But if the line *AB*, for example, reduces its rate from $3 to $1, in order to encourage larger shipments of coal from *A* to *B*, then the line *AC* must reduce its rate on coal carried

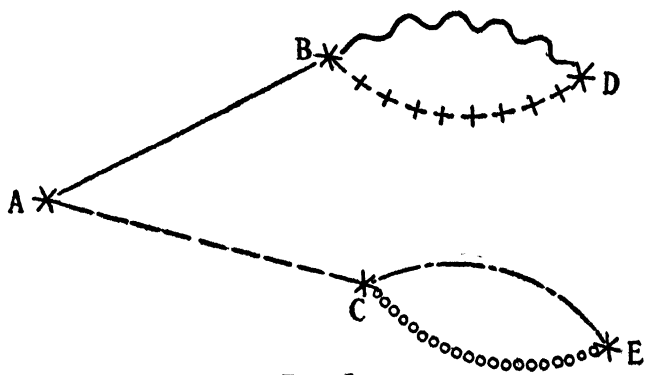


FIGURE 3

from *A* to *C*, or forego most of the business.[1] The line *AC* cannot continue to enjoy high rates on coal shipped from *A* to *C*, by imposing a higher price for coal on consumers at *C*, since competition of lines from *E* to *C* insures these consumers a price not above $5 a ton. Neither can *AC* impose the expense of $3 per ton rates, upon producers at *A*, thus keeping their net returns down to $2 per ton, since, if *AC* attempts this, producers

[1] Unless we suppose that the output at *A* is considerably increased, so as to leave a surplus for the high rate road even after a low rate by the other has diverted the former output. But it is not to be supposed that capital will be rushed to *A* and the poorer mines previously unused be suddenly exploited, for no better returns than could be had before.

at A will ship most or all of their coal to B, over the line AB, receiving about $5 a ton at B, paying $1 a ton freight, and having a net return of $4 a ton at the mines.[1] There is competition of directions because the coal produced at A will go, in the main, to B or to C according to the rates made by the rival roads AB and AC, leading in different directions from the same producing center.

Let us consider another possible situation. Suppose coal to be produced at A and at D and to be marketed

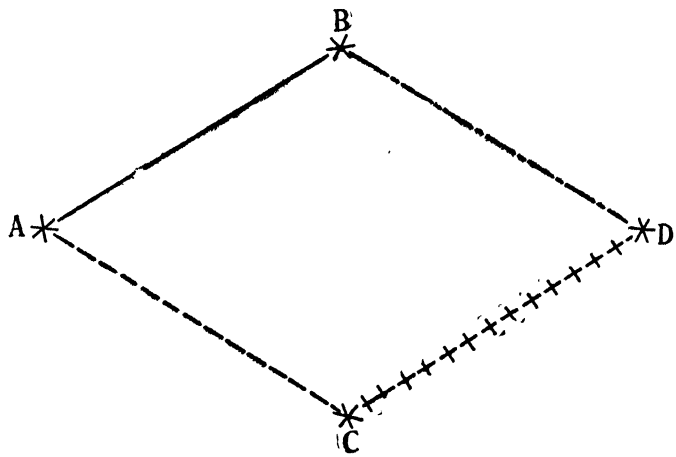


FIGURE 4

at B and C over the railroads AB, DB, AC, and DC. (See figure 4.) Suppose that, at first, each of the roads is charging $3 a ton to carry the coal either from A or from D to either B or C. The price of coal at B and at C is $6 a ton, and, therefore, at the sources of production, A and D, it is $3 a ton. One of the roads, for

[1] In practice, the extra supply of coal at B would tend to lower its price there somewhat below $5 and to lower the returns at A somewhat below $4. But the change in figures involved does not change the essential principle of the case.

example, the road AC, reduces its rate to $2, hoping thereby to get more of the business. We have to inquire whether such an action will force reduction on any or all of the other roads.

The effect of the reduction by AC will be different according as the benefit goes mainly to the producers at A, or to the consumers at C, or is divided more or less equally between them. Suppose, first, that the benefit goes almost entirely to producers at A, these producers receiving about [1] $4 instead of $3 per ton for all coal shipped to C, and the price at C remaining substantially unchanged. Then (assuming a limited annual production at A) the line AB would have to lower its rate between A and B to about $2. For otherwise, most of the coal mined at A would be shipped to C, instead of the shipments being divided between B and C. Since the price at B is, by hypothesis, $6, and the rate to B $3, the miners at A would get only $3 net on coal shipped to B as compared with nearly $4 on coal shipped to C. The road AB would, therefore, have to reduce or lose the business.

Suppose, second, that the benefit of the rate reduction by AC goes almost entirely to the consumers at C, in the form of lower prices for coal, coal selling at C for little above [2] $5 instead of for $6 a ton. The reduc-

[1] Probably not quite $4, for the greater amount of coal shipped to C in consequence of the reduced rate would almost certainly reduce the price somewhat. Yet this reduction of price might conceivably be small, because of an elastic demand at and about C, and because a small reduction of price might discourage and decrease shipments of coal to C from D.

[2] Probably somewhat more than $5, because the better market for A's coal would be almost certain to affect its price somewhat. Nevertheless, an inelastic demand at C, coupled with the shipping of somewhat more of A's output to C, might well result in the consumers at C reaping most of the gain from the lower transportation rate on coal.

tion by the line *AC* may then force an equivalent reduction by the line *DC*. Since coal from *D* can no longer sell at *C* for $6 a ton, either the coal producers at *D* must accept substantially $1 less on the coal sent by them to *C*, namely, $2 instead of $3 per ton, or the railroad *DC* must reduce its transportation charge from $3 to about $2. But the coal producers at *D* will not be likely to accept a much lower price at the mine than $3 for coal shipped to *C*, so long as they can ship coal to *B* at a rate of $3 and sell it there for $6 a ton. Unless the market at *B* is decidedly limited (or the output of *D* too great to be mostly sold there) the line *DB* will be an effective competitor of the line *DC*, for the traffic from *D*, and if the price of coal at *C* falls, while that at *B* does not, the line *DC* must reduce its rate or lose much or most of its coal traffic. It would be a superficial statement to say merely that we have here a competition of the lines *AC* and *DC* for the market at *C*. For *DC* would not be under the same compulsion that it is under to lower rates, were it not for the line *DB* and the alternative market of *D* coal at *B*. *DC*'s competition is, therefore, equally a competition with the line *DB*, and may be classified with other cases of competition of directions. The coal produced at *D* has a choice of the directions *DC* and *DB* towards the two possible markets.

Suppose, third, that the benefit of the reduced rate made by *AC* goes about half to the producers at *A* and half to the consumers at *C*. Producers at *A* get $3.50 instead of $3 per ton at the mine; and consumers at *C* have to pay only $5.50 instead of $6 a ton. On this supposition, the line *DC* will have to reduce its rate to $2.50 to meet the lower price of coal at *C*. Other-

wise, *i.e.* if the loss from the lower price at *C* is thrown upon those producers at *D* who ship coal to *C*, no coal miners at *D* will send any of their product to *C*, but will send it, instead, to *B*. The possibility that the coal will go in this other direction, *i.e.* to *B*, compels the road *DC* to reduce its rate 50 cents. Also, the road *AB* will have to reduce its rate to $2.50. For producers at *A* receive a net return of $3.50 on coal sent to *C*. With coal selling at *B* for $6 and with a $3 rate to *B*, they would receive but $3 net on coal sent to *B*. They would, therefore, send little or no coal to *B* unless the road *AB* reduced its rate to about $2.50. If the benefit of *AC*'s reduction is divided about equally, then, between producers at *A* and consumers at *C*, the roads *DC* and *AB* may each be forced to make a reduction about half that made by *AC*. The rates charged by *DB* would not have to be lowered unless *DC* or *AB* made a further reduction, or unless the road *DB* desired more traffic than before.

The situation is no different if the original reduction on the line *AC* results, not from a desire to secure more traffic, but from an order of a government regulating body such as the Interstate Commerce Commission. In either case, the other road or roads affected must also make a reduction or lose traffic. It follows that regulation, directly, of the rates of one railroad may affect and frequently does affect, indirectly, the rates charged on a number of other railroads.

One other hypothetical illustration of competition of directions will be given. Let us suppose *A* and *C* to be connected with each other by the single line *AC* (figure 5); but suppose that the competition of two lines from *A* to *B* (or government regulation of their

rates) fixes a minimum price below which coal producers at A need not sell, and that the competition of two lines from D to C fixes a maximum price on coal for consumers at C. The line AC must make a rate low enough to give the producers at A as high a price as they can get by shipping to B, and to give the consumers at C as low a price on coal from A as they have to pay on coal

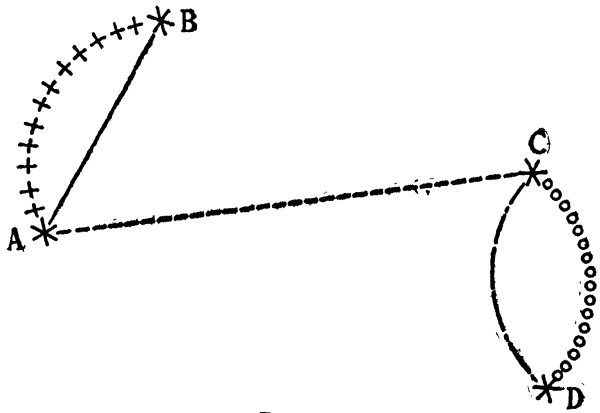


FIGURE 5

from D. Otherwise, the line AC will get no business and the coal produced at A will be carried to B. The line AC may be said to compete with the lines from D to C, for the market at C; and to compete with the lines from A to B, in order to carry coal produced at A over its line in the *direction* of C. It is situations of this general nature which justify the statement sometimes made by railroad men that they cannot make rates, but merely put in force rates made by commercial conditions. Nevertheless, the so-called commercial conditions which do determine these rates are likely to prove, on analysis, to be competitive conditions,

as here shown, and to be controllable in so far as competition can be controlled.

It is not difficult to find real cases where railroads are in one or more of such situations as have been described in this section, and are therefore subject to competition of directions. Consider, for instance, the position of lines leading from various Michigan and Kansas salt-producing points to different and the same markets, as brought out in a recent case before the Interstate Commerce Commission.[1] A number of transportation lines, rail and water, lead from Michigan salt-producing points to various markets, and among others, to markets west and southwest of Michigan, on the Mississippi River. To these same points on the Mississippi River, salt is brought over different lines, east and northeast, from the Kansas salt fields. The Mississippi River lies about midway between the Michigan and the Kansas centers of salt production. Points on the Mississippi, and other points, farther west, as well, may be supplied with salt from the Kansas or from the Michigan fields and, in fact, from different production centers in either of those states. On the other hand, many of the salt-producing centers have the option of shipping salt over any one of several transportation lines, either to several of the towns on the Mississippi River, or to other points in the same or different directions. Here, then, are all the conditions for competition of directions. Traffic from a given producing center, *e.g.* Detroit, Michigan, would meet like goods from another producing center, *e.g.* Hutchinson, Kansas, or some Michigan point other than Detroit, in a common

[1] Interstate Commerce Commission Reports, Vol. XXII, pp. 407–419, case decided February, 1912.

market, St. Louis. If the Wabash Railroad, leading from Detroit to St. Louis, refused to make reasonably low rates, it would find itself with less traffic or without traffic in salt. Rather than bear the burden of the higher rate, St. Louis dealers would secure salt from Hutchinson[1] or other Kansas points or from some Michigan point other than Detroit, *e.g.* from Manistee or Ludington, and, therefore, over other transportation lines than the Wabash. Rather than accept less for their salt by virtue of the higher railroad rate, the salt producers of Detroit, being so situated as to have this option, would prefer to ship their salt in another direction and to a different market, for example, by way of a lake route to Toledo, Cleveland, or Chicago. As a matter of fact, most of the Michigan salt, perhaps 80 per cent., is shipped in the first instance by water. In view of all these conditions, not to mention others more properly connected with competition of locations, the Wabash Railroad has found itself compelled to make rates on salt from Detroit, in reasonable relation to the rates made by these various competitors.

We have an illustration of what is probably, in part, competition of directions involving ocean carriers, in the export trade from the United States to South and East African ports. The rates charged are said to be maintained, as nearly as possible, on the same level as the rates from British and continental ports.[2] But

[1] If from Hutchinson, the Wabash might carry it part of the distance, but a much less distance than if from Detroit. But at St. Louis, the Wabash has particularly to fear competition from other Michigan sources of supply, not on its own line.

[2] Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, in Proceedings of the Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations, 1914, Vol. IV, p. 93.

why must such rates be made? Is it not largely because otherwise the goods which these vessels might carry from America would be shipped by producers in other directions and to different markets, either within or outside of the boundaries of the United States? In other words, is not one of the most important influences to be considered, the fact that the American producers *have an alternative* of which they will avail themselves if not granted reasonably satisfactory rates?

We may, indeed, broaden our conception of competition of directions, so as to have it include the making of rates to induce shipment of goods by producers, in a given direction and over given transportation lines, when otherwise some of these producers would find it more profitable to engage in the production of an entirely different class of goods, marketable only in another direction and over other lines. Thus, the ships leading from American ports to South and East African ports must charge on American goods, marketable in Africa, reasonable rates in relation to rates charged from Europe, not only because without such rates the American producers might seek other markets for those goods, but also because these producers might, to some extent, decide to engage in the production of other goods, not marketable in Africa. For the American producers to choose this latter alternative, no less than for them to choose the former, would mean diminished freight for the America-Africa lines. In the same way the making of low rates by a railroad to enable a manufacturing plant to market its produce and so "keep it in business," may often be, in the last analysis, competition of this sort. The persons operating the plant would doubtless, in any case, be engaged in *some* business, but the

alternative kind of production might not provide traffic for the particular railroad in question.[1]

§ 4

Competition of Locations

The fourth kind of competition is competition of locations. It is, by itself, perhaps less effective in protecting the public against monopoly rates than any of the other three kinds of competition, and certainly less effective than either of the first two kinds. To illus-

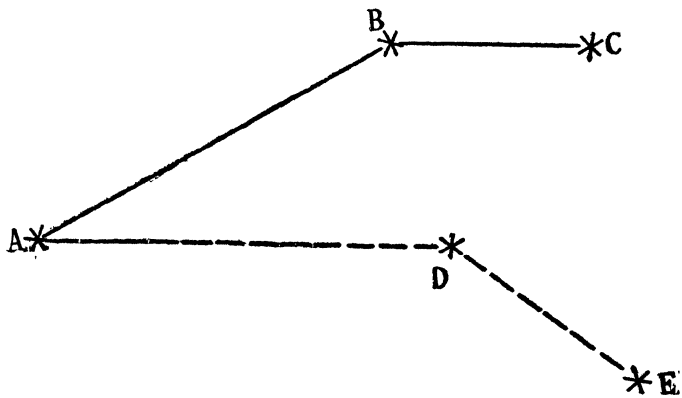


FIGURE 6

trate competition of locations, assume two railroad lines leading into a common terminal city, *A*, the one coming from *C* through *B*, and the other from *E* through *D*. (See figure 6.) Let us suppose that *B* is favorably located for iron and steel production, being in the center

[1] It is not improbable that railroads sometimes make rates to maintain traffic in a given kind of goods over their lines, when the nearest alternative to the persons producing those goods would be the production of other goods for shipment over the same railroad. That this is the nearest alternative may not be realized by the traffic officials of the railroad.

of a coal-producing district, and being able to get iron ore from *C*. The market is largely in and about *A*. The point *D* is no less favorably located for iron and steel manufacture, there being coal about *D* and iron ore about *E*. Iron and steel manufacturers will locate at *D* in preference to locating at *B*, provided they have better opportunity at *D*, because of low transportation rates, to reach the market *A* and secure a satisfactory profit. In general, the original and continued location of an industry in any center of production depends, in part, upon the transportation rates it can get, and particularly upon the rates made to markets where competitors from other producing centers must be met. High rates to points on the same line, where the competition from other sources of production is not equally to be feared may, if necessary, be shifted to consumers. The industry may, therefore, continue to exist in a given center of production even without low rates into a common market, because of its sale in territory which is less competitive; but it will not be carried on in that center of production to the same extent. In this sense, the rates charged influence the location of the industry, *i.e.* the extent of its location at any producing center. In our assumed case, the rate on the iron and steel products from *D* to *A* must be low enough, along with the rate on iron ore from *E* to *D*, and, perhaps, on other needed supplies, machinery, and food for workers, from both *A* and *E* into *D*, so that conditions as a whole will favor existence of the industry at *D* as well as at *B*. Otherwise, the line *EDA* may find itself with an unprofitably light traffic.

Yet this kind of competition is likely to be relatively unimportant in its effect on rates. If the manufacturers

at *D* have natural advantages over those at *B*, are nearer, for example, to the market and to a source of iron ore, the line serving *D* can charge considerably higher rates in proportion to distance, or perhaps rates absolutely higher, than the line serving *B*, and still keep the manufacturing industry in its territory. If, therefore, a railroad has, throughout any part of its territory, no competition to meet but the competition of locations, it is pretty certain that it can make some of its rates high, even rates to a common market, without corresponding loss of traffic. The loss would fall upon the owners of favorably situated land. Thus, to take another example, high rates on wheat, if the wheat is produced on exceptionally good land, or high rates compared to distance, if it is produced near a market, will simply reduce the profits of agricultural land owners, but will not cause them to abandon their fields, though they may, in consequence, cultivate not so intensively.

Competition of locations has existed in the past, and probably in some degree still exists, in the transportation of lumber from Minneapolis, Milwaukee, Chicago, Winona, La Crosse, Eau Claire, and other points in northern Michigan and along the Mississippi River, to Missouri River points, *e.g.* Kansas City, Omaha, Sioux City, etc., as consuming centers.[1] Many of these Missouri River cities were common markets served by more than one railroad. Each railroad desired that such a common market or markets should be supplied most largely from lumber production along its own lines. Rates made by any one such road, unduly high in relation to rates made by its rivals serving other centers of lumber production, meant that the

[1] Interstate Commerce Commission Reports, Vol. V, pp. 264–298.

production of lumber on its line would decrease or cease. Producers would prefer to engage in the business at a point where rates were not so high. Until an agreement was reached by the various roads, in 1884, fixing the relation of rates to be charged from various lumber centers, there was a considerable amount of keen competition among the railroads concerned. Where the rates of different transportation companies are so adjusted, each to each, reduction of the rates of one, by order of a government regulating commission, may indirectly force reduction of the rates of others.

Where the competition is a competition of directions or a competition of business locations, as well as where it is a competition of routes, it may sometimes be not undesirable that some goods should be carried over a longer instead of all being carried over a shorter route. For the longer route may sometimes have enough more intermediate traffic so that it can afford to take the longer distance traffic for lower rates than a shorter route can afford.[1]

§ 5

Competition against Potential Local Self-sufficiency

Besides competing with each other, transportation companies may be said to compete, also, in a sense, with local self-sufficiency. Especially when distances are great, reasonably low rates per mile are necessary, in order that different districts should specialize in different lines of activity and exchange their various products with each other. High transportation rates compel, in each district, a greater degree of self-sufficiency. Low rates promote commerce. To some extent,

[1] Cf. § 2 of this Chapter (II of Part III).

transportation companies doubtless bid for the business of transporting goods over long distances, thus taking part in the competition of shippers with local producers in the territory to which the goods are sent.

To illustrate, suppose two sections of the country, *A* and *B*, 1000 miles apart but joined by the railroad *AB*. (See figure 7.) The general level of prosperity

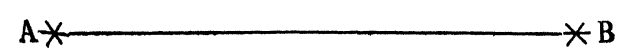


FIGURE 7

in other industries at *A* may be such that no one will mine coal there (of which there are deposits) for less than $3 a ton. In *B*, on the other hand, conditions are such that coal cannot be produced and sold locally for less than $5 a ton and yield as good a return on labor and investment as other local industries. Unless the railroad *AB* makes a rate of $2 a ton or less for carrying coal 1000 miles, *B* will produce its own coal, *A* will probably engage more largely in the production of goods for local use, and the railroad *AB* will not get the coal traffic.

Such competition with local self-sufficiency has been of recent importance in Indiana. In the northern part of that state, many wagon roads have been in process of construction. In the building of these roads, there has frequently been the alternative of using gravel from gravel pits within a few miles of the roads to be made, or crushed stone from various quarries near Chicago, Toledo, and Milwaukee. The railroads have made low rates on the crushed stone,[1] in order, by enabling quarry owners to ship their product, to get traffic which otherwise could not have been had.

[1] McPherson, *Railroad Freight Rates*, p. 142.

§ 6

Two Senses of "What the Traffic Will Bear"

The classic and usual statement with regard to rates independently made by railroads, *i.e.* made without direction or interference from government, is that these rates are made on the basis of "what the traffic will bear."[1] This statement, properly understood, is correct, but its meaning requires some explanation. To say that a railroad leading from the Pennsylvania coal fields to New York City will charge, on coal shipped to New York, what the traffic will bear, does not mean that if higher rates are charged, the railroad will not get any traffic at all. Neither does it mean that at lower rates the railroad would not get more traffic. It means, simply, that the rates charged, when there is no legal regulation and when the interests of the railroad are chiefly or solely considered, will always be the rates yielding the largest net returns on capital invested.[2] Higher rates will so decrease traffic that even the larger return per unit business will be a smaller net return on capital. Lower rates will usually increase traffic, but will not increase it enough to compensate for the smaller return per unit business and the larger expense of carrying more goods. On any special kind or class of traffic, therefore, the rates charged by a given railroad are those yielding it the greatest profit; or, in this sense of the expression, the rates charged are what the traffic will bear.

But though monopolistic as well as competing transpor-

[1] Hadley, *Railroad Transportation*, New York (Putnam), 1885, p. 111.

[2] Far-sighted management may of course consider the future as well as the present.

tation companies base their rates on what the traffic will bear, the conditions determining monopolistic rates are markedly different from those fixing competitive rates. The rates which monopolized traffic will bear are usually higher than the rates which competitive traffic will bear. A transportation company having a monopoly is concerned only with the effect of its rates on the total volume of traffic within its territory, for its own traffic is synonymous with this total traffic. Its only fear is that its rates may be so high as to destroy transportation business. Such a company's rates need only be *what the traffic will bear without being destroyed* in whole or in part.

A transportation company having competitors, however, is interested not only in the effect its rates may have on the total transportation business of the territory it serves, but also, and usually to a much greater extent, in the effect its rates may have on its own business compared with that of its rivals. A slight change in its rates will probably make very little difference in the total amount of goods carried in the given territory, even if its rivals make exactly similar changes. But a slight change in its rates, if its rivals do not make similar changes, will probably affect very greatly the amount of business done by the particular company making the change. A slightly higher rate will result in diverting much or most of its business to its rivals. A slightly lower rate will result in its getting business away from them. We may say, therefore, that the rates charged by a transportation company subject to competition will be *what the traffic will bear without being diverted.*

What the traffic will bear without being destroyed, is generally more than what the traffic will bear without

being diverted. Therefore, monopoly rates are generally higher in proportion to distance or to service rendered, than competitive rates.[1] It is commonly deemed essential to regulate monopoly rates by government for the protection of the general public and for the furtherance of commerce. Unregulated monopoly rates, though they will not be made, with intention, so high as to decrease net profits, may, nevertheless, be made so high that the volume of commerce becomes smaller than, for the greatest national wealth, it ought to be. A monopolistic transportation company can well afford to charge rates, for carrying a given kind of goods between two points, 20 per cent. above a competitive level, if its doing so makes its traffic less than it otherwise would be by only 10 per cent. Yet the monopoly rates, in thus making traffic less, even by but 10 per cent., would be preventing commerce which ought, for the general welfare, to take place.

