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EVERY MAN HIS OWN FINANCIER

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A Practical Handbook

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PREFACE

IT has been the object of the author to present the principles of the subject Finance in such a way that they may be understood and studied by everybody. At the present time the study of the subject of the Theory and Practice of Money and its Exchanges is mainly confined to a few specialists. By most people it is regarded as too complicated and difficult to understand for any but those who have plenty of leisure and take it up out of purely academic interest, or for those whose business compels them to have a certain knowledge of one or other of the practical branches of the subject.

And yet it is in reality a subject which ought to be an important part of every one's education, for money is the mainspring, so to speak, of the commercial mechanism of the whole world.

How many people who read their newspaper with unerring regularity do not finally put it down without having even glanced at that one page which tells, by means of figures rather than words, the state of national and international commerce and finance—the financial review?

Instead of being to most people a profoundly uninteresting confusion of figures and unintelligible jargon, the contents of that page should be as easy of comprehension as the rest of the paper, and should be perused with as much intelligence and interest.

What is the meaning of the published balance sheets of the various banks of the world, the statements of Treasury Bill issues, and the sales of India Council Bills; the raising of loans, the rates of interest and discount on trade Bills and bank drafts at home and abroad, the prices of silver and gold, the imports and exports of bullion and specie, the

foreign rates of Exchange on London and the other principal cities of the world, the quotations of Stocks and Shares on the various Bourses, etc.?

Then, again, there is the Theory of Money, which, although it is the basis of the whole study, is generally a closed book to even those who are more or less acquainted with the practice of Money Exchanges.

What is good money, and what is bad? what are the various currency systems of the world? how is the value of money estimated, and what are the causes of fluctuations in that value? what are debased money, bimetallism, inconvertible paper and credit? what is banking, the clearing system, the international exchange of merchandise, Stocks and Shares, and money? and how can almost all the arithmetical calculations be made by any schoolboy on the chain rule system or the rule of three?

The author has endeavoured to explain these matters clearly and logically, not merely by giving strings of definitions, but by weaving together facts and ideas in orderly fashion, so that there are no missing mental links so to speak; each new thought and conclusion arising logically from the preceding one, without ever taking it for granted that the reader is acquainted with some piece of ungiven information which is essential to the complete demonstration of any particular point under discussion.

In the absence of a comprehensive and popular treatment of the subject it is difficult for one who wishes to pursue the study of Finance to know where to begin or how to proceed. If he takes up a treatise, either on the Theory of Money or on the Foreign Exchanges, or on Banking, or on the Money Market or on the Stock Exchange, or on Arbitrage, he finds that there is much in it which he cannot understand, because the author presumes that his reader is conversant with one or more of the other branches on the subject; and again, even if he reads separate treatises on each of those other branches, it is possible that in the end he will find he still lacks the connecting links which are necessary to bind the

several parts together into one complete and logical whole. And yet the subject is one which concerns every one—the merchant, whose trade dealings with foreign countries require him to understand the currency of the country to and from which he exports and imports merchandise; the statesman, who is called upon to decide financial questions, which touch the interests of every individual in the nation; and the Government official, who is sent out to take his part in the administration of the Colonies, Protectorates or Dependencies beyond the seas; the banker, the accountant, the auditor, the traveller, in a word, every business man and every man of intelligence and education—and it is hoped that this book may be found of assistance in facilitating popular instruction and in meeting such cases as those suggested.

In preparing this work the writer has not depended solely on the data which he has accumulated during a long and varied practical experience in the field of finance.

It will be readily understood that he has also had to study and criticize the works of many well-known authorities, and to these he here desires to acknowledge his indebtedness.

In the realm of theory he has especially derived much benefit from the four treatises on money, by Professor F. S. Walker, Professor T. S. Nicholson, Professor Stanley Jevons, and M. Chevalier; Mr Goschen's *Theory of the Foreign Exchanges*, Mr Seyd's *Bullion and the Foreign Exchanges*, and H. D. Macleod's *Theory and Practice of Banking;* while in the other departments of the subject, among works which have proved of great assistance, may be included, Mr Clare's excellent volumes, entitled, *A Money Market Primer* and *A.B.C. of the Foreign Exchanges*, in which the relation of the rate of discount to the foreign rates of Exchange is so ably and clearly demonstrated, and on which the remarks relating to that question in the following pages have been largely based; Mr W. Bagehot's now classical *Lombard Street;* Henry Norman's *Cambist* and

Money's Worth, Tate's *Modern Cambist*, Deutsch's *Arbitrage*, and R. H. Inglis Palgrave's *Bank Rate and the Money Market*.

In addition to the above must be mentioned those useful and able works by C. Duguid, viz., *The Stock Exchange* and *How to Read the Money Article*, F. Straker's *Money Market*, W. G. Cordingley's *Guide to the Stock Exchange*, H. T. Easton's *Money, Exchange and Banking*, J. W. Johnson's *Promissory Notes, Drafts and Cheques*, Castelli's *Theory of Options in Stocks and Shares*, and many valuable articles in *The Economist* and *Financial Times*.

F. A. C. M.

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EVERY MAN HIS OWN FINANCIER

PART THE FIRST

CHAPTER I

What is Value?

VALUE is power in exchange.

Any one thing—call it A—which is capable of being exchanged for any other thing—call it B—has value, and this value may be expressed in the form of a ratio, A : B, an equation between the two things exchanged; the ratio expresses the value of both A and B; B is the value of A, and A is the value of B. Thus value is a ratio and not a quality, and the expression " intrinsic " value, which is so common in discussions on money, has no meaning, for intrinsic value is the same thing as intrinsic ratio, and a ratio cannot be called intrinsic.

Anything which has value must have utility, otherwise it would not be exchanged. When we speak of the utility of an article, we mean that " men have a use for that article." But while utility must thus be an element of value, it does not follow that everything that is useful has therefore got value. The atmosphere, e.g., is very useful, but it has no value, because no one will give anything in exchange for it. The value of an article is not necessarily apparent until the article is exchanged, but though we may not be able to estimate just what that value is until the exchange actually takes place, yet it must not be argued therefrom that it has no value until it is exchanged.

The Origin of Value

The value of an article does not necessarily arise from the fact that labour was spent in producing it.

"It is not because an article has cost labour that it possesses value. That is because it cannot now be obtained without labour. In any given instance it is not necessary that a thing, to have value, should itself have cost labour in any degree, while it is not at all uncommon to find an article having a value equal to that of another article which cost twice as much labour as itself" (Prof. F. A. Walker, *Political Economy*).