§ 7

Summary

Competition of transportation companies with each other we have seen to be of four kinds: competition of different companies over the same route, competition of routes, competition of directions, and competition of locations. In addition, a transportation company may be said to compete, in a sense, with potential local self-sufficiency. Competition of different companies over the same route applies particularly to competition on open

[1] Cf. Carver, *The Distribution of Wealth*, New York (Macmillan), 1904, p. 48. See also article by the present writer in the *Quarterly Journal of Economics*, August, 1908, entitled Competitive and Monopolistic Price Making.

waterways. In the case of railroads, the right of way of one company is generally used only by that company. Competition of routes applies both to railways and to waterways. The other kinds of competition are of more importance in relation to railways, though not inconceivable in the case of water transportation.

When two or more routes join two given points, the usual rule is that transportation over the shortest or the most level route is the most economical, although it does not necessarily follow that the beneficial stimulus of competition and its protection of the public against monopoly should be sacrificed to enforce the carriage of goods by the shortest available line. On the other hand, there are cases where a longer line is a more economical one for the carriage of goods between two given points, than a shorter one. In the first place, the traffic may be in excess of the carrying capacity of the more direct line, and it may be better to use the longer line, even though the profit is small, than to invest additional capital in railroad plant. In the second place, it may be preferable to build a roundabout rather than a direct line (or than more tracks on a direct line already built) to carry traffic unprovided for between two points if the roundabout line taps enough more intermediate traffic than the direct line (or than the new trackage on the direct line could add), so that the longer distance traffic, having to pay less of the general expenses and profits, can be carried by the roundabout line more cheaply. In the third place, if facilities between two points are in excess of traffic, and one line has to be abandoned, it may be preferable to abandon a shorter line rather than a longer, provided the longer line has much more of intermediate traffic which helps

it to be profitable and enables it to carry goods between the two given points for a relatively low rate.

Competition of directions exists when each of two (or more) lines is compelled to make rates from a given center of production, based on the rates made by a rival leading in a different direction and to a different market. That this competition may be effective, there must be other conditions — in our illustrations other transportation lines — influencing prices in both markets or in the source of production and at least one of the markets.

Competition of locations exists when transportation lines endeavor to make conditions favorable for various industries, in territories which they serve, by reasonable rates on raw materials, finished products, etc., in order that the industries may develop along their lines instead of elsewhere. These last two kinds of competition have doubtless some importance, but are less effective than the first and second kinds.

Monopoly rates are usually higher than competitive rates, because the former are based on what traffic will bear without being destroyed, while the latter are based on what traffic will bear without being diverted; and because a rise in a transportation company's rates which would have almost no effect in decreasing the total amount of traffic would, if the company has competitors, cause most of its business to be diverted to them. Unregulated monopoly rates may prevent commerce which is economically desirable.

CHAPTER III

TRANSPORTATION MONOPOLY

§ 1

Monopoly of Rail Transportation

RAILROADS are usually, if not always, partial monopolies. However much the kinds of competition we have described may affect rates on traffic to and from large competitive centers, there is on nearly every railroad intermediate traffic not correspondingly subject to competitive influence.

Even as to traffic between competitive points, competition has often been checked by some form of rate agreement among the rival railroad companies. Experience early showed that there was sometimes great temptation for one or more of the companies to depart from the agreed rates, not unusually by secret arrangement with a favored shipper or shippers, in order to get greater traffic at the expense of the other parties to the agreement. Hence various pooling devices were adopted. These pooling devices involved [1] either a division of the business in some definite proportions among the roads concerned, or a division of the earnings from the business. When the latter plan was determined upon, each road was entitled to carry all the freight it could get, but must

[1] See Hadley, *Railroad Transportation*, New York (Putnam), 1885, p. 74; or Johnson, *American Railway Transportation*, 2d revised edition, New York (Appleton), 1909, pp. 224, 225.

divide any surplus profits so made, with the other parties to the pool. To enforce this provision it was frequently required of each company that it keep a considerable sum on deposit in a common treasury, this sum to be forfeited in case of violation of agreement.[1]

The Interstate Commerce Act of 1887 made pooling by railroads illegal, and the kinds of arrangement above described had to be dropped. For a time the railroads of the United States attempted to make and enforce rate agreements by means of their traffic associations, even though pooling was forbidden. The Joint Traffic Association of 1896 made departure from its recommended rates punishable by fines. But in the meanwhile the Sherman Anti-trust Act had been passed in 1890, and this act was so interpreted by the Supreme Court in the Trans-Missouri Freight Association case (1897) [2] and in the Joint Traffic Association case (1898) [3] as to forbid any agreement for the maintenance of rates. The same law was interpreted by the Supreme Court in the Northern Securities case,[4] in 1904, to forbid the holding of the stock of two potentially competing roads by a holding company. And in 1912 this tribunal, in a case involving the possession of stock by the Union Pacific in the Southern Pacific Railroad,[5] decided that it was illegal for any railroad company to hold a controlling interest (even less than a majority of stock, if substantial control was thus secured) in what might otherwise be a competing railroad. By the terms of the new Clayton Act,[6] interholding of stock and the holding of stock by so-called "holding" companies is prohibited,

[1] Johnson, *American Railway Transportation*, p. 240.
[2] 166 U. S., 290. [3] 171 U. S., 505. [4] 193 U. S., 197.
[5] 226 U. S., 61. [6] October, 1914.

where the effect may be a substantial lessening of competition. But it is doubtful whether this prohibition really adds much to the Anti-trust Law of 1890 as that law has been interpreted by the Supreme Court. Representatives of different systems of course meet in the conferences of the various traffic associations to discuss traffic conditions, and these meetings bring about informal understandings regarding rates.[1] But any formal agreement to maintain rates is illegal.

It can hardly be said that complete monopoly is inevitable in railway transportation, on the ground that competition is necessarily ruinous. Competition is not necessarily ruinous. To begin with, as we have already seen, there is on almost every railroad intermediate traffic for which there is no competition. Furthermore, even if all traffic were strictly competitive, competition would not be likely to reduce average profits below a fair return on capital, unless transportation facilities were in excess of traffic requirements. When the traffic available at reasonable rates taxes the plants of all the railroads between any two points, no one of the roads needs to reduce its rates to an unprofitable level even if its rivals choose to reduce theirs. For, by hypothesis, its rivals cannot carry all the traffic, and there will still be business for the non-reducing road. Nor can we assume that the reducing companies will care to enlarge their plants so as to carry larger traffic, unless the rates which can be charged are profitable. When additions to plant are made, at least if they are made by companies already in the field rather than by the building of rival roads, these additions may be gradual and not greater than gradually increasing

[1] Johnson, *American Railway Transportation*, p. 248.

business requires. Additional and larger cars, additional switches to permit more frequent train service, perhaps an additional track where traffic is most dense, will not of necessity so alter the relation between facilities and requirements as to bring about cutthroat competition.

If, however, a new railroad is constructed when existing roads are adequate, or if temporary decline of business, as during an industrial depression or during a dull season, makes facilities, for the time being, in excess of traffic needs, unchecked competition may reduce rates below a profitable level. Each road will take traffic which yields little towards general expenses and fixed charges, rather than not get such traffic. Hoping to secure at the expense of their rivals, by charging very low rates, the large amount of traffic necessary to make such rates cover general and other expenses, the managers of each road may succeed only in reducing their road to bankruptcy.[1] For if every other road concerned reduces rates in the same degree, the reductions by the one road will not probably much increase its business so as to make the low rates profitable. Nevertheless, the excessive rate reductions result, in large part, from the existence of more transportation facilities than can be fully utilized. They are not the invariable and inevitable consequences of all railroad competition.

It has often been argued that such cutthroat competition, and the discrimination in favor of competitive traffic to which it leads, can be most effectively prevented by removing the prohibition against rate agreements, even, perhaps, making them legally enforcible, and by giving legal recognition to pooling.[2] Such a

[1] Cf. Hadley, *Railroad Transportation*, pp. 70–74.

[2] Cf. Chapter IV (of Part III), § 2.

change in governmental policy might not be unwise — would, in fact, be highly desirable — if all permitted agreements were required to receive the sanction of the Interstate Commerce Commission. But it must be remembered, first, that the era of speculative railroad building in the United States has probably passed; and second, that the Elkins Law (of 1903), by prohibiting departures from published rates, and the Interstate Commerce Law (as revised in 1906), by insisting that no rate changes shall be made without 30 days' notice, have operated to prevent the old-time competition with its accompaniment of demoralized rates. Hence, the importance of permitting agreements is less than formerly, though there are probably, still, occasions when recognized agreements would be beneficial.

So far as there is monopoly of rail transportation, from any cause, the American public and its trade interests are protected by the rate-regulating power of the Interstate Commerce Commission and the various state commissions. By the amendments of 1906 and 1910 to the Interstate Commerce Law, the Interstate Commerce Commission was given the power to fix maximum charges for any (interstate) traffic after investigation, and to suspend proposed rate advances for a total period not to exceed 10 months,[1] pending examination as to the justification of such advances.

§ 2

Agreements between Navigation Companies

Transportation on natural waterways, particularly on the ocean, is, it would appear, less likely to be con-

[1] More precisely 120 days plus, if necessary, a further period of 6 months.

trolled by monopoly, is more subject at all terminals (or ports) to competition, than is transportation by rail. The principal reason for this difference is the fact that the way or route costs nothing and is open to all companies on equal terms, while, in the case of railways, the way or route is expensive and can be used only by the company which owns it. Railway traffic between two points is often subject to monopoly control because there is, between those points, only traffic enough to justify a single line. Another company, choosing to compete for this traffic, would have to construct an entire new roadway between the points in question. The investment of the second company might have to be as great as that of the first, in order for it to compete at all. Its investment would almost certainly be a considerable fraction of that of the first. So large an addition to the total railway plant connecting two places would be likely to mean no adequate return on the new capital, and it might mean, since general expenses run on even when traffic is small, no return whatever. Under these circumstances a new line would seldom be constructed. There would be no competition. There would only be one route or way. One company would own it and no other could use it. The owning company would have the situation entirely in its own hands and could charge what it desired, subject only to legal limitations and the less direct kinds of competition.[1]

In the case of water transportation, however, the situation is different. In order for a competition to be started against a company already engaged in carrying goods between two points, it is not necessary that another company shall be found, willing and able to

[1] See previous Chapter (II of Part III), §§ 3, 4, 5.

provide capital enough for the construction of perhaps hundreds of miles of roadbed and track, or willing and able to duplicate or nearly duplicate the plant of its already present rival. Though the earlier company may have a fleet of a hundred vessels, yet if the new company can build one or two vessels, it is at once in a position to compete for whatever part of the trade it can handle. In a sense, a new company can compete by building for this particular trade a fraction of a vessel, that is, it can build a vessel to engage partly in other trade and partly in this particular competitive trade. A tramp vessel, going into all oceans, now here and now there, and seeking traffic in cargo lots, may be built and turned, in part, to the trade previously monopolized. Whenever the rates of the regular-line steamers, those sailing on schedule, exceed the charter rate for tramp steamers, large shippers are likely to patronize the tramp vessels.[1] Even small shippers, who cannot alone accumulate sufficient cargoes to justify the chartering of vessels, are enabled to utilize tramp vessels through the intermediation of charter brokers who accumulate the cargoes of numbers of merchants and who charter vessels to carry these cargoes.[2]

Nevertheless, traffic agreements and other devices to maintain monopoly or partial monopoly are common, and appear to be not altogether ineffective, in water transportation. "Practically all the well-known lines connecting North Atlantic American ports with those of the United Kingdom, North Europe, and the Mediter-

[1] Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, in Proceedings of the Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations, Vol. IV, 1914, p. 299.

[2] *Ibid.*

ranean, have been parties to numerous freight agreements covering, in one way or another, nearly every sphere of the American-European trade." [1] It appears that "over 40 regular trans-Atlantic lines have been parties in their respective trades to at least 20 agreements involving the freight traffic, and that the important lines have been members of at least four main freight conferences." [2]

In some instances the traffic is indirectly apportioned by an allotment of the ports of sailing. Thus, the Hamburg-American and the North German Lloyd companies have had an agreement by which Hamburg is reserved for the former and Bremen for the latter as regards sailings from all American ports north of Savannah.[3] In the American-Asiatic trade not only have there been agreements as to rates both eastward and westward, but there have also been arrangements to the effect that the net freights earned should be pooled.[4] Sometimes, also, there has been an agreed limit to the number of sailings to be made by each of several lines, and occasionally there has been a limitation placed upon the amount of freight which some line or lines may carry.[5]

Control of transportation by so-called conference lines is furthered by the deferred rebate system. Under this system it is arranged that shippers who agree to use only the vessels of the conference lines in a given trade or

[1] Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, in Proceedings of the Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations, Vol. IV, 1914, p. 59. This report, referred to here and in the following pages, was made just before the outbreak of the present war, which has, as is well known, tended to disorganize conditions of ocean commerce, but not, of course, by rate *reductions*. Agreements are not now necessary even to keep rates far above their normal level. Some lines which were parties to agreements are not, at present, carrying on business.

[2] *Ibid.*

[3] *Ibid.*, p. 71.

[4] *Ibid.*, p. 117.

[5] *Ibid.*, p. 285.

trades, shall receive a rebate of some 5 or 10 per cent. on their freight bills, which rebate is payable to them perhaps six months after the end of the period for which it is computed. Any shipper who, at any time before the period of deferment has expired, ships goods by other than the conference lines, loses the benefit of the rebate.[1] The deferred rebate system is applied, for example, in the westbound trade from the Far East through the Suez canal to the United States [2] and in the trade between the United States and South America.[3]

It is sometimes claimed that this system is advantageous to shippers, on the ground that, by guaranteeing large and regular business to the favored navigation companies, it enables them to give efficient, regular, and frequent service.[4] But that the system is unnecessary as a means of securing good and regular service seems to be indicated by the fact that many conferences do not employ it.[5] And it is obvious that such a system may be, as it in fact has been, so used as to make effective competition by outside lines very difficult and at times impossible, and thus to make shippers absolutely dependent upon the conference lines.[6] For these lines, having generally a considerable number of vessels among them, can so arrange the order of sailings for the different lines as to give a frequent service. An independent line, endeavoring to compete with the others, cannot usually give, alone, an equally frequent service. Many shippers will therefore find themselves compelled to patronize one or more of the conference lines a part of the time [7] even though the conference rates are higher, and may

[1] *Ibid.*, p. 287.
[2] *Ibid.*, p. 118.
[3] *Ibid.*, p. 161.
[4] *Ibid.*, pp. 161, 162.
[5] *Ibid.*, p. 307.
[6] *Ibid.*, pp. 163–165.
[7] *Ibid.*, p. 165.

conclude to patronize these lines all the time and so receive the deferred rebates. Shippers may also fear that if they patronize a competing line which cannot alone give them all the sailings required, the other lines, on which they are in part dependent, will refuse absolutely to carry any of their goods. An illustration is afforded by the experience of the Lloyd Braziliero line, an independent line operating between Brazil and the United States. This line, though charging rates of from 26 to 32 cents per bag on coffee as compared to conference rates of 45 to 50 cents, was able to carry the coffee of but one important shipper and only a part of that.[1] This company, Arbuckle Bros., was refused the service of the conference lines and has had to charter vessels for a large part of its shipments.[2] It now appears, however, that such refusal to serve shippers may constitute restraint of trade and be illegal.[3]

It can hardly be said that business obtained by navigation companies in this way is fairly earned. Business so obtained is not the reward of superior efficiency shown in better service or lower rates. It is rather the result of combined efforts to shut out possible competition; it is the result of what is, in effect, a conspiracy against freedom of commerce and against the general well-being.

Another method of preventing long-continued competition is by the use of so-called fighting ships, *i.e.* by

[1] Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, in Proceedings of the Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations, Vol. IV, 1914, pp. 165, 166.

[2] *Ibid.*, p. 167.

[3] See *United States* v. *Prince Line, Limited, et al.*, 220 Fed. Rep., 230, in which the court granted an injunction against refusal to carry for any shipper at regular rates.

collective competition against a single outside line. The conference lines buy or set aside certain ships for this purpose. These vessels underbid the rates of the outside line even though to do so they must carry at a loss, and this loss is borne jointly by all the conference lines.[1] The would-be competitor, however efficient its service and however low its rates, may thus be driven out of the trade. The conference lines maintain their monopoly, not by superior service but by making rival service impossible.

The assumption has been frequently made, in the past, that water transportation is naturally competitive and so needs little or no regulation. There has been, until recently, comparatively little attempt to investigate combinations and agreements among water carriers, or to interfere with them by means of prosecutions under the Anti-trust Law. Nevertheless, it would appear that the Anti-trust Law applies to such combinations and agreements no less than to similar arrangements between railroads. A combination of shipowners, which fixes rates of transportation, and which discriminates against shippers using other lines, so maintaining or endeavoring to maintain a monopoly, has been declared to be illegal.[2] A combination or agreement of water carriers for the control of transportation to and from the United States is unlawful and void regardless of where it is made or where it is to be performed or by what vessels it is to be carried out.[3] Furthermore, the

[1] *Ibid.*, p. 46 and pp. 289, 290.

[2] *Thomsen et al.* v. *Union Castle Mail S. S. Co. et al.*, 92 C. C. A., 315.

[3] *United States* v. *Hamburg-Amerikanische Packet-Fahrt-Actien-Gesellschaft et al.*, 200 Fed. Rep., 806.

The Federal government recently brought suit, under the Sherman Law, against the steamship lines of the North Atlantic Conference. The government alleged that there was unlawful combination for the purpose of apportioning

Interstate Commerce Law applies not only to railroad rates but also to rates charged for transportation "partly by railroad and partly by water when both are used under a common control, management, or arrangement for a continuous carriage or shipment," though this jurisdiction does not extend to lines operating between the United States and a non-adjacent foreign country, and the Interstate Commerce Commission is empowered, by the amendment of 1910, to establish through routes, joint classifications, and joint rates and to prescribe the division of such rates among connecting carriers, not only

traffic and fixing rates and that there was a use of "fighting ships" for breaking down competition. An injunction was asked for, prohibiting the entrance or clearance at any American port, of any ship belonging to any line in the conference. The court granted an injunction against the use of "fighting ships" but refused to regard the conference arrangements as otherwise illegal, contending that the combination was a necessary means of preventing cutthroat competition ending in monopoly of the strongest or in complete consolidation, and that, therefore, the combination did not *unreasonably* interfere with trade. See *United States* v. *Hamburg-American S. S. Line et al.*, 216 Fed. Rep., 971. This decision was unsatisfactory to the government, and the case was immediately appealed to the Supreme Court. See *New York World*, Oct. 14, 1914. The comment may perhaps be fairly made, on this decision of a district court, that to permit rate agreements, in part because of the fear of complete consolidation, implies the belief that complete consolidation cannot itself be prevented. In any case, if rate agreements of some kind are believed to be reasonable and a necessary means of avoiding cutthroat competition, it may plausibly be contended that the agreed rates should be subject to the supervision of a government regulating body.

A more recent decision of the same district court dismisses the government's Sherman Anti-trust Act suit against the Prince line and others comprising the so-called Brazilian Steamship Conference, and against lines comprising the Far Eastern Steamship Conference. (See 220 Fed. Rep., 230.) Curiously enough, the court found nothing inconsistent with law either in the rate agreements made or in the use of deferred rebates. It is difficult to believe that the Supreme Court will take a like position. Its interpretation of the Sherman law "with reason" seems never to have led it so far as this in the defense of monopoly. On the contrary, it has shown itself, by a long line of decisions, hostile to combinations having monopoly power. It should be said, however, that the district court granted an injunction against refusal to serve any shipper at the regular rates, and intimated that an injunction would have been granted against the use of "fighting ships," had evidence of such use been presented.

when all are rail carriers but also when one is a carrier by water, provided that such through routes, joint classifications, and joint rates have not been voluntarily established. Finally, the Panama Canal Act of 1912 authorizes the Interstate Commerce Commission to establish physical connection between rail and water lines, when reasonably practicable and justifiable, by directing either line or both to construct necessary tracks; "to establish through routes and maximum joint rates over such rail and water lines, and to determine all the terms and conditions under which such lines shall be operated in the handling of the traffic embraced"; and "to establish maximum proportional rates by rail to and from the ports to which the traffic is brought, or from which it is taken by the water carrier, and to determine to what traffic and in connection with what vessels and upon what terms and conditions such rates will apply." There is, however, no law regulating either the rates charged or the competitive practices followed when the transportation is wholly by water. Specific prohibition of the use of "fighting ships" and of deferred rebates, and prohibition of any unreasonable discrimination would be desirable.[1] Effective regulation would probably involve, also, an extension of the jurisdiction of the Interstate Commerce Commission to include transportation wholly by water.

§ 3

Other Causes of Monopoly in Water Transportation

Monopoly control of commerce has also been furthered by "exclusive" and, though to a less extent, by "prefer-

[1] Cf. Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, Vol. IV, p. 421.

ential" agreements between railway and steamship companies. These agreements provide that the railroad company and the steamship line involved shall each furnish freight to the other and that, so far as possible, all through freight from either line shall be delivered to the other line for carriage to destination.[1] Formerly, many of the railroads made contracts with steamship lines, which bound the railroads to ship goods to certain ports, on through bills of lading, only by the steamship lines with which the contracts were made, regardless of the preferences of shippers. These were "exclusive" contracts. But the Interstate Commerce Commission, acting under its general authority to forbid discriminating rates and practices, has recently declared this kind of arrangement to be an attempt to compel shippers to employ a particular water line, and an illegal discrimination against shippers.[2] It was declared to be illegal for a railroad to give the use of its facilities exclusively to one steamship line, unless the railroad would undertake to deliver to other ship lines at another wharf for the same charge. The railroad may have a preferred steamship connection so long as such preference does not involve any discrimination against traffic routed via the railroad over a non-preferred boat line. "Exclusive" agreements have, therefore, largely given place to "preferential" ones.[3]

Control of wharf space by conference lines, or railroads, or both, is sometimes a barrier to the freest commerce

[1] Cf. Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, Vol. IV, p. 292.

[2] See Interstate Commerce Commission Reports, XXIII, pp. 417–428.

[3] Huebner, Report on *Steamship Agreements and Affiliations*, p. 240.

via a given port. Water frontage is frequently owned to a large extent by railroad interests. Thus, the Lake front in Chicago, opposite the business section, is occupied by the Illinois Central Railroad; and important parts of the water front in Buffalo, N. Y., Cleveland, O., Norfolk, Va., Mobile, Ala., and Oakland, Cal., are controlled by railroads.[1] In order that a port should fulfill well its commercial functions, it is important that rail and water lines should come close together, and if they are to do so, railroads must usually have some frontage; but it is claimed that they have more than they need for this purpose and that their holdings are a barrier in the way of water transportation which might else be profitable. "In many cases they hold large tracts of undeveloped frontage which they refuse to sell or lease, and which are needed for the construction of public docks."[2] Where railroads thus maintain monopoly of traffic which would otherwise be shared with competing navigation companies, such monopoly must be assumed to be inimical to the development of commerce. At Pittsburgh, St. Louis, and other river points, the railroads hold miles of frontage beyond what is required for their own terminal facilities, which might otherwise, it is urged, be acquired and used by water lines.[3] At some ocean ports, the combined holdings of railroad and large steamship companies have been such that it has been difficult for tramp vessels or independent boat lines to obtain landing privileges.[4] Where, as in the case of the port of New

[1] Report of the Commissioner of Corporations on *Transportation by Water in the United States*, Part I, p. 155.

[2] Final Report of the National Waterways Commission, 1912, p. 21.

[3] Report of the Commissioner of Corporations on *Transportation by Water in the United States*, Part I, 1909, p. 155.

[4] *Ibid.*, p. 156.

Orleans,[1] there is extensive public ownership and public control of wharves, it is possible to assure wharf space on fair terms to all vessels. Attention has elsewhere[2] been called to the British system of public harbor trusts and its advantage for harbor management. Where a harbor is controlled by such a trust, it is easily possible to avoid exclusion of any vessels.

Another condition that has tended towards transportation monopoly has been the large control of water carriers themselves, by American railroads.[3] To a very considerable extent there has been railroad ownership of vessels engaged in the Atlantic Coast trade, the Gulf trade, and the Great Lakes trade, vessels which might otherwise be competitors of railroads for the traffic between American ports. In very many cases, the only regular line of vessels carrying freight between two or more ports has been controlled by a railroad company or by a shipping consolidation[4] (frequently a holding company). It is now provided, however, by the Panama Canal Act of 1912, that no railroad or other common carrier subject to the Interstate Commerce Act shall own, lease, operate, control, or have any interest whatsoever (by stock ownership, holding company, stockholders or directors in common, or otherwise), in any common carrier by water, which does or may compete with it. The Interstate Commerce Commission has jurisdiction to decide, in each case, as to the fact of possible competition.

[1] Report of the Commissioner of Corporations on *Transportation by Water in the United States*, Part III, pp. 70–102, gives a full discussion of the organization of this port.

[2] Part II, Chapter VIII, § 5.

[3] Report of the Commissioner of Corporations on *Transportation by Water in the United States*, Part IV, on *Control of Water Carriers by Railroads and Shipping Consolidations*, 1912, Chapters I and II.

[4] *Ibid.*, p. 13.

§ 4

The Function of Government in Relation to Transportation Monopoly

Monopoly in transportation may be reached by a variety of methods and is frequently secured, as we have seen, by methods which do not at all signify superior service or lower rates. However secured and maintained, there is danger that such monopoly will be so used as to decrease commerce and lessen the general welfare. Government should prevent, so far as possible, the attainment of monopoly by unfair practices or by conspiracy, or under any circumstances which make it detrimental to the general welfare; and, where monopoly appears, government should protect commerce against possible extortion. Besides establishing and maintaining an adequate money and banking mechanism, government may be said to have at least two important functions with regard to commerce, a negative and a positive one. The negative function of government is to avoid, itself, interfering with the normal course of trade by tariff restrictions, bounties, navigation acts, or other special privileges. The positive function of government is to prevent interference with trade and diversion of trade out of its natural channels, by monopolistic or discriminating transportation rates. On the other hand, when the principle of rate regulation by government is thoroughly established, care must be taken not to require rates so low as to discourage the investment of capital in needed transportation facilities, since inadequate facilities, no less than high rates, may prevent the fullest profitable development of trade.

Properly to regulate the rates of monopolistic trans-

portation companies is a task of considerable difficulty, yet a task which, through commissions or otherwise, government must apparently perform. What standards of reasonableness should be applied when such regulation is undertaken? Provided transportation facilities, *e.g.* a railroad, are needed for the carriage of goods between certain points, provided the route is wisely chosen and the management reasonably good, the rates allowed should yield enough to pay all expenses, to pay a reasonable profit on the cost of construction, or more nearly, perhaps, what the cost of construction would now [1] be, if the road had to be built again, and to pay, also, a reasonable rent on the land used for right of way and stations.[2] Public regulation must allow reasonable profit to such a company, else investors will prefer to devote their capital to other uses. And unless the profit allowed, above interest on the construction cost, amounts to as great a surplus as the necessary land space would yield in some other use, the application of land to the requirements of transportation will be discouraged. If increased population adds to the returns which the land would yield in some other use, it should ordinarily add to the returns which the same land yields when devoted to the transportation use. These larger returns will usually be yielded without the necessity of rate increases or, in some cases, even though rates fall, since growth of population tends to increase traffic. But to force rate reduction to such a point as to prevent the

[1] If values change, this cost of duplication should be emphasized in so far as it would have influence in purely competitive businesses of large plants. In such a business, the existing prices are dependent largely on past cost of construction, for if that was very great, there will be fewer plants now in operation. But a decrease in the necessary cost of construction is likely to encourage the building of new plants, whose competition will soon influence prices.

[2] Cf. Chapter I (of Part III), § 3.

realization of any gain, on the theory that the gain is unearned, is to discriminate unduly against the owners of land used for the purpose of transportation. It is not intended to argue that increases in the rental value of land should go to private individuals or to corporations rather than to the public. To tax these increases heavily *wherever they occur* may be a desirable economic policy. Where this policy is followed, the owners of any land will be as careful as now to use it in the way that brings the largest gain, since the tax, being based on the natural and situation advantages of the land, will be the same regardless of how these owners choose to use it.[1] But to rule that if the land is used for most purposes, such a gain in value will be allowed to accrue to its owners; while if it is used for one particular purpose, this gain shall go to the public, is to encourage the other uses and discourage the one use.

On the other hand, government is not under obligation so to regulate rates as to protect a transportation company even in the enjoyment of profits only equal to the average in competitive business, when this company has been mismanaged.[2] Companies engaged in strictly competitive business do not enjoy average profits unless managed with average ability. Nor is a railroad between two points, which has been laid out over an unnecessarily devious, and, therefore, a relatively unprofitable, route, entitled to charge, in consequence, higher rates on traffic between those points, so as to make

[1] If the tax were made higher just because the owner chose to make a more profitable use of the land than others had seen the possibility of, the best use of land would be discouraged. Cf. Marshall, *Principles of Economics*, 6th edition, London (Macmillan), 1910, p. 434.

[2] See views of the Interstate Commerce Commission, as set forth in the "Five Per Cent case," Interstate Commerce Commission Reports, Vol. XXXI, pp. 358, 359 (pp. 351–454 for entire case).

as great profits, at the expense of the public, as if it had been wisely located.[1] The same conclusion may of course follow if the route chosen can provide little intermediate traffic, and if a more profitable route, providing more intermediate traffic, was available. In competitive business, owners are obliged to suffer diminution of profits when mistakes are made. Where there is real competition between several railroad companies, the unwisely located line finds itself at a serious disadvantage. Any combination or agreement which should insure to such a line a profit as great as it could have expected if well located would be inimical to public welfare. Of course a railroad built where traffic is light, provided it was built so as to connect, by the best available route, the principal points served, is fairly entitled to charge the high rates necessary to secure a reasonable profit.

Competition stimulates to good management. Public regulation of a business which is, by necessity, a partial monopoly, perhaps may not, at best, stimulate efficiency as much. But unless regulation is so applied as to make profits depend in part on good management, such management is likely to be had to a decreasing degree, rates are likely to be high, and commerce to be retarded. Yet it would not be fair to require, as a condition precedent to allowing reasonable profits, a standard of management far superior to that common in other industries. Reasonably good management should bring reasonably good returns, and exceptional management should bring returns above the average. The Interstate Commerce

[1] Cf. views of the Interstate Commerce Commission, as set forth in the "Five Per Cent case," Interstate Commerce Commission Reports, Vol. XXXI, p. 359.

Commission has said:[1] "A premium must be put upon efficiency in the operation of the American railroad. Rates cannot be increased with each new demand of labor, or because of wasteful, corrupt, or indifferent management. Nor should rates be reduced with each succeeding improvement in method. Society should not take from the wisely managed railroad the benefits which flow from the foresight, skill, and planned coöperation of its working force. We may ruin our railroads by permitting them to impose each new burden of obligation upon the shipper. And we can make no less sure of their economic destruction by taking from them what is theirs by right of efficiency of operation — the elimination of false motion, of unneeded effort, and the conservation of labor and materials. The standard of rates must be so high that the needed carrier which serves its public with honesty and reasonable effort may live. And yet rates should be still so much below the *possible* maximum as to give high and exceptional reward to the especially capable management, the well-coördinated force and plant. This is the ideal, unrealizable perhaps, but it points the way."

In the fixing of rates, the par value of stocks and bonds of a company may be a consideration of importance as indicating original investment. But where stock watering has been attempted, par value has no significance. Market value of securities cannot be regarded as a satisfactory standard for rate fixing, since market value depends mainly on profits, which in turn depend chiefly on rates. Even if the original investment can be ascertained, changes in values, particularly in regard to land,

[1] *Ibid.*, Vol. XX, p. 334 (pp. 307–399 for entire case). Cf. Vol. XXXI, p. 358 (in the "Five Per Cent case," pp. 351–454).

may make this original investment an unsatisfactory measure of present physical value.[1] A physical valuation of transportation plant, such as the Interstate Commerce Commission is now carrying out[2] for railroads of the United States, may provide an important standard by which to judge profits and rates.

§ 5

Summary

In this chapter we have seen that railroads are partial monopolies in that there are almost always intermediate points served by only one line. As to points served by more than one line, we have seen that formal rate agreements and pooling agreements have been common among competing railways, but that such agreements are now illegal. Competition among railways may be ruinous to the competing companies if facilities are in excess of possible business, but is not otherwise necessarily so.

Transportation on the ocean is, by virtue of the fact that a route does not have to be constructed, less sub-

[1] In *Smyth* v. *Ames*, 169 U. S., 466, the Supreme Court has laid down as follows the matters to be considered (see particularly p. 455): "We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And, in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stocks, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property." That the Supreme Court would be inclined, however, to put chief emphasis on a physical valuation, seems to be indicated by its discussion in the recent Minnesota Rate case, 230 U. S., 352.

[2] By an Act of March 1, 1913.

ject to monopoly control than rail transportation. But agreements among water carriers have been common, and the field of competition has been thus considerably limited. Furthermore, various devices, such as deferred rebates and fighting ships, have been adopted to destroy the competition of independent lines. Exclusive arrangements with railways, and control of wharf space by conference lines and by railways, have also served to make independent competition difficult.

Monopolistic rates, like protective tariffs, may serve to interfere with commerce which ought, for the general economic welfare, to take place. As government should itself avoid undue interference with commerce through the establishment of protective tariffs, bounties, navigation acts, or other special favors, so also it should prevent, directly or indirectly, any economically injurious interference with commerce, which private interests might occasion through the charging of monopolistic transportation rates. Yet in thus protecting commerce against the exactions of private monopoly, government regulation must avoid enforcing rates so low that capital will not be forthcoming for transportation requirements. The rates fixed should be such as will yield, with reasonably good management, the average rate of return on capital invested in construction, and a fair return or rent on the land requisite for way and terminals.

CHAPTER IV

Economically Undesirable Rate Discrimination among Places

§ 1

Competition as a Cause of Discrimination among Places

Discrimination in rates, among places, is chiefly due to the existence of effective competition among transportation companies at some places and not at others. Thus, two, three, or more railroads may connect *A* and *C*, while *B* is on the line of only one. (See figure 8.)

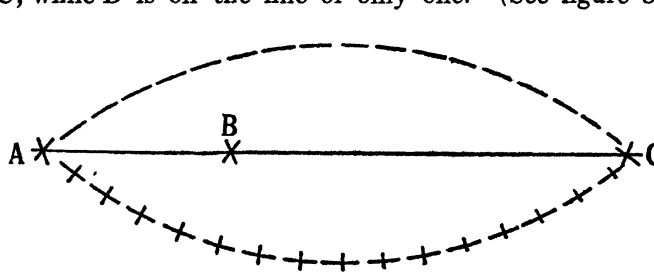


Figure 8

Competition among the several railroads for traffic from *A* to *C* and from *C* to *A* will make rates on this traffic low, while the absence of competition for the shorter distance traffic will make rates from *A* to *B*, *B* to *A*, *B* to *C*, and *C* to *B* comparatively high in proportion to service rendered (or distance the goods are carried).

The competition which introduces this inequality of rates need not be competition of routes. It may also be competition of directions, competition of locations, or even competition with local self-sufficiency.[1] Consider one of our illustrations of competition of directions, in a previous chapter, where we assumed the railroad *AC* (see figure 9) to make a low rate on coal from *A* to

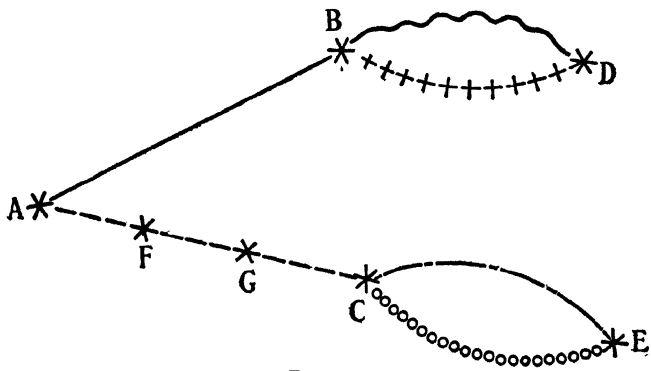


FIGURE 9

C, in order to prevent the coal produced at *A* from being shipped almost entirely over the line *AB*. In this illustration, the railroad *AC* is not compelled by competition of directions to make low rates from *A* to *G*, for *G* cannot secure coal over any other railroad; or from *F* to *G*, or from *F* to *C*, for *F* has not the choice of shipping over another line. These intermediate rates may therefore be appreciably higher, in relation to the distance the intermediate traffic is carried.

In the case of competition of locations, also, all points are not equally benefited. Thus, though the line *EDA* (see figure 10) makes low rates on goods carried from

[1] See Chapter II (of Part III), §§ 1, 3, 4, 5.

D to A, lest certain industries be located entirely at B instead of partly at D, it may not need to make correspondingly low rates from D to F. For in F the producers at D do not feel to the same extent as in A, the competition of their rivals at B. High railroad rates from D to F may be shifted upon the consumers at F, in the prices of the goods carried. The burden of high rates to A, however, must fall upon the producers at D

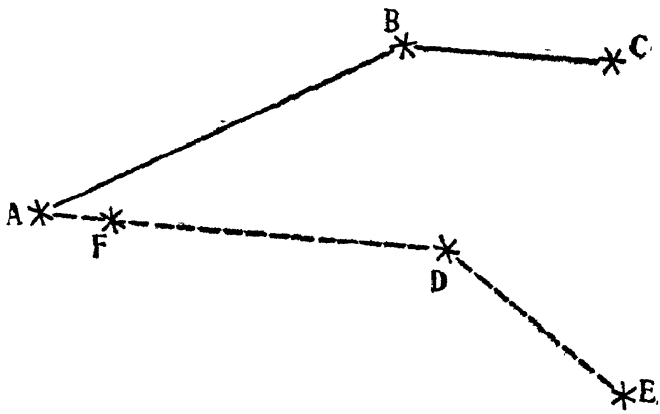


FIGURE 10

and may cause them to abandon the market and, perhaps, the business. In any case, it is likely to decrease the traffic of railroad EDA. Hence, lower rates may be made by the railroad on traffic to A than on traffic to F.

If the competition is with local self-sufficiency, there is a like reason for discrimination. A railroad connecting

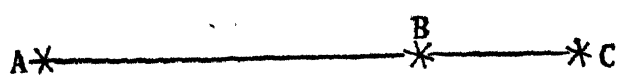


FIGURE 11

A (see figure 11), a center of coal production, with C, where coal could be mined somewhat less advanta-

geously, may make a low rate on coal from *A* to *C*, as the only way to get the traffic. But it will not be under similar compulsion to make an equally low rate from *A* to *B*.

Discrimination between places occurs in water transportation also. At one time the White Star Line carried goods from New York via Liverpool to Australia at rates 30 per cent. lower than the rates charged on the same kinds of goods carried on the same vessels from Liverpool to Australia. This was due to competition for the through business, with the direct lines from the United States.[1]

§ 2

Economic Loss which May Flow from Discrimination among Places

Let us now consider the effects, on all interests concerned, and on general community welfare, of discrimi-

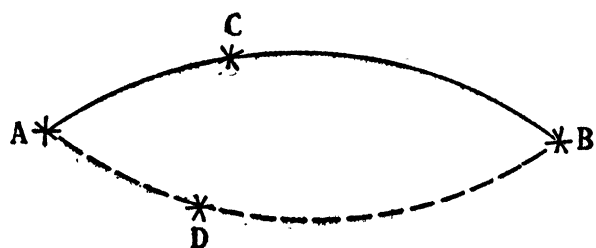


FIGURE 12

nation among places, as it has been very generally practiced by transportation companies. We may begin with place discrimination caused by competition of two

[1] Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, in Proceedings of the Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations, 1914, Vol. IV., p. 106.

or more railroads with each other. Suppose two roads joining the cities *A* and *B* (see figure 12), *C* being a town or city on one of the roads only, and *D* a town or city on the other. Competition makes rates from *A* to *B* lower than from *C* to *B* and lower than from *D* to *B*.

Looking at this discrimination from the standpoint of either road and the constituency it serves, and assuming conditions to be fixed for this road by the policy of the other, the discrimination seems to be entirely justifiable. If *C* complains of injustice in the rates charged, say, from *C* to *B* as compared with the rates from *A* to *B*, the railroad *ACB* has a ready answer. It is compelled to make a low rate from *A* to *B* and *vice versa*, because of the competition of the line *ADB*, or forego all traffic between those points. Yet this traffic pays the terminal expenses involved and the necessary expenses for the production of train mileage. It leaves, also, we must suppose, some small surplus to apply towards the general expenses, if not towards fixed charges or profits. Otherwise, it would not be worth competing for. Had it been supposed that the railroad *ACB* was not to be allowed to seek a share of this traffic, which, in the sense noted, is paying traffic, the railroad might never have been built. It has been built, and, therefore, is able to serve *C* also, only, perhaps, because of the competitive traffic of which it secures a part. Without this traffic it would not even pay to continue business, so, probably, only partially utilizing the plant, unless the traffic to and from *C*, together with other intermediate traffic, could pay high enough charges to cover all general expenses and something over. On the other hand, to charge rates on traffic to and from *C*, and on other intermediate traffic, as low accordingly as on traffic which

is competitive, would probably mean lack of fair profit and, conceivably, even abandonment. The conclusion is drawn, then, that all these parties concerned really benefit by the discrimination. *A* and *B* get low rates. The line *ACB* gets traffic which helps it to meet general expenses and to pay interest and dividends. *C* gets the service of the line *ACB*, which it could not get, or could not get at such low rates, if *ACB* were prevented from securing, even at relatively discriminating rates, the longer distance business.

The above is essentially the argument usually presented to justify discrimination between places. But this argument leaves certain important facts out of account. To begin with, the reason why the traffic from *A* to *B* is carried at low rates is only because there happen to be two lines serving *A* and *B* as compared with one line each serving *C* and *D* respectively, and not necessarily because the cities *A* and *B* are naturally any better located for business than *C* and *D*.[1] When we come to consider the matter of utilization of both roads, we do not find that the discrimination increases it. The low rates from *A* to *B* are not made because the total traffic between those points will decrease if they are not made; they are not due to the fear that the traffic, as a whole, can bear no higher rates without being *destroyed*. On the contrary, each road makes these low rates in the fear that otherwise its traffic will decrease to the profit of the competing road, in the fear that the traffic between *A* and *B* cannot bear higher rates without being *diverted*. As regards the effect of low rates on

[1] Though, of course, the larger populations of *A* and *B*, if those were relatively large cities before the building of the roads, may have been a reason why more than one company sought entrance to them.

total traffic, it is entirely possible that a reduction of rates in favor of *C* would increase traffic to and from *C*, fully as much as reduction between *A* and *B* increases the total traffic from *A* to *B* and *B* to *A*. As far, then, as the matter of complete utilization of existing railroad plants is concerned, there is little if any more reason — perhaps, sometimes, less reason — for reducing the *AB* rates, than for reducing the *AC* and the *CB*, the *AD* and the *DB*, rates. The *AB* rates are reduced only because each road wants its facilities fully utilized, if possible, even at the expense of the other, and not because the reduction is likely so to increase traffic as more fully to utilize the facilities of both. As regards this phase of the economic results, there is no special gain from the *discrimination*, as such, whatever gain might result from an all-around rate reduction. It is true that up to the point of full utilization of plant, railroads are operated under the principle of increasing returns, that up to that point, large traffic is carried proportionally more cheaply than small traffic, and that, therefore, large traffic, bringing this full utilization, is desirable. But it is also true that complete utilization of all existing plant, *i.e.* of both railroads, will probably, in the circumstances under discussion, be no more furthered by low competitive rates than by low non-competitive rates. There is no additional economy in utilization, resulting from discrimination as such.

Since the competition of the two railroads, and the consequent discrimination, favors *A* and *B* at the expense of *C* and *D*, it results that *A* and *B* develop more rapidly than their natural advantages would seem to warrant; while *C* and *D* develop less rapidly, have their development retarded, or are even made to decline

in industry, wealth, and population, by the disadvantages to which they are thus subjected. If no rate differences were made, other than those compelled by differences in actual cost, *i.e.* if the distance principle were, in situations like the one here discussed, consistently applied, then the places naturally favored would be the ones to develop, rather than those favored by the fact — sometimes, in a sense, the accident — of being served by two or more railroads. Discrimination many times deprives cities or districts of the benefits which would result to them from their natural advantages. In so far as it actually does this, and tends to develop industry where the natural advantages of industry are less good, it lessens the wealth-producing power and, consequently, the prosperity, of the country. It prevents the development of industry where it should develop, and encourages its development where it should not. It may not, like a protective tariff, divert effort into relatively unprofitable lines of production; but is more likely to cause those lines of production which would in any case be chosen, to be carried on in relatively disadvantageous localities. Rate discrimination between places resembles protection, to some extent, in that it may benefit some localities of the country at the expense of others.[1]

This discrimination may also bring about undesirable or uneconomical transportation. There may, for instance, be industries for which *C* has as great advantages as *A*, or even greater advantages, the products of which are marketed largely in *B*; yet discrimination in rates causes these industries to be located at *A*. The consequence is that goods have to be carried from *A* to *B*,

[1] Cf. Part II, Chapter V, § 6.

oyer a comparatively long distance, which might be carried from *C* to *B*, a relatively short distance. More labor has to be expended that the community may attain a given result. In this possible consequence, also, discrimination between places resembles the protective tariff. The same objections apply if the discrimination between places is caused by competition of directions or competition of locations. The existing legal limitation and prohibition of discrimination between places tends to raise, in this regard, the plane of competition, and would seem, therefore, to be justified. Section 4 of the Interstate Commerce Law prohibits a greater charge for a shorter distance than for a longer one over the same line in the same direction when the shorter distance is included in the longer, except by permission of the Interstate Commerce Commission; while section 3 prohibits any undue discrimination between places. What is undue discrimination in any specific case, where there is complaint or where investigation is made, is decided by the Commission.

Complete prohibition of discrimination among places (except under special circumstances to be discussed in the next chapter) does away with the economic wastes above discussed and is, in so far, economically desirable. But in some cases its enforcement may involve considerable hardship to the railroads affected. If the rivalry of these railroads to secure the competitive traffic is keen and if this competitive traffic is important, the competing railroads may feel obliged to make *correspondingly* low rates on their *intermediate* traffic — when forbidden to discriminate — instead of venturing to correct the discrimination, in part, by *raising* rates on the *longer distance* traffic. Such a situation might mean

that the general level of rates would be unremunerative, that profits could not be had, perhaps that fixed charges could not be paid. It might be well, therefore, if Congress would legalize rate agreements and pooling, *when consented to and supervised by the Interstate Commerce Commission*, so that cases of this sort could be settled with entire fairness and common sense. But it should not be forgotten that in very many cases the traffic which is not directly competitive is an important part of the whole, that the railroads concerned would not be willing greatly to lower their rates on it, even though compelled not to discriminate, but that they would prefer, each, to risk the loss of some competitive traffic, by maintaining their rates on that traffic. All of them would probably continue to get, therefore, a share of the competitive traffic. In such cases, at least, it is not necessary to legalize pooling in order to enforce equality of treatment without great injury to the railroads. Nor is pooling a necessary measure when traffic is sufficient to tax all the roads. As a matter of actual practice, we do not allow pooling or formal rate agreements, and we do, not altogether unsuccessfully, prohibit rate discrimination.