If then value does not depend on cost of production, on what does it depend? It is determined by the laws of supply and demand. Let us now see how supply and demand influence value. "Value, like distance, requires two objects; if any change takes place in either of them, the distance between them has changed, no matter in which the change has taken place" (H. D. Macleod); and any change in either of the two objects is due to a variation in either the demand or supply, or in both demand and supply.

"Lord Lauderdale states the laws of demand and supply in this way: Take any two quantities, A and B, which may vary with respect to each other. First let A remain constant, while B varies. Then the ratio of B to A will change from four causes. It would increase in value: (1) from a diminution of quantity; (2) from an increase of demand.

"It would diminish in value: (1) from an increase of quantity; (2) from a diminution of demand.

"Now as the variation of A with respect to B will be governed by exactly the same four causes, it is quite clear that the variation of both quantities will be governed by eight independent causes; and if these be connected in the form of an equation, that will manifestly be the true general Law of Value, or the true general equation of Economics" (H. D. Macleod's *History of Economics*, p. 667).

The Meaning of the Terms Supply and Demand

The demand for an article, in the economic sense, is not an indiscriminate desire for that article, but is limited by the value which people are ready to give in exchange for it;

it is the amount offered in exchange for it by would-be buyers.

Similarly the supply is limited by the value that would-be sellers are willing to accept; if that value is not offered by buyers, sellers will not sell, i.e., the supply is limited.

The supply of an article may be limited by its cost of production, for as soon as the cost of producing it is as great as the exchange value which would-be buyers offer for it, there is no profit to be gained by the producer, who therefore ceases to produce it.

In exchange the demand comes from the buyers, and the supply from the sellers, and the value of an article fluctuates according to the disposition of the buyers to buy and the sellers to sell.

The Three Money Functions

In the days when each man produced only and all that he desired to himself consume, there was no such thing as exchange.

The occasion for exchange arose with the principle of the division of labour, and the primitive method of exchange was barter.

But the extension of the principle of dividing labour required some other means of exchange than barter, and this means was found in the adoption of an intermediary called money.

This intermediary performs three certain functions, described by Prof. F. A. Walker as follows. It serves as: (1) a medium of exchange; (2) a common denominator of value; (3) a standard of deferred payments.

The use of a *Medium of Exchange* is commonly illustrated by the case of the bootmaker, who, wanting to exchange a pair of boots for a hat, was unable to do so because, although he found many people who had hats, he could not find one who wanted boots in exchange for them. In other words, that " double coincidence " which is so frequently wanting in barter, can be brought about by the employment of a

medium of exchange, " an interposed commodity," called money, which people will receive in exchange for what they are willing to part with, because they believe that they will be able to exchange it again for things that they wish to obtain.

The second function fulfilled by money, viz., that of serving as a *value-denominator*, arises out of the first function. When we speak of an intermediary as a value-denominator, we mean that if the intermediary is exchanged against all the articles in the market, we are enabled to make a price list of commodities, from which we can compare their relative values in terms of the money. The function of value-denominator is frequently described as " measuring value," but such an expression is incorrect, inasmuch as it is impossible to talk about measuring a ratio.

The third function, viz., *standard of deferred payments*, arises from the practice of borrowing and lending, i.e., creating debts; for then there is introduced the element of time; the creditor naturally wishes to be paid in some material which will have the same value when the debt is ultimately discharged as when it was originally incurred. " Commerce," says Prof. Jevons, " cannot advance far before people begin to borrow and lend, and debts of various origin are contracted. It is, in some cases, usual indeed to restore the very same article which was borrowed, and in almost every case it would be possible to pay back in the same kind of commodity. If corn be borrowed, corn might be paid back in corn, with interest; but the lender will often not wish to have things returned to him at an uncertain time, when he does not need them, or when their value is unusually low; a borrower, too, may need several kinds of articles, which he is not likely to obtain from one person, hence arises the convenience of borrowing and lending in one generally recognized commodity, *of which the value varies little.*" This function has generally been described as that of serving as a *standard of value*, but such a term is, says Prof. Walker, " unfortunate, both as being little

descriptive and as arousing the antagonism of those who advocate the concurrent circulation of gold and silver as money."

In order to perform these three functions, money must have value in exchange, and a good Standard of Deferred Payments should have a *steady* value, i.e., should maintain, as far as possible, a steady ratio between itself and the total number of commodities against which it is exchanged.

Now it is not necessary that all these three functions should be performed by one single commodity only. Wheat, e.g., may be used as a standard of deferred payments, barley as a medium of exchange, and gold as a value-denominator. But it must be observed that whatever is that intermediary which forms the standard of deferred payments, it must also be a medium of exchange, although there may be other media of exchange circulating concurrently, as is the case at the present time. If only one article were used to perform the three money functions, the subject money would be relieved of much of its present complexity. But, as it is, the money of the civilized world to-day consists of various forms, viz., gold, silver, bronze, paper and credit, which, together, variously fulfil the three functions we have described, and which, together, make up what is called the circulating medium, or currency of the world.

All of these intermediaries are, in vulgar parlance, called money, but whether that name should be applied to all of them indiscriminately has been much disputed by economists, who differ in their opinion as to which of them are money and which are not.

In this book we are going to consider all of these several intermediaries, and examine their relation to one another—their values or rates of exchange—and for that purpose we divide them into four classes and explain the principles which govern them in such a way that each can be easily distinguished from the other, no matter whether it is called money or not.

But we do not see why all these intermediaries should not

be called money, so long as we realize that they are not all of them the same kind of money, and so long as we understand the good or ill that may arise from the use of this, or that one, considered separately.

For this purpose we divide the several kinds of intermediaries into four classes, as under: (1) commodity money; (2) fiduciary money; (3) token money; (4) credit.

CHAPTER II

Commodity Money

By commodity money we mean metallic money, which has a natural cost of production, and whose value is exactly the same as the value of the metal of which it is made.

The choice of what material is best suited to serve as commodity money depends on the properties which such material ought to possess.

The several properties necessary to commodity money have, by Professor Jevons, been enumerated as under: portability, indestructibility, uniformity, divisibility, cognizability, and stability of value.

Portability.—Money should contain "much value in small bulk" (Prof. F. A. Walker). "The value must be so related to the weight and bulk of the material, that the money shall not be inconveniently heavy on the one hand, nor inconveniently minute on the other" (Prof. Jevons). This quality enables it to be easily transported or stored, and its importance is readily recognized, when it is remembered that the settlement of international indebtedness necessitates its transportation from one country to another.