§ 3

The Uneconomy of Discrimination either in Favor of or against Imports

A special class of discriminations, to which these objections would apply, is that of discriminations by railroads, in connection sometimes with navigation lines, against domestic and in favor of imported goods. In a case brought before the Interstate Commerce Commis-

sion, in 1905–1907,[1] it appeared that there was rate discrimination against domestic plate glass and in favor of the imported product. On the domestic product, in trunk-line territory, third-class rates applied, whereas shipments from foreign producing points via American ports and thence to interior towns and cities were given fourth- and fifth-class, and even lower, rates. It was complained, for example, that plate glass could go from Antwerp, Belgium, to Chicago, by way of Boston and the New York, New Haven and Hartford Railroad, at 40 cents a hundred pounds for the entire distance, or (as assumed by the Interstate Commerce Commission) 30 cents for the share of the railroads, as compared with a rate of 50 cents a hundred pounds on domestic plate glass from Boston to Chicago. Between Antwerp and Chicago, via New Orleans and the Illinois Central Railroad, 5200 miles, the entire rate was 32 cents, or about 22 cents for the rail part of the haul, as compared with 75 cents asserted to be the rate from New Orleans to Chicago on the domestic product. These differences were presumably due to competition, the railroads competing, in connection with the ocean carriers, for the carriage of the foreign glass, which might come by way of any port, but competing apparently much less for the traffic from one point to another within the country, which had a more limited choice of routes.[2]

The effect of such discrimination, in general, whatever its effect might have been in this particular case, must be to discourage home production, and, therefore, to turn industry away from a line which it would, perhaps,

[1] Interstate Commerce Commission Reports, Vol. XIII, pp. 87–102. Cf. an earlier case in Interstate Commerce Commission Reports, Vol. IV, pp. 447–534.

[2] At the time this complaint was brought, the Interstate Commerce Commission did not have its present power to prevent or correct such discriminations.

naturally follow. May not this be as greatly uneconomical as the policy of the protective tariff? If goods can really be produced more cheaply abroad than in the United States, including cost of transportation, it is more profitable for us to buy such goods abroad than to produce them here, but the same conclusion does not follow if home production is made more expensive to consumers because of an artificial barrier raised against the home-produced article.[1]

Let us note, specifically, the influence of such discrimination upon the different interests concerned. The railroads, taken as a whole, have no more to gain from traffic in plate glass, or other goods, produced abroad, than from the same traffic originating on the boundaries of our own country, or even than from traffic originating farther inland, if the rate pays as large a surplus above the incident cost. Each company lowers rates on the imported product only to *divert* traffic from a rival or to keep traffic which otherwise might be diverted to rivals. Taking the roads as a whole, it is not to be assumed that low rates on imported goods increase the quantity of goods they carry, any more than would correspondingly [2] low rates on the same goods produced in the United States.

From the point of view of domestic producers, the discriminating rates are a discouragement. From the point of view of domestic consumers, — in the case

[1] In this particular case, the artificial barrier was a partial offset against tariff protection. We shall deal here, however, with the rate discrimination considered by itself.

[2] By correspondingly low rates is here meant not necessarily rates the same per mile regardless of distance, but rates which, for the same amount of goods carried, would yield the same surplus for general expenses, fixed charges, and profits, above the special additional cost of carrying the goods.

cited, buyers of plate glass, *e.g.* at Chicago, — the important point is that the glass should be procurable at the lowest possible price. They do not care where it comes from so long as price and quality are satisfactory. If the railroads make unduly low rates on the imported product, domestic consumers gain no more than the railroads sacrifice. If American producers, without the discrimination to contend against, could undersell their foreign rivals, in the Chicago market, then the reduction in the rate on the imported goods would cause a decrease of revenues to the railroads, but no gain to consumers until it brought the foreign product below the domestic in price. The railroads must lose, therefore, more than the consumers gain; or, if non-discriminating rates would enable domestic producers to realize a higher price, then the railroads *and* domestic producers must lose more than domestic consumers gain. It cannot be said that the railroads are compensated for their loss by carrying more glass, for, as has been said, it cannot be assumed that the low rates charged will stimulate traffic in imported glass, any more than correspondingly low rates would stimulate traffic in domestic glass. Non-discriminating rates, with exceptions to be presently noted,[1] at least if they can be secured without lessening the stimulus of competition, or without raising average transportation charges, are economically more desirable.[2]

[1] Chapter V (of Part III).

[2] A secondary, though doubtless in practice very slight, result of such artificial stimulus of imports, is the tendency for money to flow abroad, making prices lower here and higher there. As a consequence, we must pay somewhat more for what we buy abroad, while we receive somewhat less for what we sell. In other words, the rate of interchange of our goods for foreign goods is made less favorable. When this is an incidental, as well as a relatively minor, consequence of a trade profitable to us, we need not complain; but it deserves to be mentioned as an additional disadvantage from the stimulating of an uneconomical trade.

It hardly needs to be added that the reverse system of artificially favoring home producers is also uneconomical, whether it takes the form of shutting out foreign goods by arbitrarily high rates, or of subsidizing domestic producers by rates unduly low.[1] Such a policy of discrimination against foreign producers is most likely to be followed — as it is, in fact, followed in Germany[2] — where railways are operated by government, and where, therefore, railway policy becomes a matter of politics and may be turned, purposely, to protectionist ends.

It is also possible to use publicly managed railroads to derive public revenue from the importation of goods not produced within the country, *i.e.* to use them as a means of collecting import duties not intended to be protective. Or railroads can be used, as in Germany,[3] to raise a revenue for government from traffic in general. Obviously such a policy is in danger of being carried too far, of unduly preventing a geographical division of labor which might be profitable, and so of preventing the growth of that fund of national wealth from which all taxes must be drawn.

It is apparent that the relations of different rates to each other are likely to be different when all or nearly all the railroads of a country are under one control, *e.g.* government control as in Germany, than when they are operated by different companies, each anxious to develop its own business regardless of what happens to the rest. In the one case, discrimination between places may be reduced to a minimum, except as protectionist influences

[1] Cf., however, Chapter V (of Part III), § 6.

[2] H. R. Meyer, *Government Regulation of Railway Rates*, New York (Macmillan), 1905, p. 35.

[3] *Ibid.*, pp. 72, 73.

prevail. In the other case, discrimination between places will tend towards a maximum, except as it is prevented by government regulation. Discriminations which, if not effectively prohibited from doing so, a railroad might feel obliged to make in the latter case, would often be discriminations which would not benefit but which would tend to injure the country, and the railroad systems considered all together, and which, therefore, if the same interest controlled all the lines, would not be made. It should be added that somewhat higher rates *in proportion to distance carried*, for short-haul than for long-haul traffic, are not necessarily discriminations. While the train mileage costs increase as distance increases, the terminal expenses do not. If a proper amount to cover terminal expenses is added to a hauling charge made in proportion to distance, the total will be absolutely less but greater in proportion for short distances than for long. It will not, however, on that account be discrimination.

§ 4

The Uneconomy of the "Basing-point" System

It has been argued by some economists[1] that discrimination between places may be economically justifiable for the purpose of concentrating the movement of freight upon "basing points," thence to be redistributed to surrounding towns. Thus, in this view, it might be preferable that freight should be carried from Boston or New York to Montgomery, Ala., in carload or trainload lots and thence distributed by jobbers to neighboring towns in less than carload lots, rather than

[1] For example, H. R. Meyer, *Government Regulation of Railway Rates*, p. 298.

that shipments should go direct from the North to dealers in these other towns and, therefore, all the way in small consignments. The basing-point system of the South tended to the former result by making rates to all local points equal to the rate to the "basing point" plus a local rate from there on or a local rate back to an intermediate town. Thus, the rate from New York to Troy, Ala., was made by taking the rate to Montgomery and adding the local rate (a higher rate per mile) between Montgomery and Troy,[1] even though Troy was in many cases the nearer point and goods to Montgomery were to a considerable extent hauled to that place through Troy.

The error in the argument favoring this practice lies in the assumption, too readily arrived at, that, without place discrimination, freight must move toward its destination all the way in small lots. Nothing could be farther from the truth. It needs but to make a proper difference, dependent upon difference in cost of carriage, in wholesale and retail rate, such as a difference between the rate for carload as distinguished from less than carload shipments, to secure the larger shipments presumably to the extent that they ought to be large. If it really costs less per ton to carry goods in carload lots than in smaller quantities, then the railroads should and legally may, as in practice they usually do, make a distinction in the rate. Where the advantage of having goods move in smaller quantities and more frequently more than offsets the disadvantage of the higher cost, and therefore rate, they will be moved, and ought to be, in less than carload lots. In many cases it may be desirable that they should go in smaller quantities

[1] See Interstate Commerce Reports, Vol. VI, pp. 3–35.

direct to retail dealers, even at a higher rate, rather than be burdened with two sets of loading and unloading expenses. But where there is no such advantage, the tendency will be for the goods to be carried in larger shipments. If it is really more economical for goods to be carried to Montgomery in carload lots and thence redistributed, and if the difference in the carload and less than carload rates is an accurate measure of the difference in economy or cost, then the small neighboring dealer will find that he can more cheaply buy his goods in Montgomery or some other large near-by city from a jobber to whom they have come by carload lot, than he can get them from Boston or New York in smaller amounts. The consequence will be that the large jobber will establish himself in some trade center from which he will supply the surrounding market.

There is ample evidence from experience, that the territorial distribution of the jobbing trade is greatly dependent on the relation of carload to less than carload rates. In one of the cases before the Interstate Commerce Commission, involving rates from eastern and middle western points to the Pacific Coast,[1] a considerable part of the complaint was that the roads made too great a difference in rates between carload and less than carload shipments and that, partly in consequence of this difference,[2] goods were shipped to far western jobbers in carload lots, to be by them redistributed, whereas they might otherwise have been sent in smaller quantities from St. Louis and other middle western jobbing centers, direct to the far western retailers. In this case it was

[1] Interstate Commerce Reports, Vol. IX, pp. 318–372.

[2] Although partly, doubtless, because of lower rates to the coast than to inland far western points.

alleged that the difference in rates on shipments of the larger and smaller amounts was excessive, and unduly and unfairly built up the far western jobbing centers at the expense of the Middle West. Either an excessive difference or too small a difference, *i.e.* any difference other than that properly required by the difference in cost, tends to make freight move in uneconomical ways; but it is sufficiently clear that the extent to which goods are shipped in large lots to distributing centers is considerably affected by comparative carload and less than carload rates; and it is not unreasonable to conclude that a difference based on difference in cost to the transportation company will tend to bring large-scale shipment to whatever extent is most economical, and will tend to build up jobbing centers where the economic welfare of the community most requires them.

It does not, then, require arbitrary discrimination between places to bring about shipment of goods in the most economical way. And arbitrary discrimination between places, so far as it brings about the wholesale shipment which a system of rates based upon cost would also bring about, may result, just because it is a purely arbitrary rather than the natural method of attaining the desired end, in a location of jobbers in a city favored by the rate system, when they would otherwise, perhaps, find a different city more advantageous. The basing-point system, in other words, may be a comparatively artificial selection and building up of wholesale or jobbing centers, as contrasted with a possible selection and development less artificial and more desirable. The basing-point system may, also, because of its arbitrary discrimination, unduly and uneconomically concentrate business at the favored point.

§ 5

Discrimination in Favor of Intrastate Business, Resulting from Orders of State Commissions

No less objectionable than discrimination caused by competitive conditions or by the arbitrary action of transportation company managers, is discrimination brought about, as, on occasion, it has been brought about, by the orders of state railroad commissions. To illustrate, the Texas Railroad Commission not long since ordered rates on traffic from Dallas and Houston to various other Texas points, so low as to put Shreveport, La., at a disadvantage in seeking to market goods, competitively with Dallas and Houston, in these other Texas centers.

Such discrimination is partly analogous to a protective tariff (around the borders of Texas). It would tend somewhat to prevent the bringing of goods into Texas from points outside of that state. But it differs from protection because it operates not alone and not intentionally through high rates on imported goods. A state commission, indeed, would have no shadow of power to order an increase of rates on interstate traffic. The discrimination in question operates rather through the enforced reduction of intrastate rates. There is here, therefore, some resemblance to a bounty or subsidy on internal trade. Nothing is done, directly, to prevent importation. But home producers, or jobbers, or both, are favored by the low intrastate rates. If the state were to compensate the railroads operating within it, for any loss so caused, the burden of the lower rates would fall on taxpayers, and the analogy with a bounty

or subsidy would be complete.[1] We should then certainly contend that even the Texans themselves, as a whole, gained nothing from the discrimination. Every dollar thus saved by a Texas consumer, through patronizing a home producer or jobber favored by the low rates, would be a dollar filched from the Texas taxpayers. And to the extent that an outside producer could sell, if not discriminated against, more cheaply, the taxpayers must lose by such discrimination more than the consumer gains. Furthermore, Texas industry would be diverted out of its most profitable channels, artificially, and at the expense of Texas taxpayers.

There is not, of course, in practice, any such compensation made to railroad security owners, by a state, for low intrastate rates. But our conclusions as to the unwisdom of the policy are not, on that account, very different. The loss resulting from the reduced rates, if taxpayers are not to bear it, must fall either upon the owners of railroad securities, who thus get smaller returns, or upon other shippers and consumers who have to pay higher rates than would else be required. These other shippers and consumers may be, to a large extent, persons in Texas who ship goods to and get goods from other states. Shippers and consumers in these other states may likewise suffer. If intrastate rates may be made too low to yield a fair profit, the opportunities for enforced reduction of high interstate rates become less favorable. So far as interstate rates might thus remain higher than they would otherwise be, they must operate, like a protective tariff, to prevent trade profitable both to the rate-reducing state and to the other states. It is difficult to believe that a state can gain any permanent

[1] See Part II, Chapter VII and §§ 2, 3, and 4 of Chapter VIII.

benefit from the enforcement of discriminatory and unduly low rates on intrastate business. If it secures a temporary gain at the expense of inadequate returns to railroad investors, the building of railroad mileage within the state will be discouraged. If the low intrastate rates involve higher *interstate* rates, they act like a protective tariff in restricting profitable trade and like a bounty in encouraging unprofitable trade; though the burden of this "bounty" falls upon those who still engage in interstate business, rather than upon the body of taxpayers. And neighbor states are hardly likely to allow the railroads to recoup any losses suffered, by charging high intrastate rates within their borders.

A state commission may properly prevent the charging of exorbitant or monopoly rates on intrastate business, and throw upon the Federal body the responsibility for discrimination against interstate business, resulting from unduly high rates allowed on such business. But it should not, even for the welfare of the state itself, enforce discriminating and unfairly low intrastate rates. Nor can such a policy be allowed by the Federal government, even if individual states short-sightedly favor its application within their boundaries.

In the Shreveport case, complaint was made to the Interstate Commerce Commission against the discrimination to which Shreveport was subjected. The Interstate Commission ordered that the discrimination should cease. It fixed, to be sure, maximum rates, thus correcting the discrimination, in part, by reducing interstate rates. But it allowed the discrimination to be partly corrected by the raising of intrastate rates, from Dallas and Houston to other Texas points. Appeal was therefore made to the Commerce Court and from it to

the Supreme Court.[1] The ruling of the Interstate Commission was objected to as beyond its authority, on the ground that this Commission has no authority over rates on traffic wholly within a state and that some of the intrastate rates in question had been fixed by the Railroad Commission of Texas below the maximum rates prescribed by the Interstate Commerce Commission for interstate traffic. The Supreme Court, in handing down a decision favorable to the Federal regulating body, declared that Congress has the right to prevent such discrimination against interstate commerce as would have resulted from the uncorrected Texas rates, and, in general, that Congress has authority to prevent any use of an instrumentality of interstate commerce (*e.g.* a railroad) which would discriminate against such commerce. The power to deal with the *relation* of intrastate and interstate rates, *as a relation*, the court asserted to lie wholly with Congress.[2]

§ 6

Discrimination by a Transportation Company in Favor of Traffic Moving a Long Distance over its Own Lines

Discrimination may also result from the desire of a railroad (or navigation company) to give preference to traffic moving solely or mainly over its own lines as against traffic using chiefly the lines of another company. Thus, goods may be produced at some point or

[1] *Houston and Texas Railway* v. *United States*, 234 U. S., 342.

[2] The decision in the Minnesota Rate case (230 U. S., 352) is not inconsistent with this. In that case the court upheld state-made rates which were asserted to involve discrimination against interstate commerce. But in that case, as the court took occasion to point out, no application of Federal regulation through a decision of the Interstate Commerce Commission was before it for review.

points on a railroad and be marketable in two or more directions; and it may be that if the goods are sent in one of these directions they will soon leave the rails of the originating line to complete the journey over another road, while if they are sent to a market in a different direction, the originating road can carry them most or all of the way. Under such circumstances, the originating road may be tempted to charge comparatively high rates per mile for its part of the joint haul made by small use of its own rails, while charging comparatively low rates per mile on traffic going the long distance over its own lines.

In a case decided by the Interstate Commerce Commission in 1900, it appeared that the Louisville and Nashville Railroad was engaging in this practice in regard to naval stores and cotton shipped from points on its Pensacola and Atlantic division in Florida. These goods, if shipped eastward, *e.g.* to Savannah, soon left the lines of the Louisville and Nashville road, reaching Savannah over other lines; while if they were shipped westward, some of them would eventually be carried hundreds of miles over its own rails. The eastward rates, accordingly, were kept comparatively high and the westward rates made comparatively low, largely in order to discourage eastward and encourage westward shipments. Such a policy involves discrimination between the markets to which the goods may be sent, — in the case mentioned, it involved discrimination against Savannah; it may cause traffic to flow in an uneconomical direction; and it may compel the market (Savannah, in this case) on the lines of the connecting railroad, to draw supplies from a relatively uneconomical

[1] Interstate Commerce Reports, Vol. VIII, pp. 376–408.

source. Nor do the transportation companies themselves, as a whole, benefit from such a policy, since the traffic which any one company gains by thus preferring it own lines, another company loses; and the policy, if allowed, can be practiced independently and in retaliation by all the companies. The Interstate Commerce Commission, in the case above cited, declared the discrimination practiced to be unreasonable, and ordered a readjustment which partially, at least, corrected the evil complained of.

A railroad may likewise endeavor, by means of discriminating rates, to supply cities on its own lines mainly with goods which it carries a long distance over its own rails, rather than with goods produced at other points, which must be delivered to it by connections and which it can carry but a few miles. This species of discrimination, also, involves economic waste and has been disapproved of by the Interstate Commerce Commission.[1]

§ 7

Summary

Discrimination between places we have seen to be chiefly due to competition. This competition may be competition of routes, competition of directions, or competition of locations. It may even be competition with local self-sufficiency.

Competition between two or more railroad companies, which causes discrimination by each in favor of competitive and against intermediate traffic, involves waste. The railroad plants, considered altogether, are probably

[1] Interstate Commerce Reports, Vol. VI, pp. 488–519 (see, especially, pp. 515, 516).

not more fully utilized than if rates were no higher on the average and more equal, though one or more plants may be more fully utilized and the others, or other, less so. Industry is less apt to develop in those places where the natural advantages favor it. Rather is its location partly determined by the fact of railroad competition at some points and not at others. Furthermore, goods may frequently be carried by rail a longer distance, when a more economical location of industries would result in their being carried a shorter distance.

This kind of discrimination between places has been practiced by American railroads, in favor of import traffic, as against carriage of goods from an American center of production, to the same American consuming center. The consequent tendency is for American labor and capital to be kept out of or driven out of a line which they would otherwise naturally follow. Goods are imported from abroad which might be produced with less labor cost at home. Discrimination *against* imported goods is more likely to be practiced by a government railroad system influenced by protectionist motives. It is no less uneconomical than the reverse practice. Discrimination in *favor* of imported goods tends to drive a country's industry out of channels which it might profitably follow. Discrimination *against* imported goods tends to guide a country's industry into channels which are not profitable.

The basing-point system has sometimes been defended as a kind of discrimination between places, which conduces to economy of transportation by favoring large shipments. But it appears that an economically justifiable difference in rates on carload and less than carload freight, based on actual difference in cost of carry-

ing, is likely to secure large-scale shipment so far as it should be secured. And, on the other hand, the basing-point system, like other discrimination between cities, may tend to develop business in a favored city at the expense of some other, better situated city, and beyond what true national economy would justify.

Unduly low intrastate rates made by a state commission, for the encouragement of shippers within the state as against competitors from outside, are adverse to the general interest of the American public and are practically certain to injure even the state which endeavors to enforce them. Federal power, operating through the Interstate Commerce Commission, is, however, supreme where interstate business is discriminated against and can put a stop to such discrimination.

Discrimination by a transportation company against goods coming from or going to points on other lines, in order to force goods to go long distances over its own lines, also involves economic waste.

CHAPTER V

Economically Defensible Discrimination among Places

§ 1

Discrimination among Places, by a Roundabout Line

In the last chapter we saw that discrimination among places, caused by competition at some places and not at others, and practiced on all the lines or routes engaged in this competition, involves economic waste. But there are situations in which discrimination by a railroad in favor of junction points, and against intermediate points, is not uneconomical. Such a situation may exist when one of the lines connecting two junction points is appreciably more roundabout than the other or others. We saw, in a previous chapter,[1] that goods might more profitably be carried by a relatively roundabout line in three cases: first, when traffic is in excess of the facilities of more direct lines and the surplus can be carried by the roundabout one, this may be better than to invest additional capital in direct lines; second, when a new line or an additional line must be constructed for traffic between two points, a roundabout line may sometimes be preferable and able to carry the traffic more cheaply, by virtue of securing more intermediate traffic to help pay general expenses, interest, and profits; third, when facilities are in excess of traffic and must be in part

[1] Chapter II (of Part III), § 2.

abandoned, it may be desirable to continue operating a relatively roundabout line between two points if intermediate business pays part of its expenses and profits and enables it to carry the through business for the lowest rates. But if a relatively devious line, *ABCD* (see figure 13), is to carry traffic between two points, *A*

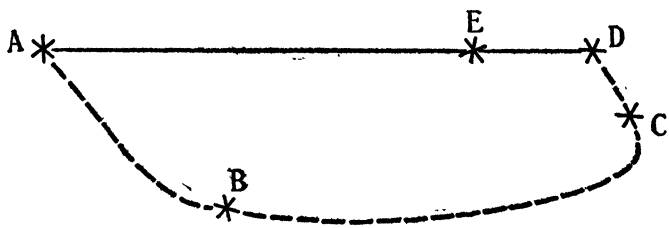


FIGURE 13

and *D*, which are or can be served by a more direct road, the roundabout line must be permitted to make rates at least as low as those the direct line does or would make. If the direct road is there, the roundabout road, *ABCD*, will have to make an equally low rate between *A* and *D*, to get a satisfactory share of the traffic. Furthermore, the cities *A* and *D* may claim, with reason, that their situation with respect to each other entitles them to a rate on traffic between them, based on the shortest distance connection; and that even if a short line did not exist, the rate between them should not be much, if any, higher than would yield a fair profit on the capital required for such a direct line.[1] A higher rate would

[1] This does not mean that the longer distance points can always reasonably expect low rates on traffic between them, for such traffic may sometimes be so light that a direct road could not be made to pay or could be made to pay only by charging very high rates. A roundabout line may conceivably be able to charge rates no higher, perhaps lower, and still not discriminate against intermediate points. If so, discrimination by such a line against intermediate points would not be justifiable.

be exorbitant and would subject *A* and *D* to unreasonable disadvantage. A higher rate would not be normal and could only continue if no new company dared enter the business. For a normal rate is one which yields the average return on the capital necessary for the service. The roundabout line *ABCD* has been made long *in order* that it might serve *B* and *C*. Its roundaboutness is largely for their benefit. The extra cost incurred was incurred entirely for the sake of intermediate traffic, *e.g.* *A* to *B*, *A* to *C*, *B* to *C*, etc. The burden of this cost cannot, except arbitrarily or by favoritism, be imposed upon the through traffic between *A* and *D*.

In such a case as we have under discussion, it may be economically desirable that the long line should get at least a share of the business, rather than that it should refuse to compete, and should, therefore, for one possibility, encourage additional track building by a more direct road. Also, it may be necessary and right that the long-distance business, *A* to *D* and *D* to *A*, should not have to pay high rates. Yet the indirect line probably cannot, with reason, be expected to reduce all of its intermediate rates to an equally low level. From *A* to *C* over the roundabout line is farther than from *A* to *D* over a direct line. To compel the road *ABCD* to charge as little or less from *A* to *C* as should be charged and as it probably has to charge from *A* to *D*, may deprive it of a fair return. Such a policy, consistently applied over a long period of years, would tend, somewhat, to prevent the building of roundabout lives having to rely upon long-distance traffic for part of their returns. It would tend, therefore, to deprive intermediate points not in a direct line between two given points, of railroad service. To follow the policy of letting the roundabout line dis-

criminate against the intermediate points, may therefore make the discrimination against them really less than it otherwise would be. If such discrimination is prohibited, it may well happen that these intermediate points will either have no service, or will have to pay in rates the entire expenses and profits of a road; while *A* and *D* continue to get rates at least as low as a direct line can afford to charge, for if the reasonable rate over the direct line is not made voluntarily, it may be forced by regulation.

On the other hand, the extent to which this discrimination may properly be carried is not without limit. The longer line should not be allowed to charge rates on its intermediate traffic, where it has a monopoly, higher than would yield a fair profit on capital invested, from that traffic alone. Neither should it be allowed to engage in competition for the longer distance traffic between *A* and *D*, even if it were foolish enough to attempt to or would do so as a matter of temporary policy, at rates which would pay less than the special additional cost (train mileage and terminal expenses) of carrying this longer distance traffic. If a direct line can afford to carry the traffic for rates less than would yield the roundabout road some slight return above this cost, the direct line may properly be allowed to have it.

But we have seen that when competition between two or more lines causes discrimination against intermediate points on all such lines, there is a tendency towards uneconomical application of the community's labor force.[1] Even though the direct line taps less intermediate traffic than the other, it is almost certain that it will tap some, *e.g.* *A* to *E*. While the reasons given may sometimes justify a limited amount of discrimina-

[1] Chapter IV (of Part III), § 2.

tion in favor of *A* and *D* traffic as compared with intermediate traffic on a roundabout line, they do not justify on grounds of economy, discrimination in favor of *A* and *D* traffic as compared with intermediate traffic, *A* to *E*, etc., by a direct line.[1] *A* and *D* may reasonably urge that they are entitled to a rate between them which can be afforded, without discrimination, by a direct line, and that an indirect line, if this *A* and *D* traffic can be more economically carried by it, can properly make such a rate. But *A* and *D* cannot reasonably urge that they are entitled to a low rate on the direct line at the expense of *E*.

We conclude, then, that the rates on intermediate traffic on neither line should exceed a fair profit on the requisite capital for taking this traffic; that the rates on the competitive traffic should not exceed what would give, along with the charges on intermediate traffic, a fair profit on the cost of a direct line; and that discrimination on a direct line is not economically justifiable. How can the government or a government regulating body make its rulings consistent with all these principles, while yet not preventing the carriage of goods, in each case, by the more (or the most) economical line? The conclusion at which we shall arrive is substantially the same (though it will be stated more completely) as was arrived at in a previous chapter.[2] The direct line may, in most cases, properly be prohibited from discriminating at all, or at least from discriminating appreciably, against intermediate traffic. But such prohibition will make it impossible for the direct line to carry the *A* to *D* and *D* to *A* traffic for the bare additional cost to it of carrying this traffic, since this traffic must then pay a good share

[1] See, however, § 5 of this Chapter (V of Part III).

[2] Chapter II (of Part III), § 2.

of its general expenses, interest, and profits. To let the roundabout line carry this through traffic for the bare additional cost of carrying, while forbidding any discrimination on the direct road, would frequently give the roundabout line an undue advantage and would be likely to result in its taking most or all of this through traffic, *whether it was the more economical route or not.* To absolutely forbid discrimination by the roundabout line would be likely, as we have seen,[1] to prevent that line from carrying any of the through traffic, whether it was economically desirable that it should carry any of this traffic or not. If it is desirable that the direct line should not discriminate at all, some limit must frequently be placed to the discrimination allowed on the longer line, beyond requiring that it shall not carry competitive traffic at a loss and that it shall not charge exorbitant rates on non-competitive traffic. The aim should be to leave the two (or more) railroads, after regulation of discrimination, in the same relative positions as before, so that each road would still be able to take, in competition, the business which it was most fitted, economically, to take. Properly to decide, in each case, what relation of rates may be allowed, would be a task of extreme difficulty. Only approximately satisfactory results can be expected. But it is believed that to have some control of this sort is better than to suffer all the wastes and inequalities of unregulated competition. If the general rule of the 4th section of the Interstate Commerce Law is applied to the direct road, viz., that no greater charge shall be made for a shorter haul than for a longer one, over the same line in the same direction, when the shorter haul is included in the longer, then a per cent.

[1] *Ibid.*

deviation from this rule should, in many cases, be allowed to the longer line. As a matter of fact, the 4th section of the Interstate Commerce Law, in its amended form, gives the Interstate Commerce Commission the power to prescribe, from time to time, the extent to which common carriers, subject to its jurisdiction, may be relieved from the above-stated requirement. The Commission, in the exercise of the discretion thus given it by law, should, it is thought, decide each case arising, with due reference to the principles above set forth, and, in fact, does decide cases in the light of some (though not, apparently, all) of these principles.[1]

The carriage of a part of import and export traffic by the more indirect routes involves discrimination in favor of this traffic by those routes, as compared with the rates charged upon intermediate traffic, including strictly domestic traffic. The more indirect lines must discriminate if they would meet the competition of the more direct. If they do not meet this competition, the direct lines may be encouraged to add to their plants, when the truest economy for the community would require that some of the traffic be carried on roundabout lines. On exported grain, for example, the rate to Liverpool via New Orleans or Galveston cannot be higher than by way of New York, and if the water rate is higher from New Orleans to Liverpool than from New York, then the rail rate to New Orleans must be correspondingly lower than to New York. Similarly, on imported goods the rate over the longer routes must be as low as over a shorter, if any goods are to be carried by the longer routes. But the intermediate rates, including strictly domestic rates, cannot usually be made correspondingly low. A certain

[1] See Twenty-fifth Annual Report of the Interstate Commerce Commission, 1911, pp. 22–26.

amount of discrimination on the longer lines should sometimes, therefore, according to the principles which have been here elaborated, be allowed. Providing the discrimination allowed is not so much that the through traffic is favored over domestic traffic, by the more nearly direct lines, it is not uneconomical and does not involve a turning of the country's labor out of its natural channels. For the foreign producers would have, in any case, and ought to have, the advantage of sending goods to their American market by the most direct route, and American consumers should have the advantage of getting foreign goods at fair rates over the shortest possible route. If roundabout lines are able, by carrying imported goods at the low rates which this competition of direct lines compels, to secure returns which make it possible for the long lines to serve intermediate points more cheaply than they otherwise could, or to serve intermediate points where railroads could not otherwise be built, it cannot be said that, on the whole, foreign producers are thereby given artificial advantages over domestic. Only when the competition for the longer distance traffic makes the rate so low compared to domestic traffic, as to subject domestic producers to discrimination even on the direct lines, can we confidently assert that the discrimination, by a roundabout line not completely utilized for intermediate or strictly domestic traffic, is uneconomical.

§ 2

Discrimination by the Longer or Longest Line, when there is Competition of Directions or of Locations

The principle that, under certain circumstances, it is economically desirable for a longer line to carry goods of

certain kinds, rather than a shorter line, and that the longer line may properly be allowed to discriminate to a certain degree in order to do so, applies not only when there is competition of routes, but also when there is competition of directions and competition of locations. Suppose, for example, the railroads AB and AC leading to a common market A from the divergent lumber-producing centers B and C, the road AC being the longer. (See figure 14.) Suppose, also, that the labor cost of

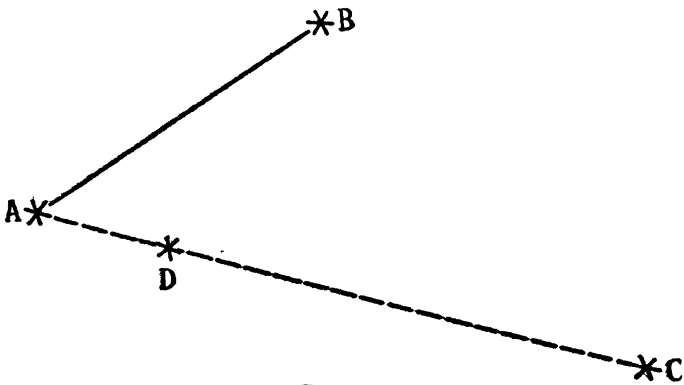


FIGURE 14

producing lumber at C is as great as at B. Suppose lastly, that there is competition between the roads, each to develop the lumber business on its line, *i.e.* competition of locations; or else that there is, for the lumber-producing center on each road, the option of shipping by another or other roads to a different market, so that there is a real competition of directions. Under such circumstances, it will sometimes be more economical that A should receive part of its lumber from C over the longer line. It may be that the longer line is able to pay much of its general expenses and profits from local business,

e.g. *C* to *D*. Yet the through traffic, *C* to *A*, will perhaps pay something more than the mere extra cost of carrying, and so will be worth seeking. To adopt the principle that *A* should be served entirely from the shorter distance source, *B*, is to insist that, if necessary, a new line from *B* to *A* should be constructed to carry the *B* lumber to *A*, even though this traffic alone would have to pay a much larger proportion of general expenses, fixed charges, and profits than the through traffic on the road *CA*. It might very well be more economical that the longer line, *CA*, which has intermediate traffic from *C* to *D*, etc., perhaps more than the other road, and which may, therefore, be able to take the *C* to *A* business for a little more than the mere terminal and train mileage expenses incident to it, should mainly carry the required lumber to *A*. An exactly parallel argument would show that it might be preferable for the road *CA* to carry lumber from *C* to *A*, than for a shorter road, having less intermediate traffic, to be constructed with sufficient trackage to carry all this *C* lumber to some other and nearer market where it would bring no higher price.

If, however, we admit these points, we are compelled to admit that discrimination on the longer roads — but not on all the roads — may be justified. The line *CA* must meet at *A* the competition of an actual or possible shorter railroad. *A* is entitled to a price for lumber based on a rate which such a road could give. *C* may be entitled to a profit based on conditions in a nearer market and over another actual or possible railroad. The road *CA* must, perhaps, make a low rate on through business or lose the business. Yet it cannot afford to make equally low rates on its intermediate traffic, such as that from *C* to *D*. Nevertheless, the point *D* may be,

on the whole, helped rather than hurt by the possibility of some other traffic for the railroad *AC*.

§ 3

Discrimination by the Shorter or Shortest Line, when Such a Line has Comparatively Light Traffic

But there may be circumstances under which it is the shorter line rather than the longer that may properly be allowed to discriminate in favor of long-distance as against intermediate traffic. Turning back to figure 13, let us suppose that the longer line, *ABCD*, has heavy local traffic and is therefore able to charge low rates. It may charge rates between *A* and *D* which are higher, corresponding to the greater distance, than between *A* and *C* or *B* and *D*, and which are, therefore, in no sense discriminatory against intermediate business, but which are, though remunerative, very low per mile. The more direct line, *AED*, on the other hand, may run through a territory which provides, even with the addition of traffic from *A* to *D* and *D* to *A*, only comparatively light traffic, and this shorter railroad may therefore be compelled to charge rates per ton mile much higher, on the average, than are charged by the road *ABCD*. Yet if the railroad *AED* charges, on *A* to *D* and *D* to *A* shipments, rates per mile anything like as high as it is obliged to charge on *A* to *E* and *D* to *E* traffic, the long-distance traffic will go by the roundabout road. To carry a share of this longer distance traffic, the line *AED* must then discriminate in its favor.

Let us look more fully into the economic problems involved. If the long line is not discriminating against intermediate points but makes the low longer distance

rates simply because large traffic enables it to make all of its rates low, these low long-distance rates ought not arbitrarily to be raised. The railroad, if well managed, is entitled to a fair profit. The public, if large business makes such rates profitable, is entitled to low rates, and if the short line, because traffic on its rails is light, cannot get a profit except by charging higher rates per mile on its non-competitive traffic, it is fairly entitled to do this. The *A* to *D* traffic, however, will not add to the fixed charges or general expenses of the railroad *AED* and, since the distance is shorter over its line than over that of its rival, the actual expenses of moving the traffic, *i.e.* the expenses for the production of train mileage, are probably[1] less by this shorter route. Economic waste may therefore be avoided by encouraging such traffic to follow this route even though apparent discrimination must be practiced to realize that end. As a matter of fact, to allow the line *AED*, under these assumed circumstances, to make the lower rates on its longer distance traffic, will not necessarily increase, and may decrease, the disadvantage to which intermediate points on this line are subjected. The lower *A* to *D* rates very likely would be made, any way, by the longer and more fully utilized road, and probably ought to be made by that road. The higher rates on local traffic are essential to the shorter and less fully utilized road. If this shorter road can get some of the *A* to *D* and *D* to *A* business, it will perhaps be more able, rather than less able, to reduce its intermediate rates.

Likewise, if the competition between two or more rail-

[1] Not necessarily, because, as Professor H. J. Davenport has suggested to me, the more direct line may be constructed for lighter traffic, with resulting higher operating costs per ton carried.

roads is a competition of directions or a competition of locations (as represented in figure 14), there may sometimes be similar circumstances justifying place discrimination by a short line.

§ 4

Discrimination among Places, by a Railroad Competing with a Water Line

Let us turn now to another condition under which discrimination among places may be warranted. Such discrimination by a railroad may sometimes be warranted when the railroad has to meet, at certain points, and not at others, the competition of vessels operating on free waterways, *e.g.* the ocean. Consider the case of a railroad joining the three points *A*, *B*, and *C* (see figure 15), when the two more distant points from each other, *A* and *C*, are also joined by a water transportation line, and when the intermediate point *B* is not. Here the railroad *ABC* will make relatively low rates between *A* and *C* to meet the competition of the water line *AC*, but will not be compelled to make, and probably will not make, correspondingly low rates in proportion to distance and cost, or, in some cases, even absolutely, between *A* and *B* or between *B* and *C*. Is discrimination among places, by a railroad, under such circumstances, economically defensible?

If the railroad *ABC* has intermediate traffic, and the water line has only the traffic from *A* to *C* and *C* to *A*, then we have a problem not unlike that of the direct *versus* the roundabout railroad, when the latter has more intermediate traffic. In our figure, the water route is more roundabout than the rail route, but this may be

more than compensated by the usually lower cost of transportation on natural waterways. Yet the intermediate traffic on the rail line may make it the more economical route. For the extra cost of taking the

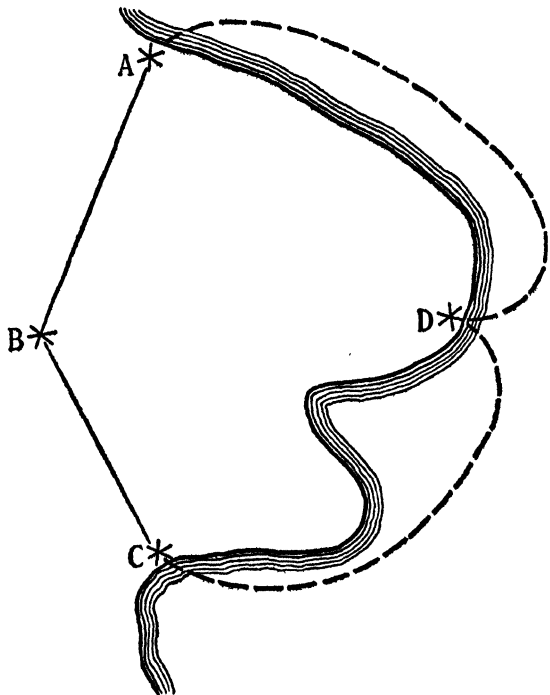


FIGURE 15

through traffic over the same railway, since this extra cost involves no greater fixed charges or general expenses, may be less than the cost, counting necessary profit, of carrying the goods by water. It will then be economically desirable that the railroad plant necessary for intermediate traffic should be fully utilized, before vessels are constructed to carry the *A* and *C* traffic, and that

these vessels should be constructed only in sufficient number to take the *surplus A* and *C* traffic.

Are the conclusions otherwise if the water transportation company, also, has a considerable amount of intermediate traffic, *A* to *D*, *D* to *C*, etc.? There is a possibility that, in this case, the ability to get part of the through traffic will enable the water line, too, to carry its intermediate traffic more cheaply. Ability to get both most of the *AC* traffic and this intermediate traffic might make it possible for the water line to employ and to fully utilize larger vessels, and to realize the resulting economies. If so, the discrimination resulting from the competition would perhaps be practiced by the water line company also, to the relative disadvantage of *D*; or else the railroad might get all the through traffic, smaller vessels might be used for intermediate traffic, and rates, because costs, might be higher for *D*. *B* and *D* would both be subjected to disadvantage, and industries would be prevented from locating in them, because there was competition at *A* and *C* and none at *B* and *D*. The objections to unlimited discrimination of this sort on both lines are the same as were previously stated [1] for discrimination practiced by each of two railway lines. The ideal of economy is that any given block of traffic between *A* and *C* should be carried by that line for which the special additional cost of carrying it is the less (or least). This may be the water line because of the greater average cheapness of water transportation; or it may be the rail line despite greater average costs, because of a less additional cost (train mileage, etc.) for hauling the special traffic in question.

Very possibly, however, competition by the rail line,

[1] See § 1 of this Chapter (V of Part III).

ABC, for the *A* to *C* and *C* to *A* traffic, will not appreciably decrease the size of ships used on the line *ADC* but only their number. Neither is there so likely to be discrimination against *D* as against *B*, nor, if it exists, is it likely to be practiced to the same extent. For *B* is a monopoly point on one line, while traffic to and from *D* may be competed for by any independent vessel. Assuming, then, that competition on the waterway is so evenly distributed as to prevent much discrimination, we have to inquire into the justification of discrimination by the railroad. At the most, the railroad could only drive the water line company entirely out of the through traffic *A* to *C* and *C* to *A*. The traffic to and from *D* would still be carried on the water in vessels of about the same size and at about the same rates. The only question is whether it is well for the community and for points such as *B* and *D*, that the railroad should take the longer distance traffic and should discriminate to do so.

To illustrate, let us suppose that the article competed for is cotton, and that the cost of carrying it, per ton, between *A* and *C*, by the water line, is $1.40. Let us suppose, further, that, at a much lower rate than this, it would not pay to operate vessels for the through traffic between *A* and *C*; that the surplus vessels, after intermediate traffic was provided for, would seek traffic elsewhere; and that at such low rates, no new ones would be built for the *A* and *C* traffic. On the other hand, the cost of carrying cotton per ton from *A* to *C* on the railroad *ABC* would, we may assume, *if this freight should pay a proportionate share towards general expenses, fixed charges, and profits*, amount to $1.50, despite the comparative shortness of the rail route, since, in general, water transportation on free and open waterways is

cheaper. Nevertheless, the variable expenses for carrying the *A* to *C* traffic by rail, *i.e.* the expenses for terminal services and for the production of train mileage, incident to this special traffic, may be not more than $1.35 per ton. Anything over that may contribute towards general expenses and towards making the net profits greater. A rate of $1.38 or $1.39, therefore, would be a rate at which the railroad would much rather take the business than lose it.

To decide whether discrimination by the railroad is economically desirable, we should consider the interests of all places and transportation companies concerned, and, therefore, of the whole community. As respects the interests of the places *A*, *B*, *C*, and *D*, it is to be emphasized that the traffic between *A* and *C* will get lower rates in relation to distance than does the traffic between *A* and *B* and between *B* and *C*, whether the railroad competes or not. The existence of the waterway insures this discrimination, if it may properly be called such. On our present hypothesis with regard to size of vessels, the competition of the railroad does not injure *D*. There are no general expenses for maintaining the water route which now have to be borne more heavily by *D*. *D* loses only relatively and in proportion as *A* and *C* gain. It is entirely possible that the discrimination against *B* would be greater if the railroad were not allowed to compete. For then it would not have been worth while even to build such a road, unless the intermediate traffic[1] could bear rates high enough to make business profitable even if almost no competitive business could be expected. It is true that the railroad, if al-

[1] Coupled with what through traffic would seek the railway by preference even at higher rates.

lowed to add to its profits by taking part of the *A* to *C* and *C* to *A* business, might not merely on that account voluntarily make lower intermediate rates. But so far as these rates are subject to government or commission control, their reduction could be secured with more apparent equity and therefore ease, if it appeared that the railroad could afford such reduction. From the point of view of *B*, therefore, or other intermediate points on the railroad *ABC*, it would hardly appear that reasonable competition by this railroad for the through traffic, should be opposed. The intermediate rates would not suffer in consequence, and might even, with effective government regulation, be made lower. *A* and *C* have something to gain from the competition and nothing to lose. As to the rail *versus* the water line, if the railroad can afford to carry the freight without loss and even with some gain to itself, at a rate so low that no one would build vessels to meet that rate, then, presumably, investment in such vessels would be uneconomical. Those who, in the absence of the railroad, would so invest, turn their control over capital to other lines, or to navigation between other cities, and it cannot be said that they lose more than the railroad company gains. If it is almost worth while to build the railroad for the inland transportation alone, and if the competitive traffic, even at rates below what a water line could profitably meet, makes it entirely worth while,[1] then it is better to have the railroad than to have the additional ships necessary to carry the *A* to *C* traffic.[2] The Federal law

[1] Cf. Taussig, *Principles of Economics*, New York (Macmillan), 1911, Vol. II, p. 374.

[2] On the other hand, it may often be desirable for railroads to charge rates on traffic moving short distances, which pay but little towards general expenses and profits, rather than have the goods carried by wagons or auto-trucks. Where

and the Interstate Commerce Commission in its interpretation of that law, are therefore to be commended for recognizing water competition when of substantial importance, as possible justification for discrimination by a railroad between places.[1]

A good illustration of the effect of water competition is found in the facts brought out in the St. Louis Business Men's League case decided by the Interstate Commerce Commission in 1902.[2] It appeared, first, that the transcontinental railroads were charging much lower rates to the Pacific Coast than to far western points not on the coast. Even points a considerable distance inland had to pay higher rates on goods from the East than did coast points. The rates to these inland points were based on the coast rates. That is, from points east of the Mississippi or Missouri rivers, rates were made to various far western points, which were the sum of the competitive rates to the coast and the local rates back to those far western points. This situation, the rail carriers claimed, was due to water competition at the longer distance points. From ports on the Atlantic Coast, goods can go to the Pacific Coast by water around Cape Horn; by water to Panama, and, after crossing the Isthmus (or

low rates are made for this reason, such low rates may be defensible from the viewpoint of national economy, even though traffic moving longer distances has to pay more towards profits. For, unless the transportation plant is already fully utilized by traffic which is more profitable, it may be better that this short-distance traffic should be taken by the railroad in question, already and properly there for the sake of other business, than that additional capital should be invested in the other facilities (trucks, etc.) for conveyance.

[1] See discussion by the Interstate Commerce Commission regarding section 4 of the law in its present form, in the Twenty-fifth Annual Report of the Commission, p. 26.