Indestructibility is a necessary quality to prevent loss to the holders.

Uniformity.—Since equal weights or pieces of the same dimension should have equal value, there should be no difference in the value of the different parts of the substance.

Divisibility without Loss of Value.—The loss involved in the division of some substances, such, for example, as the diamond, disqualifies them as being suitable for use as money.

Cognizability is an essential characteristic, to enable the

exact value to be easily recognized. The object of coining the medium which is made of metal, is to secure its popular recognition. "It is in their adaptations to the art of the coiner that the metals, and especially the precious metals, exhibit their most marked qualifications for use as money. With some kinds of money, indeed, no such mode of determination is required, the divisions being natural, as in the case of red feathers, and shells as money, or of cattle and sheep, which only need to be counted. With money of gold and silver, and even of copper or iron, however, both the quantity and quality of each piece offered may be brought into question, unless some means be adopted by which the piece shall be made to exhibit unmistakably the amount of pure metal it contains" (Prof. F. A. Walker).

Coins, therefore, profess to contain a certain weight and "fineness" (i.e., purity) (*v.* pp. 34, 137) of metal, which is certified by the designs which are stamped on them. The manufacture of coins from metal is a prerogative of the Executive Government, for if it were left to open competition, manufacturers would find it to their advantage to put less than the required fineness of metal into the coins, and sell them cheaply.

Stability of Value.—Let us suppose that all money consists of gold, and that gold is used for no other purpose except that of serving as money, under what conditions would its value be stable?

In order to answer this we must first explain how the variations in its value can be estimated, and define exactly what constitutes the demand for and supply of money.

Fluctuations in the Value of Money estimated by Change in Prices

What is the manner in which we estimate the fluctuations in the value of money?

The value of money is expressed by prices. "Price," says Prof. Walker, "is purchasing power expressed in terms of some one article, be the same wheat or beef or wool, or gold

or silver. In common speech price brings up the idea of money-value, the purchasing power of an article expressed in terms of money. Yet it is equally correct to say that the price of a horse is 75 bushels of wheat, as to say it is 100 dollars."

So when speaking of prices of other commodities in terms of gold, we mean the power of these commodities to purchase gold; for the price of the commodities is the expression of their ratio to gold.

When we say that the price of wheat has fallen, we mean simply that wheat purchases less money now than formerly. In respect to wheat the value of money has risen; but since the value of money may quite likely have fallen in respect to commodities other than wheat, we cannot say that because the price of wheat has fallen the value of money has risen *generally*. In order to ascertain whether the value of money has fluctuated or not, we must first find out the changes in the prices of *all* commodities—we must, in other words, see whether the *general level of prices* has altered.

System of Index Numbers

Variations in the general level of prices are ascertainable by a system of index numbers, which has been described by J. S. Nicholson in his *Treatise on Money* as follows:

" According to this method the average prices of a number of selected articles were determined for a period of six years (1845-1850), and each of these prices per unit taken was reckoned at 100. Thus we might get a pound, or a yard, or a gallon, as the original unit, but the price per unit is in every case 100. Now suppose changes occur in prices, then the corresponding change is marked by the addition to, or subtraction from, this 100 of the necessary percentages. In general, we find movements in opposite directions, and the resultant, or general movement, is determined by simple addition of the new index numbers, as they are called. Thus if, as in *The Economist*, twenty-two articles are taken, the

addition of the original index numbers would be 2,200. If at any time the aggregate index numbers amount to more than 2,200, a general rise in prices is said to have taken place; if they amount to less, there is a general fall. It is quite clear that the calculation is very rough, and must always be used with caution. For example, if the index numbers showed a general rise, it would not do, without further examination, to say that the same money wages would purchase less commodities for the use of labourers, for it might happen that the particular articles consumed by labourers had fallen in price on the whole."

Mr Macleod defines the law of prices as follows: "If money be taken as the fixed quantity, the more of the other quantity which can be obtained in exchange for it, the greater is the value of money. The less of the other quantity which can be obtained for it, the less is the value of money. Or, if the other quantity be taken as the fixed quantity, the less the money which is given for it the greater is the value of money, and the more the money given for it the less is the value of money. Hence it is seen that the value of money varies inversely with the price."

Definition of Supply of, and Demand for, Money

We must now define exactly what is the meaning of the supply of, and the demand for, money, still taking that money to consist of gold which has no other use but that of performing the money-functions.

1. *The Supply.*

Firstly, the supply of money consists of all that quantity which is offered in exchange for other commodities. "But there is another very important factor which must be taken into consideration in estimating the effect of the supply of gold on prices, and that factor is what Mr Mill calls the "efficiency of money," or its rapidity of circulation. Thus, if a piece of gold, in the form of money, is exchanged against commodities ten times, the effect on prices is the same as if

ten pie ces of gold were exchanged once." As an example of this Mr J. S. Nicholson says:

"With a certain level of prices, ready money transactions may be carried on with a small amount of money if it circulates rapidly, whilst if the circulation is sluggish, more will be required. And practically this is the same thing as saying that prices may be varied by either increasing the quantity of money or by increasing the rapidity of circulation, i.e., the number of times each piece is used."

Thus a diminution in the quantity of money or a decrease in the rapidity of the circulation will lower prices.

2. *The Demand*

The demand for money consists of all the commodities which are offered in exchange for it, and also the number of times those commodities are offered.

Conditions of Stability of Value of Money

Now by referring to the laws of supply and demand we shall see that the only conditions on which the value of money would be stable, i.e., the only condition on which the general level of prices could remain unaltered would be the maintenance of a constant ratio between the total of money and the total of other commodities. For let A represent the total quantity of gold which is exchanged against commodities, and let B represent the total quantity of commodities which are exchanged against gold:

Then A = the total supply of gold

and B = the total supply of commodities.

What then is the demand for A and B respectively?

The demand for A will be B, i.e., the total supply of commodities offered in exchange for gold; and the demand for B will be A, i.e., the total supply of gold offered in exchange against commodities.

Then A equals the total supply of gold and the total demand for commodities; and B equals the total supply of commodities and the total demand for gold.

Hence, in order to effect a perfect stability of value in A we must preserve the ratio between A and B, but in order to do this we should have not only to know at all times the exact conditions of B, but also to regulate the conditions of A to exactly coincide with those of B, and this would clearly be an impossibility, for the value of money, or the general level of prices, may vary from either an increase or a diminution of A or from an increase or diminution of B. In other words:

A may be increased, or the value of gold may fall and prices rise, from: (1) an increase in the output from the mines; (2) the release of such quantities of gold as may have been hoarded; (3) an increase in the rapidity of its circulation.