[2] Interstate Commerce Reports, Vol. IX, pp. 318–372. See also Twenty-fifth Annual Report of the Interstate Commerce Commission, pp. 27–41, for discussion by the Commission, of a more recent case involving transcontinental rates.

going through the canal, as will soon again be possible), by water up the coast; or the goods may go by rail across the United States or Canada. In consequence of the water competition, the rates to Pacific Coast ports must be low; but they need not be equally low to interior western cities. It appeared, second, that rates from Pittsburg, Chicago, St. Louis, and other cities east of the Mississippi and Missouri rivers, but not on the Atlantic Coast, were just as low to the Pacific Coast as rates from Atlantic ports, but were no lower. In the absence of water competition, rates from these interior cities to the western coast, would, in all probability, be lower than rates from Atlantic ports to the coast. While other conditions have been such that water competition has not made rates from the Atlantic ports actually lower than from these interior cities, it has made them lower in comparison with distances carried.

Here, then, we have discrimination by railroads in favor of that part of their traffic which is subject to water competition. Yet if the railroads must so discriminate to get the through business, if the through business, even at these low rates, will pay the extra cost of its own moving and something towards general expenses and profits, and if correspondingly low rates on all the intermediate traffic carried cannot be afforded, the competition by the railroads, if not carried to undue lengths, would appear to be legitimate.[1]

[1] Discrimination to the same degree may not be defensible when the railroad in question is taxed to its uttermost to carry the traffic which is non-competitive with any water transportation company. It is certainly not desirable, either for the good of the railroad or that of the public, that intermediate traffic, which has no alternative route and which can pay reasonably high rates, should be refused in order that competitive traffic, which has an alternative route and will,

The same principles apply when the competition is, in part or in whole, a competition of directions or a competition of locations. In transcontinental business, the lines leading from Chicago and St. Louis, as well as those leading from Boston, New York, etc., make lower rates to the coast than to interior western points. If they did not, goods which are produced in Chicago and St. Louis for western consumption, and which go west by rail, would be likely, in part, to be produced in Boston, New York, etc., and to go west by water. Low rates on the railroads for such competitive traffic, even though the competition is not of routes, may more fully utilize railroad plants, may, therefore, increase railroad profits, and may add to railroad facilities for intermediate points. A recent decision

therefore, pay only low rates, should be taken. If the railroad is already fully utilized, without the competitive traffic, it cannot properly seek part of this competitive traffic unless by extending its plant, — for example, by constructing an additional track. In such a case, the competitive traffic should not be sought unless it will pay, besides the train mileage and terminal costs which it occasions, a reasonable return on the extra capital (*e.g.* trackage) required (cf. M. O. Lorenz, Constant and Variable Railroad Expenditures and the Distance Tariff, *Quarterly Journal of Economics*, Vol. XXI, 1907, pp. 283–298). We need not conclude, however, that no discrimination whatever in favor of the competitive traffic can, under these conditions, be justified. For in order to carry increased traffic, it is possible that the railroad plant will not have to be increased in the same ratio. A two-track railroad, for example, will carry more than twice as much traffic as a one-track road. Consequently, even though the competitive traffic requires a greater railroad plant than would be necessary if this traffic were left to the water line, such traffic may not involve, and if the size of plant of maximum efficiency has not been reached, will not involve, additional cost in proportion to its volume; and it may perhaps be carried, with economic justification, at rates slightly lower in relation to distance than the rates between points not served by waterways. As a matter of fact, the trackage which is in any case required for intermediate traffic, often suffices, without increase, for the competitive traffic also. Though engines and cars may have to be increased, yet, in the main, the additional business sought merely utilizes existing plant more completely. Also, if trackage has been mistakenly constructed in excess of the needs of traffic which can pay reasonable rates, it may be better to accept competitive traffic which pays but little towards profit, than to refuse it.

of the Interstate Commerce Commission,[1] still more recently upheld by the Supreme Court,[2] limits the extent to which this discrimination may be carried, and limits it more closely for lines leading from the Middle West than for those leading from the Atlantic Coast. Rates from Atlantic Coast territory to western points not on the Pacific Coast must not exceed rates to the Pacific Coast by more than 25 per cent. From Buffalo and Pittsburg territory the discrimination must not exceed 15 per cent. From Chicago territory it must not be in excess of 7 per cent.[3] But the influence of the ocean route is clearly recognized by this ruling, and, as the above percentages show, some discrimination is still allowed.[4] From Missouri River points, however, such

[1] Interstate Commerce Commission Reports, Vol. XXI, pp. 329–384.

[2] See Intermountain Rate cases, 234 U. S., 476.

[3] The argument has been advanced that lines leading from the middle western cities have less of adequate economic justification for discriminating in favor of traffic to the coast, because the competition they have to meet is only or chiefly that of markets, *i.e.* directions and locations (see the Twenty-fifth Annual Report of the Interstate Commerce Commission, pp. 27–41, and Ripley, *Railroads, Rates and Regulation*, New York — Longmans, Green, and Co. —, 1912, pp. 610–626). The considerations discussed above in the text would seem to justify a certain amount of such discrimination, though not, of course, an unlimited amount of it. It must be emphasized that the competition is none the less a competition with water lines, because it is, for instance, a competition of locations. It may be truer economy that goods should go by rail and, if they do go by rail, it is probably cheaper, so far as transportation is concerned, that they should be sent from the Middle West than that they should go from the extreme East. Nevertheless, it is probably justifiable to require, as the Interstate Commerce Commission has done, less discrimination on the traffic from the Middle West to Pacific Coast points as against intermediate points, than on the traffic from the East. For while it may be plausibly contended that rates from the Middle West to the Pacific Coast should not be made lower than those from the Atlantic Coast, in view of the lowness of the latter rates, it does not follow that to intermediate far western points, to which the rates from the East are not thus exceptionally low, the rates from the Middle West should not be lower. Since the distance is less, they probably should be lower.

[4] In a decision of Feb. 12, 1915, the Commission modified this order somewhat, as to certain heavy commodities likely to move by water. This

as Kansas City and Omaha, and from points farther west, no discrimination whatever is permitted.

Before this topic is dropped, a warning should be given against interpreting too loosely the conclusions reached. It is not true that a railway is always justified in competing with a water transportation line, however low rates the latter can make. If a railroad, in order to compete with a water line, accepts rates below the actual additional cost incurred for loading, hauling, and unloading the traffic sought, it is engaged in illegitimate competition at the expense of its owners, or of the non-competitive points it serves, or both. As the Interstate Commerce Commission well expressed the matter, in one of its early cases,[1] "Rail rates that sacrifice all benefits to the carrier from the business in order to divert it from competitors by water, are destructive and illegitimate competition. . . . When, therefore, a rail carrier reduces its rates, to compete with a water carrier, below the average necessary for its own proper uses, it takes upon itself the onus of showing that the reduction does not result in actual loss, so as to impose a burden on other traffic and does not unjustly discriminate against localities that are charged higher rates on like traffic." Such illegitimate competition is likely to ruin a water line because the water line is less apt to have non-competitive business from which it can recoup itself. A railroad, on the other hand, can reduce its rates, engage in the competitive part of its business at an actual loss, and, if allowed by government to do so and not already charging

was done to enable the railroads more easily to meet competition via the Panama Canal. (See Interstate Commerce Commission Reports, Vol. XXXII, pp. 611–658.)

[1] Interstate Commerce Commission Reports, Vol. IV, p. 26 (pp. 1–30 for entire case).

all the traffic will bear, shift the burden to other and profitable parts of its line. But successful competition of this sort is not a proof of superior efficiency or cheapness. It does not mean that there is no economic waste in using the railroad by preference to the water line. It is success won by carrying, temporarily, at rates for which the competing railroad or railroads will not carry permanently.[1] It is like the practice of some capitalistic monopolies or trusts, of lowering prices in a given locality, far below cost, as a temporary measure to drive out a competitor, while maintaining elsewhere high prices. The ruin of the small competitor by such competition is no proof that he cannot produce even more cheaply than the trust.[2] The Interstate Commerce Act as amended in 1910 penalizes such illegitimate competition of railroads against water transportation companies, by providing that railroad rates reduced on traffic competitive with a water line cannot be raised again except by permission of the Interstate Commerce Commission, and that, to secure this permission, changed conditions must be shown other than the elimination of water competition.[3]

[1] Cf. Report of Inland Waterways Commission, 1909, pp. 385, 386; also Preliminary Report of National Waterways Commission, 1911, p. 10 (p. 72 of Final Report, 1912).

[2] Another illegitimate method of competition has been the attempt to discriminate in rail charges, against shippers using waterways for a part of their business. It is asserted (Report of the Inland Waterways Commission, 1909, p. 386) that this kind of discrimination existed in France until the government put an end to it. Most shippers are dependent upon railways to reach at least a part of their customers. They can often get along without competing waterways, but seldom without railways. If the railways can, with impunity, deny them reasonable rates or fair service, recalcitrant shippers wishing to use waterways can frequently be brought to terms, and compelled to agree to ship all their output by rail.

[3] Section 4 of the amended act.

§5

Discrimination among Places, by a Railroad Competing with Local Self-sufficiency

Discrimination among places can be defended as economically good, in certain cases where a railroad is pitted against local self-sufficiency. Suppose a railroad from distant coal fields about *A* leads into a region, *C*, where coal can be produced, but at a somewhat greater expense than at *A*. (See figure 16.) Suppose the cost

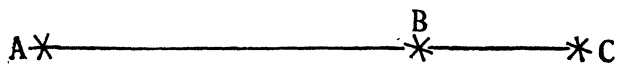


FIGURE 16

at *C* to be $6 a ton and at *A*, $4.20 a ton; and suppose that coal cannot be produced at *A* for sale in *C*, unless the *A* coal producers receive at least this $4.20. A lower price would, we assume, cause *A* producers to desert the poorer mines to such an extent that there would be no exportable surplus. The populations at *A* and at *C* would then both be more self-sufficient than if *A* sent coal to *C*, and received other goods in exchange. Under these assumed circumstances (and, where distances are great, similar circumstances may exist in fact), the rate charged for carrying the coal from *A* to *C* cannot exceed $1.80 a ton. The road *ABC* must get, it may be, on the most of its coal traffic, a rate corresponding to $2 a ton for such a distance as *A* to *B*. Otherwise, the company cannot pay expenses and a fair profit. Nevertheless, $1.80 or even $1.75 a ton, for carrying coal from *A* to *C*, will pay extra costs incident to moving, and leave a small amount towards other ends.

Under these circumstances, the railroad is better off to

get the traffic. The consumers at *C* have something to gain and nothing to lose from having the coal brought from *A*. Any resulting price reduction benefits them as much as or more than it injures producers at *C*. The coal producers at *A*, where, we assume, natural advantages make the labor cost of production lower, gain at least as much business from the opening to them of the market at *C*, as the producers at *C* lose. Intermediate points, such as *B*, will not have to pay any higher rates than they would have to pay anyway, and it may be possible, because of the through traffic, to make the rates charged to the intermediate places less than would otherwise be necessary. Perhaps, were it not for the through traffic, the railroad would never be constructed, and the intermediate points would fail to get any service at all. The railroad plant is more fully utilized by taking the long-distance traffic. It may be desirable, therefore, that *C* should be supplied with coal from *A* and that the railroad *ABC* should discriminate to bring about that end.

§ 6

Discrimination in Favor of Export Traffic

We have seen that competition between a number of transportation lines, causing, on all of them, discrimination against non-competitive points, involves economic waste. But if the system of discrimination exists, the interests of any one line (or group of lines), and of the territory it serves, may be more promoted by its engaging in the competitive traffic at the rates competition determines, than by its relinquishing such traffic to its rivals. For some profit is better than none, and may make possible service otherwise unattainable by intermediate

points, or lower rates than these points could otherwise enjoy.

The same kind of argument tends to show that discrimination by the transportation lines of a country, in favor of goods exported as against goods sold in the home country, may be economically profitable for that country even if unprofitable from the viewpoint of world economics. We may illustrate the various possibilities of national gain or loss by reference to a case decided by the Interstate Commerce Commission in 1899.[1] It appeared, in this case, that the export rates upon grain, not only through the Gulf ports (by which route the argument regarding roundabout lines might apply), but even through the Atlantic ports, including New York, were, at times, lower than the rates upon grain carried to the same ports for domestic consumption. Thus, during October of 1896, the rate on corn from Chicago to New York was 20 cents for domestic consumption as contrasted with 15 cents if for export. Discrimination of the same sort was shown to have sometimes been practiced in favor of exported wheat.

Such discrimination we may show to be a gain to the United States as a whole, on the following hypotheses: first, that these low rates cover at least the additional cost incident to carrying the freight in question, *i.e.* terminal and production-of-train-mileage expenses imposed by this particular business; second, that these low rates are all which the traffic will bear without being,

[1] Interstate Commerce Reports, Vol. VIII, pp. 214–276. Attention should be called to the fact that under section 4 of the original Interstate Commerce Act, as it had been interpreted by the Supreme Court (162 U. S., 197 and 168 U. S., 144), the Commission did not have the power to correct the discrimination in favor of exports complained of. The amendment of 1910 has given it more effective control over situations of this sort.

not merely diverted from one American transportation company to another, but, so far as American railroads are concerned, in a considerable degree lost, *i.e.* that the railroads must make the discriminating rates, to get the largest returns from the business. Under these circumstances, low rates made on export wheat, for instance, by American railroads, would mean a net gain.

At first sight this discrimination may seem like a bounty on exportation. But there is a very distinct difference which destroys the value of any such comparison. A bounty is a clear loss to a country's taxpayers. At their expense, it turns industry into a line which, otherwise, it might not follow and which, therefore, is likely to be a nationally unprofitable line of industry. But the discrimination in freight rates, favorable to exported goods, is not, on our hypothesis, a direct loss to any class of persons in the community. Even if any class of persons suffers indirect loss in consequence, others in the country gain as much or more. The railroads, by making the discrimination, secure traffic which they otherwise could not get, and are, therefore, able, since they are operated under a law of decreasing proportionate expense, to pay greater profits.[1] The railway plant may be, thereby, more fully utilized. Even if, without low export rates, it would not pay for wheat production to be carried on to the same extent, for export, the fact that, by carrying it on, the railway plant already constructed for domestic business can be more fully utilized, makes the business of wheat production for export an economical and desirable business. If the railroads are not allowed thus to discriminate, within limits, and if, in consequence, the production of wheat

[1] Or, if compelled, to reduce average rates.

for export is not carried on, or is carried on to a much less extent, then the railway plants will be likely to be less utilized, to the disadvantage of the railways of the country, and of the general public. For it is reasonably probable that any other industry or industries, to which those who would have produced wheat for export turn their hands, will involve less transportation than the wheat, and perhaps at rates no more profitable. Such another industry will be, in part, production for a local, or at any rate a home, market. The essential fact to remember, is, that since railroads are operated under conditions of joint cost, the carriage of export grain, even at low rates, may help to make the railroads pay. It may help, therefore, to make possible the building of railroads where they might not otherwise be built, and service to the community, which might not otherwise be available. It may make possible a lower average scale of rates [1] and so tend to facilitate greater development

[1] The argument by which the sale of goods abroad by tariff-protected American manufacturing companies at prices lower than those charged at home for the same goods is sometimes defended, bears a superficial resemblance to the argument in favor of discriminating rates on export traffic. It is said that the prices at home of such manufactured goods may be no higher, since the additional supply produced for export may be produced, by more fully utilizing manufacturing plants, at less proportionate cost. In other words, the lower price abroad of American goods, if made necessary by the competition of cheap foreign produced goods, is not at the expense of the American consuming public.

But there is at least one very important difference between the two cases. Transportation within the United States, and to the ports and boundaries of the country, must be provided by labor carried on within the United States and by transportation plants located here. Absolute freedom of trade would not enable us to utilize the labor of foreign railway employees in carrying American goods to ports of export. Our railways may, indeed, be the most efficient in the world; but whether they are or not, we cannot substitute foreign railways for them. Manufactured goods, on the other hand, can be supplied to us directly by our own labor and capital, or, if trade is not too greatly interfered with, by labor and capital engaged in production in a different part of the world. An alternative therefore exists for us in the case of such goods, that does not exist in the case of transportation service. Protection shuts off that alternative.

of other industries also, and greater geographical division of labor within the exporting country. If the greater business makes lower rates a possibility, the stimulus of competition, or the pressure of the public through its commissions, may make these potential lower rates actual.

Let us consider the effects of this sort of discrimination on the different classes of Americans concerned. We may at once cancel out the effects upon American producers and upon domestic consumers of changes caused on the price of grain consumed at home. If the railroads, by low rates on export grain, make it possible for American farmers to get more for their wheat sold abroad (because a less charge for transportation is subtracted from the foreign prices), and if, consequently, these

If American factories, in any line of manufacture, produce goods at such great expense that they must get higher prices from domestic consumers, in order to remain in business, than they are compelled to accept on that portion of their goods which they sell in foreign markets, then it is probable that, except for the tariff, foreign producers would undersell them in the United States, that their high prices at home are, therefore, at the expense of American consumers, and that the protected industry (or industries) is of the parasitic kind and should never have been encouraged.

Even if the tariff is, in any case, to be maintained in favor of a given line of manufacturing, it is not impossible that the sale of surplus goods abroad, for their bare additional cost of production to each factory, will increase the price or prices which home consumers must pay. Suppose that there are 10 domestic factories of about the same capacity, and that each, in order fully to utilize its capacity, sells $\frac{1}{10}$ of its total output abroad at a low price, while covering fixed and general expenses mainly from the money received on goods sold at home. Is it not evident that if the foreign business were not sought and if the home demand were taken care of by 9 factories, the 10th not being built, then total manufacturing plant might be just as fully utilized, and that the benefit in reduced price might then go to domestic consumers? Unless the size of plant of maximum efficiency was a monopoly size, discrimination in prices in favor of foreign consumers could but add to the injury to home consumers caused by the tariff. But in the case of railways, the alternative of a smaller number of plants, though it may exist, probably does not exist to the same degree. Since the transportation service required in each section of the country must be provided by transportation lines in that section, most of the existing trackage, perhaps all of it, would equally be present whether export traffic requiring discriminatingly low rates were sought or not.

farmers get higher prices for the wheat which they sell at home, their gain from wheat sold at home is presumably just equal to the consumers' loss. No net effect is produced on the national wealth.[1]

Our problem narrows itself down, therefore, to a consideration of the effects of this kind of rate making, on American railroads, and on American producers in so far as they are producers for export. Obviously, a reduction of railroad rates on exported grain could not injure American producers. Whatever might be true of market conditions abroad, and however market price abroad of American wheat might be determined, reduction of these transportation rates would not reduce the foreign price by more than an equivalent amount. It could not induce or compel the American farmer to accept a net price, after subtracting low transportation charges, even lower than if these charges were high. The whole difference between high and low transportation rates might or might not be subtracted from the price to the foreign consumer, but, certainly, more than that difference the foreign consumer could not hope to gain. To assume a greater gain for the foreign consumer would be to assume that the American farmer would send more wheat abroad at a lower net price than at a higher net price. The American farmer, then, cannot lose by a reduction in rates on wheat for export, and he must gain, on wheat consumed in the United States, whatever the domestic consumer loses. If, therefore, the railroads in the United States gain enough by the consequent greater traffic, to make the low export rates more profitable to them than higher ones would be, the net effect is an

[1] If inflow of money, because of greater exports, raises other prices, the effects are again two-sided, and the above conclusion remains true.

increase of national prosperity. Since the railroads secure their larger return only because of the greater traffic, they can gain from lower rates only by making wheat production enough more profitable to insure larger crops and more exportation. In practice, then, the low rates can be profitable to the railroads as a whole and, therefore, to the nation as a whole, only if the difference between low and high rates on exported grain goes in part to American producers, and not entirely to foreign consumers.

A parallel argument may sometimes justify lower than average rates for the carriage of American goods produced in the interior and marketed on the coast or other boundary, when these goods meet, in coast or border cities, the competition of like goods produced abroad. So long as these lower rates cover the train mileage and terminal expenses occasioned, and something towards general expenses or profits, American railroads can better afford to carry the goods than not to carry them. Interior producers and border consumers may both be benefited.

Discrimination in favor of exports (or of interior-produced goods marketed on the border) may easily, however, result in national loss to the country whose railroads thus discriminate, since it may result in loss to the railroads. The railroads of a country, acting by common council, would not make discriminating reductions in export rates, which would reduce their revenues. But the same railroads, acting independently, would and do make such reductions, each fearing *diversion* of the traffic to its rivals. Each one dares charge only what the traffic will bear *without being diverted.*[1] And since export traffic

[1] See Chapter II (of Part III), § 6.

is peculiarly subject to competition of routes, what the traffic will bear without being diverted may be very low rates. When the railroads of a country are thus compelled, by competition with each other, to carry export traffic which pays less than its proportionate share towards general expenses and profits, even though this traffic might be made to pay more nearly its proportionate share, there is, in effect, a bounty given to this export traffic. In the long run, if the loss to railroads, in revenue from carrying goods for export, is extensive, intermediate rates must be higher, since railroads will not be built without reasonable prospects of gain. But higher intermediate rates must lessen the profits of internal commerce and tend to discourage it. We have, then, a bounty tending to encourage exports, but imposing additional expense on internal trade, and so turning productive effort out of the channels it would naturally seek, into other and presumably less profitable channels.[1] If the low export rates yield more towards general expenses and profits than higher ones would yield, they are not analogous to a bounty or bounties, and are economically desirable from the standpoint of the exporting country (though not from the standpoint of other countries producing the same goods and competing in the same markets). If the low export rates yield less towards general expenses and profits than higher rates would yield, and, at the same time, yield less than their pro-

[1] To the argument that such discriminating rates might benefit the producers of wheat more than they would injure the railroads (the latter being partly compensated by larger traffic) and might thus bring an average gain, it is to be answered that if wheat production were thus made more profitable, it would be carried on to a greater extent, until, because of consequent lower prices or more intensive cultivation, or both, it would be, at the margin, little or no more profitable than the taxed and discouraged industries at the expense of which it was subsidized.

portionate share towards these expenses and profits, their lowness amounts to a bounty or bounties, and is economically undesirable. It is probable that only in rare cases will discriminatingly low rates in favor of export traffic actually yield more net revenue to the railroads as a whole, than reasonable but not discriminatingly low rates would yield. It is probable, therefore, that discrimination in favor of exports (or in favor of goods carried to border cities where the competition of foreign goods is met) is seldom economically desirable.

On the other hand, exceptionally high rates on exported goods are to some extent comparable, in their economic effects, to high export duties. If the goods exported are goods which foreigners can get nowhere else, the burden of the high rates may be borne largely by them and lower rates than would otherwise be charged may be thus made possible on other traffic. But usually the goods can be secured elsewhere, and the high rates are likely to act like a high restrictive export tariff,[1] in diverting the industry of the exporting country away from the most profitable into less profitable lines.

§ 7

Discriminations between Directions

We have now to consider a kind of discrimination of a somewhat different class from the discriminations which we have so far discussed, viz., discrimination between two opposite directions. Goods are frequently carried, both by rail and water, more cheaply in one direction than the other. The principal reason for this discrimination is an excess of freight moving one way, compared with

[1] See Part II, Chapter IV, § 3.

the movement the other. Freight moving from territory where industry is chiefly of the extractive kind usually has large bulk in proportion to its value. The equivalent value in higher grade goods, which is carried back in exchange, occupies less space. The cars (or vessels) returning may not, therefore, be loaded to their full capacity. Often some returning cars are not loaded at all. Yet they must be returned, even if empty or partially so, for the sake of the outgoing freight. Since the cars have to be taken back, anyway, and since, therefore, the additional cost to the railway is relatively little greater when the cars are loaded (or to a navigation company when the vessels are loaded), it is preferable to carry the freight for a low charge, rather than not to carry it at all. If there is private monopoly or government ownership, the excess of empty cars going in a given direction may not lead to discrimination in rates, favoring that direction, though it is likely to have this effect, as to some of the business, even then; but if there is competition, such discrimination will certainly be practiced. The return trips will be the problem. Each company will be ready to make very low rates, if necessary, on the back hauls, rates which do not even cover the cost of the trips, so long as these rates more than cover the extra cost of moving loaded cars, over that of moving empties; for otherwise the other road or roads will get the business. The freight going in one direction may so tax the facilities of all the roads that rates on this freight will be fairly high; while the scarcity of freight to be carried in the opposite direction, relative to facilities, will induce intense competition and make rates very low. So, in ocean transportation, if a country exports a large quantity of bulky goods and imports relatively less, outgoing rates

will be high, and rates of transportation on imports low. In the opposite situation, a country's imports will cost more to carry and its exports somewhat less.[1]

It is economically desirable, on the whole, that such discrimination should take place. It cannot be said that discrimination in directions is arbitrary or in violation of the principles of cost. For the cars (or ships) would have to be taken to destination and back again, even if freight moved in but one direction. If some freight can be got to move the other way, it must be admitted that part of the cost — so much as would be required to return the cars empty — is joint, or even pertains to the movement in the direction of the bulkier traffic. It would have to be met anyway, and cannot properly be said to be due to the taking of return freight. Freight moving in the direction which the empty cars have to take should be carried at rates little above the difference between the cost of hauling the cars empty and the cost of hauling them full, plus terminal expenses, etc., rather than to be refused. Not to carry such freight is to waste labor and facilities which might be utilized, and to leave less than it might be, the total national wealth. On the other hand, freight moving in the opposite direction, to the extent that it involves hauling cars (or taking ships) which must return empty, really imposes upon the labor force of the community the cost of hauling the cars both ways, and should not be taken at rates less than sufficient to cover this cost. Otherwise, freight may be carried for less gain to the community than it imposes cost upon the community. If, therefore, there is so much freight ready to go in one direction even at rates which pay

[1] Cf. J. R. Smith, *The Organization of Ocean Commerce*, Philadelphia (Publications of the University of Pennsylvania), 1905, p. 17.

enough to cover the return haul of the cars empty, that returning freight cannot be secured at the mere additional cost of hauling loaded cars, to fill these empties, then no freight ought to be taken in the direction of the denser traffic, which will not cover the return-of-cars cost, nor can be so taken without risk of economic waste. So far as discrimination of directions causes a greater equalization of opposite flows, it serves to utilize more fully the facilities which are utilized at all, without proportionately increased expense, and so makes the national capital and labor force more productive.

§ 8

Summary

In this chapter our concern has been mainly with discrimination between places, in so far as this discrimination can be defended, on economic grounds, as conducing to national prosperity. We saw, first, that discrimination by a roundabout line in favor of through traffic and against intermediate traffic, might be economically defensible. It may be the truest economy that some of the through traffic should go by a roundabout line, yet this through traffic is entitled to rates as low as a more direct line could profitably make. Also, though the roundabout line cannot always afford to make correspondingly low rates on intermediate traffic, it may be to the advantage of intermediate cities on its line that it should take the through traffic at rates which at least help pay general expenses and profits. The possibility of getting part of the competitive traffic encourages the building of roundabout lines which bring intermediate points into touch with the competitive points.

But when charges on competitive traffic are so low as to necessitate discrimination against intermediate traffic on direct roads as well as indirect, there is economic waste, and competitive points are receiving advantages to which they are not properly entitled. If government regulation is to attempt to raise, in this regard, the plane of competition, the ideal is to prohibit discrimination against intermediate points on direct roads, while allowing roundabout roads to discriminate to a limited degree. The aim should be so to balance the limitations on competing roads as not to interfere with the economical routing of freight or with the building of roundabout lines in cases where these are more needed. In no case should a roundabout line be allowed to carry competitive traffic for less than the additional cost involved, or to make rates on non-competitive traffic so high as to get more than a reasonable return, from that traffic alone, on the capital required for it. In many cases the discrimination allowed to the roundabout line should be much less. The carrying of a part of import and export traffic by roundabout routes may be defended as not economically bad, even though it involves relatively discriminating rates by these longer routes in favor of import and export freight.

But, on the other hand, if traffic on a direct road is relatively light, so that its average rates must be high, while a more roundabout road has heavy traffic and low rates, the direct road may be the one which should be allowed to discriminate in order that it may carry a share of competitive traffic.

Discriminating rates by a railroad or railroads may be justifiable in cases where the low rates favor points competitive with water lines as against points situated

on rail lines only. The railroad plant is desired for the intermediate traffic alone. The additional cost of carrying competitive traffic which could go by water may be so little that it is more economical to carry it by rail than to construct the additional ships necessary to carry it. A consideration of the effect of this discrimination, on the various interests concerned, strengthened our conclusion that such discrimination might often be defensible and even desirable. Its practice is seen in the case of transcontinental rates made by American railroads, favoring coast to coast and nearly coast to coast transportation as against intermediate. But a railroad which carries goods for less than the bare additional cost of so doing, in order to ruin a competitor by water, is engaged in illegitimate competition.

Discrimination may sometimes be practiced with desirable results in favor of transportation which is competitive with local self-sufficiency. If goods can be carried to a given point and sold there for less than the cost of local production, there is a saving, even though these goods pay very little more than the special cost incident to their transportation, *i.e.* even though they contribute very little towards general expenses and profits. If the plant is there, it is better to utilize it on these terms than not to utilize it.

The total wealth and income of a nation may be increased, under certain circumstances, if its railroads discriminate in favor of export traffic, or, likewise, in favor of traffic to border cities where the competition of imported goods is met. Such discrimination is advantageous when the lower rates yield, for native railroads taken as a whole, so much larger traffic than higher rates, as to make the net earnings of transportation greater. To

thus increase the export business of the railroads, the lower rates must yield some benefit to producers for export. So far as diversion of the goods to a foreign market raises domestic prices of those goods, domestic producers gain as much as domestic consumers lose. There is a net national gain, though rival producing countries may lose. But when competition between a country's railroads brings discrimination in favor of export traffic which would otherwise yield larger returns, the discrimination amounts to a bounty on exports at the expense of the railroads and, perhaps, ultimately, at the expense of other trade. Industry is turned from more to less desirable channels. Discrimination against exports, unless the exporting country is the only considerable source of supply, is likely to interfere with a profitable export trade, and turn the nation's industry into less profitable lines.

Discrimination between two opposite directions may result from an excess of bulky traffic moving in one direction, over that moving in the reverse direction. This discrimination is economically desirable, within reasonable limits, since it causes fuller utilization of the facilities required. When cars (or vessels) must be taken to a given point, whether empty or full, it is better to accept traffic at little more than the added cost of taking them full, than to refuse this traffic.

CHAPTER VI

Relative Rates on Different Goods

§ 1

Why Rates on Competing Goods should be in Proportion to Transportation Cost

Having completed our discussion of local discrimination, we have now to consider discrimination, if we may here also use the term, in the rates charged for carrying different kinds of goods. As in the two previous chapters, we shall apply the test of general economic welfare to transportation practices.

It is not always easy in any given case, perhaps not always possible, to decide how much one kind of goods should be charged, relatively to the charge made for carrying other kinds. Nevertheless, we can lay down important principles to which the relation of rates should conform. In looking at the matter of relative rates among different goods, from the point of view of general community welfare, the following principles are those which, it is believed, should be kept particularly in view. In the first place, the rates charged should be such as will, all things considered, get industry into and keep it in the most profitable lines or channels. Second, the rates charged should lead to the most economical location of each kind of industry. In the third place, these rates should be the ones which will result in the com-

pletest profitable utilization of the transportation plant. Let us consider these principles in this order.

That industry may be kept, on the whole, in the most profitable lines, some regard must be had, in carrying goods, to the cost of carrying. A transportation company will naturally consider costs of carriage in fixing its rates, even though part of these costs cannot be allocated. At least it will refuse to transport any goods, during any considerable period, for less than the special or additional cost incident to carrying them. Many things will pay more. But nothing will pay less. Cost of transportation is, therefore, one element in fixing the relative charge on different kinds of goods.

Under the head of cost come many special considerations, for example, the hazardous nature of the service. Upon such articles as gunpowder, dynamite, nitroglycerine, etc., higher rates are likely to be charged than upon many articles of similar size, weight, and value, which are non-explosive. Not only may the explosives themselves be destroyed in transit, but they may destroy other property. The greater risk in carrying them is in the nature of a cost.

Space occupied, or size and bulk of freight carried, is another factor in cost. Even if the goods to be carried are extremely light, the fact that they require large space necessitates the use of cars in perhaps considerable numbers. This means that a considerable weight of trucks, car floors, walls, etc., must be carried to accommodate the freight. It means, also, that the car repair account will be larger, as well as that more cars are required on which interest should be earned. It follows that space occupied determines, in part, the cost of

carriage. The weight of goods to be carried is, of course, also a factor in cost, and tends to affect the rates charged. Goods which are liable to spoil in transit, or which, for any other reason, require special care, cost more to carry. All these elements should and largely do influence railroad officials in their classifications of freight.

A special case is found in the shipment, on water routes, of goods which can be used as ballast. Such goods serve, in part at least, as an assistance (by steadying ships) in the carriage of other goods. By so doing they may be said to partly pay their own cost of transportation, and the *net* cost of carrying them may be said to be low. A low rate of transportation can, therefore, be afforded by ship-owning companies on such goods. British coal is said to be thus carried, as ballast cargo, at low rates.[1]

The principle that rates should be such as to keep industrial effort in the channels most profitable to the community requires that rates on different commodities shall be in reasonable proportion to cost of carrying, whenever these commodities can be regarded as competing goods, *i.e.* as goods which may be substituted for each other by consumers or other purchasers. Examples are Pearline and laundry soap,[2] Wheatena and Cream of Wheat, brick and stone for building. It will be seen that if the cost of carriage is the same, a higher charge for carrying stone than for carrying brick may involve economic waste, since it may cause brick to be used for building in places where stone would be on other accounts

[1] J. R. Smith, *The Organization of Ocean Commerce*, Philadelphia (Publications of the University of Pennsylvania), 1905, p. 17.

[2] See Interstate Commerce Commission Reports, Vol. I, pp. 465–479.

more desirable. If the higher rates merely paralleled a higher labor cost of transportation, uneconomy could not be alleged, since these rates would but bring to the attention of builders a real economic disadvantage of using stone. Without the higher rates, the public would be unduly encouraged to use materials which, in so far as transportation is concerned, cost more than others. But if the economic disadvantage does not exist, rates which make it seem to exist, and which make men act as if it existed, are economically bad. The decision what to use among competing goods, and therefore how much of each kind of such goods should be produced, and, therefore, *the lines of production which industry should follow*, ought to be determined on the basis of all the advantages and disadvantages of each kind of such goods, including cost of production and cost of carriage. In order that all of these elements may enter properly into the consideration of the users, and so exercise their due influence on the lines of activity of the producers, the users should be charged for each kind of goods proportionately to the actual labor (and waiting) costs, including transportation, of providing them with the goods, just as the consumers realize gains from these goods proportionately to the serviceability of each. Section 3 of the Interstate Commerce Law prohibits undue discrimination not only in favor of any locality or person but also in favor of any particular description of traffic. In determining, in any specific case, whether the discrimination complained of is undue, the Interstate Commerce Commission does not fail to consider the competitive relations of the goods discriminated against.[1]

[1] *Ibid.*

§ 2

The Proper Relation of Rates on Finished Products to Rates on Raw Materials

In order that there may be the most economical location of different manufacturing industries, regard must be had to the relative charges on raw material and on finished product. For example, consider the rates on wheat compared with those on flour and the rates on lumber compared with those on furniture. If the transportation charge on wheat from the West were much lower than the charge for transporting flour, then all the milling of flour for eastern use would be done in the East. In the Export Rate case,[1] it was shown that the rate on wheat for export was considerably lower than on flour. This would tend to stimulate milling abroad, since it would be cheaper to pay the low rate on wheat than the high rate on flour. On the other hand, a much lower rate on flour than on wheat from the West would perhaps ruin eastern millers and cause flour to be manufactured almost entirely near the wheat fields. The milling should be done, of course, where all the facilities and conditions, including actual labor cost of transporting the wheat, and cost of transporting the flour, are the most favorable in relation to the facilities and conditions for other industries. The transportation companies should not unreasonably discriminate in favor of either the wheat or the flour. Flour has more value, and may, therefore, involve greater risk of loss. Possibly the cost of carrying may be greater.[2] It may be permissible that the charge for transporting flour should

[1] Interstate Commerce Reports, Vol. VIII, pp. 214–276.
[2] *Ibid.* pp. 244–246.

be somewhat greater than the charge for transporting wheat. But if so, it should be greater only to the extent that such special facts justify. Such is the position which the Interstate Commerce Commission takes in applying the law to specific cases.[1]

Perhaps a sharper distinction between raw material and finished product is found in the case of lumber and furniture. Furniture is much more valuable and is more liable to breakage. It occupies, generally, more space in proportion to its weight. A higher charge on the furniture is therefore entirely proper. But the relation between the charges for lumber and furniture transportation should not be more favorable to lumber than such considerations warrant.

§ 3

When Rates may Properly be Lower on Some Kinds of Goods than on Others, in Relation to Cost of Carriage

We have now to give attention to the third test of relative rates charged for carrying different goods, viz., the question of completest utilization of transportation plant. The desirability of utilizing transportation plant as completely as possible may justify a lower rate on the product of one industry than on the product of another, even though the special or additional cost incident to carrying them is the same for both. For the one kind of goods may require a low rate in order that it shall be carried at all for any great distances, while the other kind may be able to pay a higher rate. Thus, a high rate to a given place, on goods which could be produced locally, would mean that the transportation com-

[1] *Ibid.*

pany charging such rates might get no traffic at all in those goods, whereas it could charge reasonably high rates upon goods which had to be secured from elsewhere, without sacrificing traffic.[1]

Even some goods which are not locally producible may have to be brought to a market cheaply, because otherwise locally produced substitutes will be used. The rate on building stone carried to a given locality may need to be low because brick can be produced there, and because, consequently, if the rate on building stone is not low, it cannot be carried. The low rate makes possible a larger total traffic, a more complete utilization of transportation plant; and, therefore, if the rate charged pays anything above the special cost of carrying, the traffic is worth while. It is better that some goods should be carried, even at less than average rates, if the charge amounts to something over the special cost of carrying, than that these goods or substitutes for them should be produced locally, and the transportation plant be incompletely utilized. The revenue so yielded to transportation companies makes possible, if they will it or can be compelled to it, lower charges for the carrying of other goods, than they could else afford; or it makes possible, because profitable, the construction of transportation lines which otherwise would not pay, and, therefore, makes possible transportation service for other goods also, between points where such service would not otherwise exist.

An analogous argument applies, to some extent, in defense of low rates on railroads favoring goods which are especially likely to go by water. For if a railway plant is necessary, anyway, between two given points, and is

[1] Cf. Chapter V (of Part III), § 5.

desired for certain kinds of through traffic, it may be better to use it for some other through traffic also, rather than to invest additional social capital in ships.[1]

There is nothing in the above conclusions inconsistent with the conclusion reached earlier in the chapter, that arbitrary discrimination between goods is uneconomical. Lower rates proportionate to special cost of carriage, on stone for example, than on most other things, have been justified only if they increase traffic without proportionately increasing cost. Lower rates on building stone, proportionate to special cost of carrying, than on brick, between two given points, would not thereby be justified, since such a relationship of rates would probably mean, not that more goods would be transported, but that building stone would be carried *instead of brick*. Lower rates on both than on most other goods, necessitated by a possibility of local production of either, would be justified. The question to be considered in each case is whether total traffic is considerably increased, or whether freight of one kind is substituted for freight of another kind. In some cases, of course, goods are used for different purposes, but are substitutes to a limited extent. Rates should then be fixed with reference to both the above principles and with a view to a balance of advantages.

Similarly in the case of relative charges on raw material and finished product. Except in so far as there may be non-transportable waste, discrimination in favor of either cannot be expected to result in larger total traffic, but only in traffic of one kind instead of traffic of another kind. High rates on flour mean that wheat will be transported instead. High rates on wheat mean

[1] *Ibid.*, § 4.

that flour will be transported instead. The situation is complicated, of course, in the case of certain materials, such as leather, which are raw material for many different articles, *e.g.* shoes, suit cases, harness, etc. Since the leather is raw material for one of these uses only to a limited extent, the transportation rate may properly be determined in part by other considerations than its relation to a single finished product.

But considerations regarding utilization of transportation plant may justify, in some cases, somewhat lower rates per ton on raw material than on finished goods, even though the special or additional cost per ton, incurred because of carrying the raw material, is no less. Suppose that, in the production of certain kinds of finished goods, much of the raw material necessarily goes to waste, so that the total weight of material is much less after the process of manufacture is complete. The same rate per ton on the finished goods as on the raw material would then encourage manufacture of these goods near the source of the raw material, instead of near markets far distant from the raw material. A transportation company could, however, in some cases, well afford to make somewhat lower rates per ton on the raw material, if, by so doing, it could get the much larger number of tons to carry. The result would be a more complete utilization of transportation plant and a greater net profit. The rate on raw material should be high enough so that, if more of it has to be transported, the total charges would be greater by enough to cover the greater special cost of its transportation. In other words, the rate on the raw material should at least be high enough so that the net profit from its transportation would be as great as it would be if the finished

product were carried instead. Otherwise the manufacturing industry served would tend to be located far from the raw material, at the expense of the transportation line and at a greater labor cost for transportation, even though the far location offered no advantages sufficient to counteract this loss. If the manufacturing industry itself had to bear this transportation labor cost in the freight rates it paid, it would not locate far from the raw material needed, except for compensating advantages. But to make the charge for transporting raw material as great per ton as for transporting the finished product, when to do so means to get a less total traffic, may unduly stimulate the location of manufacturing near the raw material under circumstances such that, all things considered, including the matter of utilization of transportation plant, location of some factories near markets far away from the source of raw material would be more economical.

The desirability of utilizing the transportation plant is the consideration which justifies, economically, relatively lower rates on cheaper goods and relatively higher rates on more valuable goods,[1] when the special or additional cost of carrying them (*i.e.* terminal and train mileage costs incident to taking them) is the same for both. Valuable goods can usually be charged more by bulk or by weight, without the price of these goods being raised by any appreciable per cent., and, therefore, without the sale of the goods in distant markets being destroyed or seriously limited. But rates on coal, lumber, brick, stone, and other low-grade goods cannot be, for

[1] Hadley, *Railroad Transportation*, New York (Putnam), 1885, p. 112; Ripley, *Railroads, Rates and Regulation*, New York (Longmans, Green, and Co.), 1912, p. 110.

shipments over long distances, correspondingly high per ton mile. If they are, the prices of the goods will be raised so much that consumers in distant markets will supply themselves with the desired goods or with substitutes from nearer home, and the railroad transportation plant may not be as fully utilized as it profitably might. Ten dollars a ton for transportation to a given market, added to the price of shoes, makes little difference to the average purchaser of one pair, since the price of one pair (supposing it to weigh two pounds) would have to be greater by just one cent. Nor would so slight a proportionate addition to the cost of getting the shoes from a distant factory be likely to make local production preferable where other industries would otherwise be more profitable. But ten dollars per ton added to the price of coal would very greatly diminish the transportation of coal, since every other practicable method of getting heat or power would be likely to be resorted to in preference to purchasing coal from a distance at a price of from $12 to $15 a ton. In the case of low-grade goods, the traffic will often bear but a low rate without being destroyed. In the case of high-grade goods, the traffic will bear, as a rule, higher rates.[1] An addition to rates, per ton or per carload, does not, within wide limits, so much affect the total transporta-

[1] The view that competition between two or more railroads, by putting emphasis on what the traffic will bear without being *diverted*, or, as the writer then phrased it, on *relative* responsiveness of traffic, would tend to keep rates on valuable goods about as low in relation to cost of carriage as on cheaper goods, was set forth in the *Yale Review*, May, 1907, in an article on The Basis of Rate Making as Affected by Competition *versus* Combination of Railroads, pp. 83–85. Cf. Pigou, Railway Rates and Joint Costs, *Quarterly Journal of Economics*, August, 1913, p. 691. But, as is shown in the text, where the competition is with local self-sufficiency the lower grade goods are likely to be accorded lower rates.

tion business. It is desirable that the transportation plant should be fully utilized, so far as it can be without loss, and it is therefore desirable that rates on low-grade goods should be low enough, provided not unprofitable, to get the business. Considerations of profit are likely to cause railroad companies to put these low-grade goods into the lower classes of freight, on which the rates are most reasonable, or even, in many cases, to carry them at special "commodity rates" instead of at regular "class rates."

It may be added that the practice of charging more for carrying valuable than for carrying cheap goods is not confined to railroads but is observable also in water transportation on regular-line vessels,[1] since these vessels carry cargoes made up of many different kinds of goods.

But the question may arise, how the relation of rates charged for the transportation of different kinds of goods should be fixed, if the profits of a transportation company are excessive and the public is entitled to a lower average of rates. Should there be a blanket reduction applying to all goods equally, or should some rates be reduced more than others, or should some rates be reduced and others not?

Let us suppose that the profits on the capital investment of a certain railroad are 20 per cent. a year and that it is thought just to reduce rates and, therefore, profits, by public authority. We may assume that the only goods carried by this railroad are wheat and coal, that the rates charged on each are the rates yielding the largest net returns, and that the traffic offered at those rates does not fully utilize the railroad plant.

[1] J. R. Smith, *The Organization of Ocean Commerce*, p. 46.

The question then is: on what goods and to what extent shall reduction be required? It may be that a reduction in the rate charged for carrying wheat, of 10 per cent., would increase the traffic in wheat by but 1 or 2 per cent., whereas, a reduction in the rate charged for carrying coal, of 10 per cent., would increase the coal traffic by 8 per cent. Obviously a 10 per cent. reduction can then be required on coal without so greatly decreasing the railroad's net profits as if the reduction were required on wheat. Or a greater reduction can be required on coal than on wheat, without occasioning correspondingly greater loss to the railroad. The public may derive a larger gain and the railroad, at the same time, suffer no larger, and perhaps a smaller, loss of net revenue. A part of the gain of shippers and consumers is at the expense of the railroad, but a part of it flows from the fuller utilization of railroad plant and so represents a net economic gain to the community. Such an adjustment of rates might, therefore, be not undesirable. But the coal should under no circumstances be carried at a loss, for that would encourage transportation not worth its cost. Nor should rates on wheat be higher than would pay a fair return on the railroad plant and equipment necessary to transport the wheat only, for that would involve an arbitrary taxation of wheat shippers and consumers in favor of shippers and consumers of coal. It may, perhaps, be justifiable that the advantages of the larger scale transportation should show themselves entirely in the reduced coal rates. But it would not be justifiable to make the wheat rates higher, because coal traffic is also available, than if wheat alone could be carried.

On the other hand, if the railroad plant in question is

already pretty fully utilized when it is proposed to reduce rates, and cannot accommodate much more traffic, the reduction may, perhaps, no less advantageously be made on the wheat. At any rate, increased coal traffic should not be developed at rates lower than would pay reasonable returns on any additional plant thus made necessary.

It is obvious that similar considerations may deserve attention when the railroads propose rate advances and seek the consent of the Interstate Commerce Commission to put such proposed advances into effect.[1]

Whether voluntary or forced, a special rate reduction on favored goods is only justifiable if total traffic is thus increased. A reduction in the charge for carrying stone from a quarry to market might be economically defensible if it meant less community self-sufficiency, more persons engaged in producing for a distant market, consequent greater total trade, and more transportation. But economic justification would be lacking if the result of the reduction was that the quarry company, instead of adding to the total transportation business of the reducing railroad, merely drew into its quarries the sons and hired men of neighboring farmers, who would otherwise be devoting their entire labor time to providing the railroad with traffic in wheat. In such a case, discriminating reduction would tend to divert the industrial effort of the locality concerned, from more to less desirable channels. The reduction, if desirable, should then be general and not discriminating.