A may be diminished, or the value of gold may rise and prices fall, from: (1) a decrease in the output from the mines; (2) hoarding; (3) a decrease in the rapidity of its circulation.

B may be increased, i.e., the value of gold may rise and prices fall, from an increase in the volume of exchanges effected by the use of money.

B may be diminished, i.e., the value of gold may fall and prices rise, from a falling off in the volume of exchanges effected by the use of money.

The Supply of Commodity Money Limited by Cost of Production

It should be noted here that the supply of commodity money is like the supply of any other commodity of value, limited by the cost of its production, that is to say, by the cost of working the mines, and the cost of working the mines depends largely on the general level of prices.

For example, if inventions of new mechanical and chemical methods of extracting the metal from the ore were to increase the supply of gold, prices would be raised in consequence, with the result that wages, cost of machinery and transport, or, in other words, the cost of producing the metal would be greater, and the profits of working the mines would be less.

Thus, while every decline in the cost of producing gold facilitates an increase in its supply (for more gold can be produced without the expenditure of additional labour), every increase in the supply tends to raise prices. But why should money be required to maintain, if not this impossibly perfect stability, yet even a comparative stability of value? This question is best answered by an examination of the main effects of a lack of comparative stability of value.

1. Results of an Increase in the Supply of Gold

(1) A rise in prices and a reduction in the pressure of indebtedness and of fixed charges of all kinds—rents, pensions, annuities, etc.—is generally claimed to be one of the results of an increase of money. "The public indebtedness of the civilized world to-day probably stands between 25,000,000,000 and 30,000,000,000 of dollars of American money. The volume of private debts, including the capitalized value of fixed charges—loans, annuities, etc.—is vastly greater" (Prof. F. A. Walker, *Money*). Suppose you were to lend the municipality £1,000 at 5% interest p.a., the loan being repayable in ten years, the municipality will pay you £50 p.a. for ten years, and then return you your £1,000. If during that ten years the volume of the precious metal increased (the demand remaining constant), your £50 p.a., as well as your £1,000 loan, will become worth less than it was when you made the contract with the municipality, and you will suffer a loss, but the burden of the municipality's indebtedness will be correspondingly lightened, as also will all the rest of that whole body of outstanding indebtedness, both public and private, which we have just mentioned, for debtors will be able to discharge their debts in fewer commodities.

(2) A temporary stimulus to trade.

"Mr Hume points out that a certain period of time must elapse after an increase of the precious metal before that distribution takes place throughout the world which Mr Ricardo assumed in the bullion controversy of 1810 would take place without any appreciable interval. In this interval

of 'retarded distribution' Mr Hume discovers the possibility of an influence highly beneficial while it lasts, upon the industry of a country. In the interval, or intermediate situation, between the acquisition of money and the rise of prices, a stimulus is given to enterprise. Mr Hume confines the advantage of a given increase in the volume of the metals to the interval required to secure its uniform diffusion among all classes and its equal effect upon all prices" (Prof. F. A. Walker, *Money*).

2. Effects of a Decrease in the Supply of Gold

Reverting to our illustration of the loan of £1,000 to the municipality, if during the ten years of the loan the volume of gold were to decrease (the demand remaining constant), your loan would be worth more than it was when you made the contract, and you will consequently benefit thereby, but the municipality's indebtedness will be increased, as well as that of all debtors, public and private, for it will cost more commodities to discharge debts, owing to the fall in prices.

(3) The effects of the lack of stability in the value of gold which is due to other causes than variations in the supply of the metal may be illustrated by the case of a fall in prices which is due to an increase in the volume of trade, or to improved methods of production. In such a case "there is no disturbance of fixed contracts, for although those who have to make fixed payments are obliged, if they pay in goods to pay more goods, yet it must be remembered that they have more and cheaper goods in which to make the payments, whilst the community is better off by getting more goods with less effort" (Farrer).

Use of Gold in the Arts affects its Value as Money

Up to this we have been considering the money commodity to have no other use but that of performing the money functions.

As a matter of fact, however, the commodity gold, which is one of the intermediaries which are used as money at the present day, is also employed largely in the arts.

Is the value of the commodity gold money subjected to any alteration by the employment of the metal in the arts?

The use of gold in the arts to some extent lessens the tendency of the value of money to fluctuate, for when there happens to be an increase in the production of gold, part of that increase is turned into ornaments and other articles, so that the total quantity of existing money is not increased in the same degree that it otherwise would be.

The value of money is lowered by the conversion of gold ornaments into money, and raised by the melting of gold money into gold ornaments.

Origin of Instability of Value.—Thus it will be seen how careful one must be, when questioning the efficiency of this or that commodity to perform the money functions, on account of its alleged lack of stability of value, as evidenced by fluctuations in the general level of prices, to ascertain the true cause of that instability, for it may be that the cause is to be found elsewhere than in variations of the quantity of the metal.

We shall presently see that the value of money may also be greatly affected by the use of the other three classes of money concurrently with the commodity money.

The Precious Metals lack Stability of Value.—Now of all the substances which have, at one time or another, been used as commodity money, the precious metals, gold and silver, have been considered to best combine the several properties which we have seen a commodity money should possess; but, nevertheless, the precious metals are liable to considerable fluctuations of value, due to alteration of supply—they are lacking in that essential property, stability of value.

"The production of the precious metals is of the most spasmodic character. At times a flood of gold or of silver, or of both, has poured from newly opened mines, as after the discovery of the mines of Potosi in 1545, and of the mines of California almost coincidently with those of Australia in 1849-51; at times, on the other hand, mining industry has almost wholly ceased, either from the exhaustion of known

deposits, or as the result of war or civil disturbance" (Walker's *Political Economy*).

Various ways have been suggested of establishing a standard of deferred payments, which shall be free from the fluctuations attendant on varying supplies of the precious metals.

The Tabular Standard

Notably may be mentioned the plan of J. Lowe and of P. Scrope, viz., *The Tabular Standard*, which is recommended by Prof. Jevons. The Tabular Standard is similar to the system of Index Numbers already described.