[1] See Bauer, Returns on Public Service Properties, *Political Science Quarterly*, March, 1915, pp. 106–133, especially pp. 116, 117.

§ 4

Summary

We conclude, then, that discrimination between different kinds of goods should not be arbitrary, but may, under certain circumstances, be economically defensible. When goods are competitive, higher rates should not be charged for carrying one kind the same distance and to the same market as another kind, unless the actual transportation cost is greater, since such discrimination in rates tends to divert industry from a more into a less profitable channel. Neither should arbitrary discrimination between raw materials and finished products be allowed to force manufacturing industries into locations where there is relative uneconomy of labor. But lower rates on some goods than on others may be justified in certain cases where the above evils are not likely to result, and where more complete utilization of the transportation plant is thus secured. And in reducing rates when profits are unduly high, regulating bodies may, with propriety, give attention to the probable effects on traffic of reductions in the charges for carrying different kinds of goods.

CHAPTER VII

Discrimination among Shippers

§ 1

Methods of Practicing and of Concealing Discrimination among Shippers

Having discussed discrimination among different places and among different kinds of goods, we have next to consider discrimination among different shippers, among different persons, or corporations. This kind of discrimination has been, with the railroads of the United States, very common, and as a matter of fact, is still in some degree practiced. Yet it is pretty generally objected to as unfair, is perhaps, of all kinds of discrimination, most repugnant to the ideals of a democratic people, and is, for American railroads,[1] definitely illegal and punishable. Discrimination among shippers is practiced also to some extent in ocean transportation by regular-line vessels.[2] The conditions tending to produce

[1] Or a railroad and a water line when they are operated "under a common control, management, or arrangement for a continuous carriage or shipment."

[2] Huebner, Report on *Steamship Agreements and Affiliations in the American Foreign and Domestic Trade*, in Proceedings of the Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations, 1914, Vol. IV, pp. 236, 237.

As the time for sailing draws near, a line vessel will sometimes accept very low rates rather than start with a very small cargo, while it will charge fairly high rates if its space is nearly taken. It may charge different rates to the very same person on different consignments of goods. (See Interstate Commerce Reports, Vol. XI, p. 24.) This, in itself, is not objectionable. Persistent and intentional favoritism is so. (See § 4 of this Chapter, VII of Part III.)

discrimination among shippers are hardly to be found in the case of charter traffic. Competition of tramp vessels insures reasonable rates to all shippers or groups of shippers able to charter a vessel; and one shipper would not often be favored, intentionally, with low charter rates, so long as others were ready, singly or jointly, to charter the same vessel and pay higher rates. Perhaps for this reason there has been more of a tendency to let competition on waterways take its course unregulated, though the evidences seem to be increasing that regular-line companies are comparable, in many respects, to railroad companies, are similarly subject to monopoly control, though perhaps not to the same degree, and may need to have their practices investigated with a view to regulation.

The popular opposition to discrimination among shippers, and the fact that legislation has forbidden railroads[1] to practice it, combined with a frequent wish that rival transportation companies should not know what is being done, have caused discriminating rates to be given and received in underhanded and evasive ways. In such ways the Standard Oil Company seems to have received transportation rate favors in recent years. Thus, it was shown by a government report[2] in 1906, that this company was advantaged by lower rates made from points where it alone had refineries than from points where there were refineries of independent firms.

Various devices have been used to insure secrecy, such as blind billing, false billing, failure to post and file

[1] Or railroads and water lines when the two modes of transport are operated "under a common control, management or arrangement, for a continuous carriage or shipment."

[2] Report of the Commissioner of Corporations on the *Transportation of Petroleum*, 1906.

rates, naming rates for goods transported in one kind of car while carrying the same goods more cheaply in another kind of car, etc. The lowest published rate on oil from Pennsylvania refining points into Vermont in 1904, was 23½ cents per hundred pounds. The Standard Oil Company, however, reached these points from its refinery at Olean, N. Y., by way of Norwood, N. Y., for from 15.3 to 16.9 cents per hundred.[1] The combination of rates under which this company's oil was shipped consisted of, first, a secret rate from Olean to Rochester, over a part of the Pennsylvania lines, a rate neither filed nor posted, and used in connection with blind billing;[2] second, a rate of 9 cents per hundred pounds over the New York Central road from Rochester to Norwood; third, low rates over the Rutland and Central Vermont railroads. Copies of the blind waybills of the Pennsylvania Railroad gave evidence that a large number of cars ostensibly billed to Rochester were really destined to places in Vermont. There was apparently a pretense that the traffic was intrastate, in order that there might be an excuse for the failure to file and post the rates in accordance with the Federal law on interstate transportation. The open tariff rate of the Rutland Railroad Company, on oil in barrels, from Norwood, N. Y. to Burlington, Rutland, Bellows Falls, and other Vermont points, was 33 cents per hundred pounds. But it appeared that the Rutland had, to these three points, from Norwood, in connection with the Central Vermont Railroad, very low tank car rates of $23, $28, and $30, respectively, per tank car; and it appeared, also, that for

[1] *Ibid.*, pp. 92–112.

[2] That is, the waybills omitted, in each case, a statement of the rate and of the total amount of the freight charge.

some time there had been no limit on the size of tank cars so used. Investigation showed that the tank cars sent to the above-mentioned three places from the Pennsylvania system were large, having an average capacity of 60,000 pounds. The average rate per hundred pounds in these tank cars was, therefore, between less than 4 and 5 cents, instead of 33 cents as in barrel shipments. Independent shippers had repeatedly asked for rates into Vermont, but had never received information of these low tank car rates.

The Standard Oil Company, it was shown in the same government report, got entrance to southern territory, from its great refinery at Whiting, Ind., largely via Grand Junction, Tenn. There was a rate filed reading only to Grand Junction.[1] There was no tariff of the Southern Railway, reading from Grand Junction to other destinations, filed with the Interstate Commerce Commission. The officers of the Southern Railway Company claimed that they believed they were merely collecting their proportion of a through rate published by the other roads. Whatever the facts as to this contention, the low rate was not practically available to other shippers than the Standard Oil Company.

But the rate based on Grand Junction was effectively secret for another reason.[2] Though the 13-cent rate as far as Grand Junction was filed with the Interstate Commerce Commission, yet this rate was not made to read from Whiting, Ind., where the Standard's refinery was located, nor from Chicago, Ill., just across the state border, but from insignificant near-by towns. Thus,

[1] Report of the Commissioner of Corporations on the *Transportation of Petroleum*, 1906, p. 250.

[2] *Ibid.*, pp. 268, 269.

the tariff of the Illinois Central Railroad, naming the 13-cent rate, read from Riverdale, Ill., and the later tariff of the Chicago and Eastern Illinois, from Dolton, Ill., both of these places being obscure junction points in the Chicago switching district. An independent shipper would naturally inquire the rate from Chicago to southern cities, not the rate from Riverdale or from Dolton, and in fact, the Chicago and Eastern Illinois Railroad itself, when the Bureau of Corporations (carrying on the investigation preparatory to its report) asked for the rates from Whiting to numerous points in the South, made no reference to the Grand Junction combination, but reported, in writing, rates based on Evansville. Both the Chicago and Eastern Illinois Railroad and the Illinois Central Railroad practiced blind billing.

Another method of discriminating without seeming to do so is by the use of a so-called industrial railroad. A manufacturing concern has constructed about its plant a few thousand feet of trackage. The ownership and control of such trackage is vested in a "Railroad Company," which in turn is owned by the manufacturing concern. Then the diminutive railroad system or company is allowed, by other railroads, a share of the through rate to destinations, in excess of the real value of its services. In the ultimate analysis, the manufacturing corporation receives the real benefit, and, in effect, pays lower rates for transportation than do its rivals.

A case decided by the Interstate Commerce Commission in 1904 supplies an illustration [1] of discrimination so brought about. It was shown, in this case, that the International Harvester Company owned the capital

[1] Interstate Commerce Reports, Vol. X, pp. 385–404.

stock of the Illinois Northern Railroad, and a controlling interest in the Chicago, West Pullman and Southern Railroad Company. These two railroad companies were terminal connecting roads operating in and about the city of Chicago between the plant of the Harvester Company and various railroads and other industries. Until about the time of the complaint before the Commission, these terminal roads had received, for their services, switching charges of from $1 to $3.50 per car. But this allowance had been increased, until it came to be a division of the through rate to destination, amounting sometimes to 20 per cent. of the rate, or $12 per car of 20,000 pounds, instead of the former maximum of $3.50. These high charges were regarded by the Commission as unlawful discrimination in favor of the International Harvester Company, and were, therefore, forbidden.

§ 2

Competition of Transportation Lines as Causing this Discrimination

What is to be said as to the causes of discrimination among shippers? Competition of transportation companies, *e.g.* railroads, with each other, the fear of each that it will lose large traffic to its rivals, is generally put forth as the principal explanation. It is a case of charging what the traffic will bear. And it is a case of charging what the traffic will bear without being diverted; not what it will bear without being destroyed. This seems to mean special concessions where there is special fear of large diversion of traffic to rivals. One might suppose that competition would mean lower rates to all shippers rather than to a favored few only or to one.

Two reasons may be suggested to account for the fact that reductions are made to some shippers and not to others. In the first place, the transportation company making the special rate is anxious that rivals shall not know of it lest these rival transportation lines get the traffic by offering as low or lower rates. But if the reduction is general, it is soon known to rival lines. In the second place, reductions are made to the very large shippers through fear of losing their traffic. There is much less fear of losing the business of small shippers, because this business is looked upon as relatively unimportant. And it is to be noted that what the large shipper wants and is likely to insist upon, if he feels his power sufficient, is not merely *low* rates, but a *difference* in rates between him and his competitors. If a large shipper, controlling $\frac{4}{5}$ of the business in any kind of goods, while the remaining $\frac{1}{5}$ is produced by scattered independents, threatens a railroad company with entire loss of patronage unless the railroad company will discriminate secretly in his favor, the railroad is likely to be frightened into submission. It may not have to submit to live, but its officers think submission will bring greater profits than refusal. Hence they agree to special rates which the scattered independents may not enjoy. At one time (1885) the Standard Oil Company paid 10 cents a barrel to have its oil carried a given distance on the Cincinnati and Marietta Railroad, while its competitors were required to pay 35 cents. As if this were not discrimination enough, the excess 25 cents charged to its rivals was to be turned over to the Standard Oil Company.[1]

[1] Tarbell, *The History of the Standard Oil Company*, New York (McClure Phillips and Co.), 1904, pp. 77–86.

In order to prevent competition from taking this form, the law has to provide and enforce severe penalties, just as it has to enforce penalties against "competition" which takes the form of killing a competitor, or destroying his property, or misrepresenting his goods, or using child labor. Under section two of the Interstate Commerce Act, discrimination between shippers is illegal by whatever special rate, rebate, drawback, or other device it may be brought about. The Interstate Commerce Commission has authority over rate practices and can investigate cases where discrimination is suspected. Furthermore, the Elkins law of 1903, as amended in 1906, makes both the giving and the receiving of a concession from the published rate a criminal offense.

It is not intended to assert that lower rates per hundred pounds should not be charged on large shipments than on smaller ones, to the extent that the larger shipments are carried at proportionately less cost by virtue of their concentration. That the rate should be lower on carload than on less than carload lots, is generally recognized. There may be equal justification for a somewhat lower rate, per hundred pounds, on trainload than on carload lots, provided that the difference is not excessive and that the lower large-scale rates are open to all shippers alike on equal terms. But it is hard to believe that any saving in the handling of large lots is sufficient to justify such discrimination as that above mentioned, where one company paid 10 cents for a service that others could get for not less than 35 cents, and had its 10-cent rate reduced by getting the surplus 25 cents on all others' shipments.

§ 3

Other Causes of Discrimination among Shippers

Other influences than competition of transportation lines may cause discrimination among shippers. With or without competition, there would be likely to result discrimination in favor of industrial concerns in which some of the principal stockholders or some of the directors or important officials of transportation companies have financial interests. That the principal stockholders and directors in some big industrial concerns which have received such favors are also largely interested in railroads, is generally recognized. But there appears to be no instance of discrimination among shippers where the discrimination has been definitely traced to this cause.

A special report[1] of the Interstate Commerce Commission in 1907, however, presented evidence showing that the Pennsylvania Railroad system had discriminated in its allotment of cars in favor of coal companies in which some of its officials were interested. These officials had in some cases bought their stock in coal companies, had in other cases obtained it mainly by promoting or allowing their names to be used in promoting said companies, and had in still other instances been given the stock outright by promoters.[2] It appeared that during a period of six weeks in the early part of 1903, when coal was in great demand, a large number of mines on the Pennsylvania system were left without any car supply whatever. So far as could be learned, however,

[1] *Discrimination and Monopolies in Coal and Oil*, Special Report by the Interstate Commerce Commission, 1907.

[2] *Ibid.*, p. 23.

no mine on the Pennsylvania system, in which an officer of that company was interested as a security holder, was left, during the period in question, without car service.[1]

Discrimination in fact, if not in form, is likely to result when a transportation line, as a corporation, owns a producing company or the securities of a producing company. Under such circumstances may come the temptation to the transportation line to make rates which will drive out independent producing concerns. It is to be noted that discrimination so caused can be at its worst when there is monopoly of transportation. When competition exists, the independent producing firm, if denied reasonable rates by one line, has at least a recourse to that line's competitors and may ship by the line offering the lowest rates. When there is transportation monopoly, high rates to independent producing firms may drive these firms out of business, establishing in complete control the subsidiary corporations through which the transportation line (or lines) carries on industrial ventures. It is not even essential that the rates should be nominally higher for the independent firms than for those producing corporations which the transportation company owns. It matters not how high rates are made for a subsidiary company owned by a transportation line. Whatever such a dependent company loses in having to pay higher freight rates, the transportation line which owns it gains. It matters not how much a company pays for any service, when it only pays itself. But it does matter to independent companies how high rates they must pay. High rates

[1] *Discrimination and Monopolies in Coal and Oil*, Special Report by the Interstate Commerce Commission, 1907, p. 63.

to them mean loss of profits and mean ultimate bankruptcy. Discrimination caused in this way is asserted, in government reports,[1] to have been practiced by the railroads serving the anthracite coal mines in and near Pennsylvania. The effect seems to have been to force out independent mining concerns and to enable the railroads to get possession of many anthracite coal mines.[2]

§ 4

The Practice of Discriminating among Shippers, Tested by the Principles of Industrial and Commercial Ethics

It has already been suggested that somewhat lower rates for large shipments than for small ones may often be defensible if open to all alike. So far as there is a real saving to a transportation company, in taking for shipment a large quantity of any goods at a time, it is proper that rates should be so adjusted as to encourage large shipments. But arbitrary discrimination among shippers, *i.e.* favoritism, by transportation lines has nothing whatever to commend it. It tends to build up private monopolies. It injures consumers. It violates the principles of industrial and commercial ethics.

That discrimination among shippers tends to build up monopolies and to force out would-be competitors

[1] 2d Session, 52d Congress, H R. 2278, pp. iii, iv, and vi; also Industrial Commission Reports, 1902, Vol. XIX, p. 462.

[2] The "Commodity Clause" of the Hepburn Act of 1906, which was intended to make impossible this ownership by railroads, of producing companies or of goods transported (with the exception of timber and its manufactured products), has been so interpreted by the Supreme Court as to make it of doubtful importance. See *United States* v. *Delaware and Hudson Company*, 213 U. S., 366; *United States* v. *Lehigh Valley Ry.*, 220 U. S., 257; *United States* v. *Erie Ry.*, 220 U. S., 275; *United States* v. *Delaware, Lackawanna and Western Railroad Co. and the Delaware, Lackawanna and Western Coal Co.*, 35 Supreme Court Reporter, 873.

is too obvious to require much further proof. The company which has to pay a higher freight rate is disadvantaged to that extent in the struggle to make a low price to the consumer while yet disposing of its goods at a profit.

The railroads (or navigation companies), taken as a whole, have nothing to gain by favoritism. They do not have greater traffic in any commodity, *e.g.* they do not have greater traffic in oil, merely because by favoritism they have enlarged one shipper's business, while simultaneously ruining other shippers. Thus, the railroad plants are not, taken as a whole, more fully utilized by such discrimination. Indeed, to the extent that the railroads build up a monopoly which, by making high prices, curtails consumption, they may lose traffic. Effectively to prohibit this form of competition among transportation companies would leave these transportation companies no worse off and perhaps better off. The condition is somewhat parallel to that which confronts us when we attempt to prohibit child labor or to limit the hours of adult labor in mines, etc. Each company concerned may be not unwilling to conform, provided it can have assurance that its competitors will do likewise. Such cases come under one of the classes of cases, which, John Stuart Mill believed, justified interference of government in economic affairs, viz., where something is to the general interest, but where nobody concerned is likely to conform to this interest voluntarily.[1] The force of law may then properly compel conformity on the part of all.

Discrimination among shippers can hardly be said to benefit consumers. If it takes the form of abnormally

[1] Mill, *Principles of Political Economy*, Book V, Chapter XI, Section 12.

high rates charged the competitors of the favored company, consumers are simply deprived of the benefit of competition by these other concerns, without getting the goods from the favored firm at any lower prices. The resulting monopoly will almost certainly bring higher prices. Even if the discrimination takes the form of abnormally low rates to the favored corporation, consumers will hardly derive permanent benefit from it. The favored corporation can appropriate the difference between its freight rate and that of its rivals, or it can drive them out of business and thereafter appropriate more than the difference. A low rate, which is in the nature of a special privilege, is not likely to inure to the benefit of the general public.

Personal discrimination not only does not benefit, and tends to injure railroads and consumers; it also fails to stimulate the productive power of the community and tends rather to weaken it. It removes, to a degree, the greatest stimulus of efficiency, viz., the consciousness that by efficiency and by it alone, can success be attained. There is no certainty that the most efficient company will be the one most favored by discrimination. Favors are more likely to go to a large concern than to a progressive and growing one. And even if, as doubtless not infrequently happens, the favored concern is also, at the time, the most efficient, a knowledge that discriminating rates will partly protect it from competition certainly is not conducive to keeping it thus efficient. In short, survival in competition, through favoritism, is likely not to be a survival of the socially fittest.

When men are organized in a community or nation, the survival of this community or nation is of fundamental importance. The struggle for existence has

provided sufficient evidence that men who are isolated are at a disadvantage; organized society helps the individuals in it to life and happiness. Therefore, with men, the struggle for existence has long since taken the form of a struggle or competition between groups.[1] The group which, all other things equal, has the best organization and the highest types of men,[2] is most likely to prevail. Those characteristics, those standards of right, and those organizations within a community which are most calculated to further the welfare of the whole and its continued survival, must be adjudged the fittest. For this reason, the competitive system of industry has been, by most writers, regarded as desirable. It stimulates efficiency among the members of a group and, therefore, in the group as a whole. For this reason, the aim of eugenics is sound. Its purpose is to stop the breeding of poor units of society and bring about a breeding, more largely, from the strong, the alert, the successful. For this reason, monopoly established by the favoritism of transportation companies is undesirable. Consumers are likely to suffer in the end. Efficiency is likely to be less. The community as a whole is injured and therefore weakened. There is a great difference in the effect on the general welfare between monopoly which is gained and kept by efficiency alone, and monopoly which is the result of artificial advantages, making competition by others difficult or impossible.

[1] Cf. on this topic in its connection with economic activities, Hadley, *Economics*, New York (Putnam), 1906, pp. 18–23.

[2] At least, as regards their relations to fellow members of their own group. Whether considerate dealing with members of alien groups is any advantage may depend largely on the stage of development of, and the strength of, world opinion. Such dealing may conceivably make, for a national group, all the difference between living in a world of friends or a world of united enemies.

There is a considerable analogy between transportation discrimination and the protective tariff system. In both cases, some producers (by the protective tariff, foreign producers) are put at an arbitrary disadvantage compared with others. In both cases the rule that success should depend on efficiency in service is violated. In both cases, competition is seriously restricted and monopoly may result.[1] In one case, efforts of persons desiring the favoritism are turned from the search for more efficient methods of production into selfish political activity; in the other case, efforts which might be devoted to rivalry in efficiency are turned to the persuasion or browbeating of transportation lines' managers. In both cases, the public is likely to suffer.

The ideal of industrial and commercial organization requires that there should be ever active in business a rivalry of business men and corporations in serving well the community, and that success should come to those whose service is the best. An individualistic, as distinguished from a socialistic or a communistic society, relies frankly, to a great degree, on the self-interest of men and their interest in their own immediate families, as motives to economic activity. To the extent that an individualistic society realizes its own proper ideal, it endeavors by public opinion and by definite and enforced law to prevent, absolutely, all anti-social means of gain, to prevent all methods of carrying on business, which are antagonistic to the ultimate well-being of the social group. So far as it is possible to do this, the only profitable lines of activity left open are those in which the individual gains the most for himself by doing the most for the community. He who invents labor-saving ma-

[1] Cf. Part II, Chapter VI, § 10.

chinery, he who best organizes the forces of production, he who best economizes raw materials, he who accumulates needed capital, he who is therefore able to offer the public the most for a given money return, finds himself most prosperous. The attainment of such an ideal of industrial and commercial life, as is here suggested, would not preclude the possibility of an individual's acquiring great wealth. Under the reign of this ideal, great wealth would become, except where acquired by gift or inheritance, an evidence of great service, and, therefore, a valid title to distinction. It would not be, as is now too often the case, a badge of dishonor. It is conformity to this ideal of industrial and commercial life, by the individual and the group, which constitutes industrial and commercial morality.

To hasten the more complete realization of such an industrial ideal, we must express ourselves in its favor and denounce its opposite. When we do this, however, we are liable to be told that those who have succeeded in accumulating wealth by anti-social means, for example, by illegal and discriminatory railroad rates, are no worse than many others who have remained poor; that many competitors would gladly have done likewise if they could, but simply lacked the chance or the sharpness; that it is not right, is cruel, in short, continually to denounce the men who have succeeded.

Those who take, without qualification, this attitude, miss the whole social philosophy of disapproval and punishment. Every wrongdoer, be he murderer, thief, or industrial free-booter, is the product of two forces, heredity and environment. He is made, absolutely, by these. Why, therefore, some may ask, make him suffer for wrongdoing, by disapproval or punishment. The

answer is threefold. First, restraint is necessary on the criminally disposed, in order to protect society against their anti-social activities. Second, society's disapproval and punishment, or the fear of these, are themselves part of the environment which molds men, and are, therefore, in some degree, preventive of wrong. Third, denunciation of wrongdoing arouses the unnoting and the indifferent, and so helps to establish and enforce prohibitions. If we would have a true industrial and commercial morality generally practiced, we must manifest open disapproval of industrial free-booting. Thus only can we be confident of developing, in the rising generation, a sentiment against industrial and commercial immorality, of arousing society to active opposition, and of making unfair methods of wealth-getting no longer pay. We must have such laws and such enforcement of laws that it will only be worth while to accumulate wealth by service.

§ 5

Summary

Discrimination among shippers is, we have seen, practiced in evasive ways, partly because of its illegality and of popular disapproval. These ways include blind billing, false billing, use of special equipment, such as tank cars by favored shippers at secret rates, making discriminating rates read from insignificant points so that others than the favored companies shall not know of them, allowing large sums for the services of terminal railroads or sidings owned by corporations, and various other concealments and evasions. Discrimination is caused by competition, by interest of stockholders, di-

rectors, or officers of a transportation company in other companies, and by interest of a transportation company itself in other companies. Discrimination among shippers does not benefit transportation companies themselves, taken as a whole, nor does it bring economy by more fully utilizing the transportation plants. It tends to injure consumers. It builds up monopoly. It conduces to the survival of the relatively inefficient. It violates the proper ideal of industrial and commercial morality. It deserves, in full, the condemnation it generally receives, and should be persistently hunted down and rooted out of our business life.

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