"To carry out Lowe's and Scrope's plans (published in 1822 and 1833 respectively) into effect," says J. S. Nicholson, "a permanent Government commission would have to be created and endowed with a kind of judicial power. The officers of the department would have to collect the current prices of commodities in all the principal markets of the kingdom, and by a well-defined system of calculations would compute, from their data, the average variations in the purchasing power of gold. The decisions of this committee would be published monthly, and payments would be adjusted in accordance with them. Thus, suppose that a debt of £100 was incurred on July 1, 1875, and was to be paid back on July 1, 1878; if the commission had decided in June, 1878, that the value of gold had fallen in the ratio of 106 to 100 in the intervening years, then the creditor would claim an increase of 6% in the nominal amount of the debt."

"In short," says Prof. F. A. Walker in his *Political Economy*, "it is a means of giving and taking credit without receiving an unearned advantage, or suffering an undeserved injury, through fluctuations in the value of money."

Professor Jevons advocated the application of this system to ordinary commercial paper of three months' date or more (*v.*, p. 219). But Professor F. A. Walker considers that it would be an obstruction to commerce which business men would not tolerate; for, he says, "it would be impracticable

for the man of business to cast up, at a moment, the results of any given transactions or ascertain precisely his own standing. 'At the same time, however, the latter economist points out that there is a certain class of contracts for which the Tabular Standard System might be advantageously employed.' Certainly, the need of such a standard of deferred payments is most imperative in the case of those who are not in the way of repairing any losses they may incur through fluctuations in the value of money. . . .

" In permanent investments of property not the least inconvenience will be encountered by the scheme of a multiple tender (i.e., tabular standard), which might be extended to the cases of all who have definitely retired from active life, carrying away with them all they will ever have to support old age and provide for their children; to the cases of trustees and guardians under a solemn responsibility in the care of estates where loss is more to be dreaded than gain to be desired; to the cases of institutions whose funds are sequestered from the stock of active capital for pious and charitable uses. The funds of savings banks might be put under the same safeguard, and Government loans might also be issued in terms of the multiple tender."

The Law of Distribution

Supposing then that all money consists of nothing but commodity gold money, the question arises, might it not be possible that the value of gold could be more stable in one country than in another? If gold were used as money throughout the world, might not the general level of prices be more stable in one country than in another? If this were possible, gold might, in some countries, be a better standard of deferred payments than in others. According to the Law of Distribution of the precious metals, which was expounded by Ricardo in his pamphlet on the high price of bullion in the year 1809, if any country has more than that quantity of metallic money which is sufficient to meet the demands of trade, the general level of prices in that country will rise

above the general level of prices in other countries, with the result that its diminished purchasing power in the first country will cause the surplus to run off into those countries where its purchasing power is greater. Thus, when the supply of gold in a country is *increasing*, prices rise above the level of other countries, with the result that either gold is *exported* or goods are *imported*, and prices are consequently again lowered to the level of other countries; when the supply of gold in a country is *decreasing*, prices fall below the level of other countries, with the result that either goods are *exported* or gold is *imported*, and prices are consequently again raised to the level of other countries.

In this way the " general level of prices throughout the world will be so adjusted that the metals used as currency will in each country be just sufficient for the purpose " (J. S. Nicholson). Some countries may have more than others, but each one will have that quantity which maintains a general level of prices similar to that in every other country.

And since price is thus the agent by which the gold is distributed among the various countries of the trading world, it is very important that prices should not be interfered with by laws, for such interference prevents the natural ebb and flow of the gold, and may do enormous injury to trade.

The Mercantile Theory

That no advantage is to be gained by the efforts of legislation to prevent the natural flow of the precious metals was clearly demonstrated by Adam Smith, who conclusively proved the fallacy of the old Mercantile Theory. According to the Mercantile Theory the more money a country could procure the richer it became at the expense of its neighbours, and so the law of the land did everything to encourage the import of gold; it was argued that if the exports of commodities exceeded the imports, the balance had to be received in money, and the balance of trade (as this difference is called) (*v.* p. 170) was said to be favourable to the exporting country;

and if the imports exceeded the exports, inasmuch as gold would have to be paid away to settle the difference, the balance of trade was said to be unfavourable to the importing country.

Gold-using Countries and Silver-using Countries

Let us now suppose that the trading world is split up into two sets of countries; one set using nothing but gold commodity money, and the other set using nothing but silver commodity money. In such case there would be two sets of prices to commodities, namely, the gold prices of the gold countries and the silver prices of the silver countries. For the present we will consider these two sets of countries as quite distinct and apart the one from the other, and will examine the effect on the value of the gold money of the gold countries, produced by the introduction of fiduciary and token money into circulation with the gold.

But before proceeding it is necessary to state a few definitions.

CHAPTER III

The Price of Money

In treating of this mixture of moneys we shall have to use the word " price " in a new sense. As between money and commodities we have spoken of " price " as being the money value of other commodities; but as between one kind of money and another we must use it as being the money value of money. We shall, therefore, have to speak of the fiduciary money price of gold-money, the gold-price of tokens and so on.

Fiduciary Money comprises all those forms of money which have no natural cost of production, and which, like commodity money, are not extinguishable by redemption* in other money, either on demand or at fixed dates. Such money has no general circulating value, except in its own country.

Token Money is the combination of commodity and fiduciary money in one.†

Standard Money

No matter what be the extent to which a country employs fiduciary and token money, such forms of money are not spoken of as standard money. Standard money is pure commodity money and that only. Hence a country which uses nothing but fiduciary, or token money, has no standard money. But although a country may have no standard money, it is nevertheless said to have a standard, and that standard is the precious metal to which it is attempted, whether successfully or unsuccessfully, to make the fiduciary and token money bear a fixed ratio of value.

*A promissory note (*v.* Appendix A) *is extinguished by redemption* when the maker pays it at a fixed date, hence credit (of which a promissory note is one example) is not fiduciary money (*v.* also p. 65).

†This is fully illustrated in Part II, pp. 148-156.

Depreciation is a loss of purchasing power in fiduciary money as compared to commodity money.

The word is frequently used to express a fall in the value of commodity money; as, for example, in the case of silver, which has fallen in value during the last half century. But in the pages of this book we shall confine the meaning of depreciation to a fall in the value of fiduciary money only.

Legal Tender.—"By legal tender is denoted such money as a creditor is obliged to receive in requital of a debt, expressed in terms of the money of the realm" (Jevons).

"The standard money of a country needs no law of legal tender to make it good discharge of debt, as the ordinary contract by which the debt is created will require it to be extinguished by payment in the standard money" (Farrer, *Studies of Currency*, 1898).

The law of legal tender is applied to other moneys than the standard, in order to make them standards of deferred payments on equal terms with the standard, and is intended to create the general belief that they will preserve a fixed ratio of value with the standard. When money is declared to be only limited legal tender, the law "only means that the State provides a definite medium of exchange, and defines precisely what that is. The exact meaning of legal tender may, of course, vary from country to country" (Jevons).

CHAPTER IV

Fiduciary Money in the Form of Debasement

WHEN gold or silver is bought by a Government for the purpose of coining, the question arises, how many coins shall the Government give in exchange for the metal; that is to say, what shall be the mint* price of the metal. There may be two mint prices, viz., a theoretical mint price and a practical mint price. The *Theoretical Mint Price* of gold or silver means the weight of gold or silver metal, in the form of gold or silver coins, or, in other words, the number of coins into which a given quantity of gold or silver metal is divided is the Theoretical Mint price of that quantity of metal, and that number of coins is determined by law. The number of coins so determined is quite arbitrary, but some rate must be fixed and kept to, so that the public may know the quantity of metal they are receiving when they accept a coin.

The *Practical Mint Price* of gold or silver is the number of coins which the mint actually gives in exchange for a certain quantity of metal.

We will suppose that the Government makes no charge for coining, but that when it buys gold or silver it gives the number of coins into which it manufactures that metal. In such case (as is the practice of Great Britain in respect to gold, under the provisions of the Coinage Act of 1870) the theoretical and the practical mint prices of gold are identical.

Hence in Great Britain, where no charge is made for coining gold (the standard money), one oz. of gold (of a certain fineness or purity) is coined into £3 17s. 10½d. in coins; i.e., £3 17s. 10½d. is both the theoretical and the practical mint price of one oz. of standard gold (*v.* pp. 34, 137).

*In the British Empire, besides the Royal Mint in London, there are mints in Sydney, Melbourne, Perth, Bombay, Calcutta and Canada.

Fractions of the Sovereign

We must here notice that the 17s. 10½d. does not mean that the gold is changed into 17s. in silver and 10½d. in bronze coins, but that 17s. 10½d. is the name of a fraction of a gold coin which is called a sovereign or a pound. 17s. is the name given to $\frac{17}{20}$ths of one sovereign, 10d. that of $\frac{10}{240}$ths of one sovereign, and ½d. that of $\frac{1}{480}$th of one sovereign; so that the total fraction of £1, which is thus designated 17s. 10½d., is $\frac{17}{20}$ths plus $\frac{10}{240}$ths plus $\frac{1}{480}$th or $\frac{420}{480}$ths; in other words, one ounce of standard gold is coined into $3\frac{420}{480}$ sovereigns.

The *Market Price of Gold* means the number of coins which the public will pay for a certain quantity of metal, and if the coins contain the full legal amount of metal, the market price of bullion must be the same as the practical mint price.

But now, suppose the coins become *debased*, how is their value affected?

Two Kinds of Debasement

Owing to various causes, coins originally issued from the mint in almost exact uniformity, come to exhibit, after a time, considerable differences in their respective weights. "Some go early into hoards or deposits, others are worn down by almost continuous circulation, others still are dealt with illegitimately by clipping, punching and sweating, till a considerable portion of their substance disappears."* All such coins we call debased. Again, when the mint manufactures coins which contain less than the legal quantity of pure metal, and declares them to be of the same value as if they were of full legal weight and fineness, such coins are said to be debased. Thus there are two kinds of debasement, one caused by wear or tear or by the people, the other by the mint.

The debasement by the mint is a surreptitious raising of the theoretical mint price of the metal, with intent to defraud the public.

Now suppose a portion of the standard gold coins of a

* Prof. F. A. Walker.

country become debased by wear or tear or clipping, but that the total number of the coins of the country is not altered, what is the effect on the value of the money of that country?

Let a number of the sovereigns be so debased that they contain $\frac{19}{20}$ths of the metal they ought to contain by law; then one debased sovereign is a token coin, consisting of $\frac{19}{20}$ths (i.e., 19s.) of commodity money and $\frac{1}{20}$th (i.e., 1s.) of fiduciary money, and the total currency of the country consists of some pure commodity coins and some token ones.

The actual amount of gold in the debased coins is obviously of the same value as it would be if it were not coined, and one debased sovereign is therefore only equal in value to $\frac{19}{20}$ths of a full-weighted sovereign, unless it is by some means endowed with the full value of an undebased sovereign.

Suppose that the debased sovereign is regarded by the people as equivalent to only $\frac{19}{20}$ths of a full-weighted sovereign, 21s. in debased coins will have to be given in exchange for 20s. full weighted ones, and it is clear the debased sovereigns are depreciated, because a portion of them has lost its value. But, nevertheless, that latter portion is money, and is forced to circulate as money.

The result of the depreciation which we have supposed is that there are two prices to commodities, viz., full-weighted coin prices and debased coin prices, and the token money price of gold bullion* rises above the mint theoretical and practical price.

But while the fiduciary portion of the debased coins is thus forced to circulate, it does not *take the place of* the shortage of metal in the debased coins, it is not used as a substitute for gold.†

The number of coins in the country would therefore (provided of course the demand is constant) be insufficient; and in accordance with the Law of Distribution more gold would be imported to make up for the deficiency. The result of the

* Metal in the uncoined state is called bullion.

† And the Foreign Exchanges will fall in consequence (*v.* p. 185).

depreciation would be to increase the total quantity of the money in the country by the use of fiduciary money and to raise prices in terms of the tokens, while prices in terms of the full-weighted coins—the commodity money—would remain unchanged.

But it does not follow that the debased coins would become depreciated at all. If the people elect to accept the fiduciary portion of the tokens as being equivalent in value to the shortage of gold in the coins, or if the law could force them to so accept it, one debased sovereign would have the same purchasing power in its own country as a full-weighted coin, i.e., 19s. of commodity money and 1s. fiduciary money, combined, would equal 20s. commodity money. Here there would be no depreciation, no new set of prices; the fiduciary money would *take the place of* gold—would be used as a substitute for gold.* But it would still affect the value of money generally; it would theoretically cause a fall in the value of money throughout the gold-using world, for it has the same effect on the total quantity of gold as an increase of gold itself.

Now suppose that, while a country is thus employing the debased coins as of equal value to full-weighted ones, prices happen to rise above the level of those existing in other countries, as might occur in consequence of a decrease in the volume of trade, the total currency of the country would be excessive. In ordinary circumstances, if there were no debased coins, i.e., no fiduciary money in the country, the excess of currency would be exported in accordance with the law of distribution. But seeing that part of the currency is fiduciary, the conditions are different, and one of two things will happen. Either the fiduciary portion of the debased coins will cease to take the place of gold, and will become depreciated, with the results we have already seen, or else they will continue to take the place of gold, and some of the full-weighted coins will be exported.

The reason for the exportation of the full-weighted coins,

* *Vide*, Part II, p. 166.

instead of the debased ones, is found in the fact that the fiduciary portion of the debased coins has no value abroad, and the purchasing power of a debased coin is therefore less abroad than at home, and will consequently not be exported.

Gresham's Law

This doctrine is known as Gresham's Law, after the name of Sir Thomas Gresham, who propounded it in the reign of Queen Elizabeth, when he was Master of the English Mint. Sir Thomas Gresham did not, however, state the proviso that the exportation of the full-weighted coins would only take place if the total currency of the country became excessive. Prof. F. A. Walker points out that it was Ricardo who made that necessary proviso, and the law, as modified by Ricardo, may be stated as follows:

" When the total currency of a country is excessive, bad money will always drive out good money; but good money cannot drive out bad money."

If we put this law into the following form we shall see its application, as we advance in the subject, in other instances than that of the debased money, which has just been cited—

When some other form of money *takes the place of* commodity money and the total currency of the country is excessive, those forms which contain the least amount of commodity in them, or none at all, and whose purchasing power at home is equal to commodity money, will always displace those forms which have the most amount of commodity in them.

This displacement of gold from the country which uses a non-depreciated fiduciary money, causes a fall in the value of money generally throughout the gold-using world; the extent of the fall depends, of course, on the amount of gold displaced, which may be so small as to make no appreciable difference, but when many countries use large quantities of fiduciary money, the fall in the value of money may be considerable.

Lastly, let us suppose that the quantity of debased but

undepreciated coins were so great that all the full-weighted coins were exported from the country.

The country would cease to have any standard money; but its standard would still be gold, though less gold in the form of coin would be equal to a greater quantity in the form of bullion, and token gold prices at home might be on a level with commodity gold prices abroad. But if once the total currency became excessive, and prices at home began to rise in consequence, what would happen? The result would be what is known as " inflation "; instead of the rise of prices bringing about an export of the excessive currency and a restoration of the general level of prices, no such export of gold would occur, because the purchasing power of the tokens at home would be greater than abroad, where the fiduciary portion is valueless. Such an inflation is a depreciation of the fiduciary portion of the debased coins, for the fiduciary portion ceases to *take the place of* gold, and prices in terms of the tokens are higher than would be prices in terms of full-weighted coins if such could be maintained in circulation; the market price of bullion, moreover, would be higher than the theoretical and practical mint price.

The inflation might proceed and prices rise until the fiduciary portion of the coins lost all its purchasing power, and the token coins therefore possessed as great a value abroad as at home.* Any excess of currency above that point would be *exported.*

Inflation involves a loss to all creditors and a corresponding gain to all debtors, in just the same way as a fall in the value of the world's supply of money due to an increase in the production of the precious metal.

It is, however, conceivable that the debased coins might become popularly distrusted, and that a number of people might, in consequence, abandon the use of them altogether and either resort to barter or cease business altogether; if this occurred the diminished demand for the coin would

*The Foreign Exchanges would also become adverse (*v.* Part I, p. 24, and Part II, p. 166).

have the effect of hastening the depreciation to its ultimate limit.

Such are the principles governing the circulation of fiduciary money, whether it be in the form of debasement, seignorage or paper.

Let us examine the application of these principles to the two last mentioned forms of fiduciary money.

CHAPTER V

Fiduciary Money in the Form of Seignorage or a Coinage Charge

THE original signification of the word seignorage was the abstraction by the seignor of a certain amount of metal before its manufacture into coin, but since the right of coining is now a prerogative of the Government, the profit, or compensation, which was formerly claimed by the seignor, now goes to the Government. The amount of metal abstracted by the mint may be either only just sufficient to cover the cost of coining, or it may be more. For expressing a charge by the mint, which just covers the cost of coining, the term Brassage was invented by Mr Chevalier; a charge which is in excess of brassage, i.e., which is a source of revenue to the State, is called seignorage.

If neither brassage nor seignorage are charged, the theoretical mint price of the metal equals, as we have seen, the practical mint price; but if either of these charges are imposed, the theoretical mint price must be higher than the practical mint price, for it will be remembered that we defined the theoretical mint price as the number of coins into which a given quantity of metal is manufactured, and after the mint has deducted a portion of these for itself, the remainder is given to the seller of the metal, and is the practical mint price.

The seignorage might be charged by either raising the theoretical mint price or by lowering the practical mint price.

1. Raising the Theoretical Mint Price

If the metal is coined gratuitously, the theoretical and practical British mint price of one oz. of British standard

gold is £3 17s. 10½d., i.e., one oz. is coined into a number of coins called £3 17s. 10½d. Suppose the theoretical mint price to be raised by coining one oz. of gold into, say, £3 18s., of which £3 17s. 10½d. is given to the seller of the metal (and is the practical mint price of one oz. of standard gold) and the other 1½d. is retained by the mint. So long as the currency were not excessive, less than one ounce of standard gold in the form of coin would be worth as much as one ounce of standard bullion at home, or in other words, the practical mint price would be the same as the market price, and £3 18s. would consist of £3 17s. 10½d. commodity money and 1½d. fiduciary money. If, however, the total currency of the country became excessive, prices would rise; the greater the amount of seignorage, the higher would be the possible rise in the level of prices, and the market price of bullion would rise above the practical mint price towards the theoretical mint price. Moreover, this rise in prices would be an inflation of the currency, and would bring with it all the ills attendant thereon (*v.* p. 27), for the excess currency would not be exported until prices rose to that point, when the £3 17s. 10½d. of the token money would purchase less at home than it would abroad.*

This method of charging seignorage has only been employed with the express object of obtaining revenue by defrauding the people. The circulating medium has from time to time been deprived by various European countries of both weight and fineness, till the quantity of pure metal in the coin has been reduced far below the original legal quantity, i.e., the theoretical has been raised above the practical mint price (*v.* p. 48).

The ill effects of such an inflation " being brought about by legislation or by the act of the prince, is properly termed confiscation, . . . and such a measure becomes a highly destructive force in the field of present and future industry, dealing a grievous blow at all the instincts of frugality in the individual and at the organization of the industrial body for

* The Foreign Exchanges would also become adverse (*v.* p. 166).

purposes of production and exchange" (Walker's *Political Economy*).

2. Lowering the Practical Mint Price

Suppose that instead of raising the theoretical mint price the practical mint price were to be lowered. One ounce of standard gold would still be coined into £3 17s. 10½d. (the present legal theoretical price), but only, say, £3 17s. 9½d. would be given to the seller of the metal (and would be the new practical mint price), the other penny being retained by the mint as brassage to pay for the cost of coining. So long as the currency is not excessive, prices of commodities remain the same, and the seller of the metal therefore loses one penny on every ounce he sells the mint; less than one ounce of coin is worth one ounce of metal at home, the practical mint price of metal is the same as the market price and lower than the theoretical mint price, and £3 17s. 10½d. consists of £3 17s. 9½d. commodity money, plus 1d. fiduciary money.

If the loss incurred by sellers of metal to the mint had the effect of, to some extent, discouraging coining, prices might fall till £3 17s. 9½d. at home had the same purchasing power as £3 17s. 10½d. had formerly had (Note: The Foreign Exchange would in this case become favourable, *vide* Part II, pp. 164 and 165), and the new general level of prices at home, which would correspond to that prevailing abroad, would be a lower one than previously; but if the total currency increased, the fiduciary portion of the coins would lose value, i.e., become depreciated, and prices might rise until they again reached the old level before any exportation of coin would commence (*vide* Part II, pp. 164 and 165).

Arguments for and against Coinage Charge

The opinion of economists as to the advisability of a coinage charge is divided. Some contend that the cost of minting should be paid by those who want the metal coined, and not by the whole community; that if no brassage is charged, an excess of currency will be relieved by the melting

down of coins for export, with the result that a continuous practice of alternately melting and recoining increases the public cost of the mint. On the other hand, it is argued that this alleged additional cost of the mint's upkeep must be very small, since the mint's staff and equipment has to be maintained just the same, even if its work were not increased by the melting down of coins for export; moreover, this slight extra cost to the State is more than compensated for by the readiness with which the least excess of currency is relieved by the export of coin.

Effect of Seignorage

So much for brassage, but suppose that instead of retaining only one penny, the mint were to charge a seignorage of, say, 5½d. as State revenue, giving the seller of an ounce of metal only £3 17s. 5d., the result would be to discourage coining to a great extent, a fall in the value of the money of the gold world, a great quantity of fiduciary money which could not be detached from the token coins, and a fall in the general level of prices, which would be accompanied by those evils to the domestic and foreign trade of the country which attend a decrease in the quantity of the world's commodity money. A mint charge on the manufacture of the standard metal that exceeds the cost of coining is strongly deprecated by all economists.

CHAPTER VI

THE effects which we have just seen are produced on the value of the money of gold standard countries by the use of fiduciary money in one or more gold countries, are similarly produced on the value of the money of silver standard countries, when one or more silver countries use fiduciary money.

Summary of Currency Systems

We may now summarize the several kinds of currencies which we have to this point seen that a country may employ.

The currency of gold standard countries may contain a quantity of gold tokens or consist of nothing but gold tokens.

The currency of silver standard countries may contain a quantity of silver tokens or consist of nothing but silver tokens.

Use of both Gold and Silver in one Country as Money

Now the existence of two standards in the world, viz., the gold-standard and the silver-standard, causes great embarrassment to the trade between gold countries and silver countries (*vide*, p. 46),* for the relative values of gold and silver are liable to fluctuation. At one time 15 oz. of silver may be worth one ounce of gold, at another 20 oz. of silver may be worth one ounce of gold; at the present moment the ratio is about $31\frac{1}{2} : 1$. Consequently the value of money in gold-standard countries does not maintain a fixed ratio to that of money in silver-standard countries, and the variations in the value of the one are quite distinct and separate from those in the value of the other.

* *v.* also Appendix M.

For example, an increased production of gold, while it lowers the value of money in gold countries, will have no effect on the value of money in silver countries, and vice versa.

The question therefore arises, what would be the effect on the value of money both in gold and silver countries by the use of both metals in both sets of countries?

Let us suppose that a country whose currency consists of gold commodity money introduces a silver commodity money to circulate concurrently with the gold, silver metal, like gold metal, being coined without restriction.

Silver would, like gold, have a theoretical mint price fixed by law. What would that theoretical mint price be?

Theoretical Mint Price of Standard Gold

In the case of gold the theoretical mint price has been fixed in Great Britain as follows:

One ounce, i.e., 480 grains of standard gold, are coined into £3 17s. 10½d. But standard gold is not pure gold; in one ounce of standard gold there are 40 grains of alloy, for only $\frac{11}{12}$ths of the weight of standard gold are pure metal. Hence one ounce of standard gold, or 440 grains of pure gold, are coined into £3 17s. 10½d. (*v.* pp. 8, 137).

Theoretical Mint Price of Standard Silver

Now it has been determined by British law that one ounce of British standard silver shall only contain 444 grains of pure silver, and 36 grains alloy.

Hence, if gold and silver are of equal value, i.e., in the ratio of 1 : 1, the theoretical mint price of 440 grains pure silver will be £3 17s. 10½d., and that of 444 grains, i.e., one ounce standard silver, will be a little more, viz., £3 18s. 7d.

So long as the ratio between gold and silver were 1 : 1, £3 17s. 10½d. in gold money would equal £3 17s. 10½d. in silver money.

But suppose that at the time that the theoretical mint price of silver was fixed, the ratio between gold and silver was

14·28 : 1, what would be the theoretical mint price of 440 grains and 444 grains of pure silver respectively? Obviously the price of 440 grains pure silver would be $\frac{1}{14\cdot28}$ of £3 17s. 10½d., i.e., 5s. 5d., and the price of 444 grains pure silver would be $\frac{1}{14\cdot28}$ of £3 18s. 7d., i.e., 5s. 6d. per standard ounce (*vide also* p. 143).

So long, therefore, as the ratio between the gold and silver metals remained 14·28 : 1, £3 17s. 10½d. of gold money would be equal in value to £3 17s. 10½d. of silver money (*v.* p. 34).

Similarly in silver countries gold would have a fixed theoretical mint price, and gold money and silver money would always be exchangeable at a fixed ratio.

There would then no longer be two standards in the world, gold and silver would form together one standard, and prices of commodities would be the same in gold as in silver, so that a fixed rate of exchange would be established between all countries using either gold or silver, or both gold and silver (*v.* p. 46).

We shall presently see whether it is possible to maintain a fixed ratio between the metals and thereby establish this single standard which is composed of two metallic moneys, and is called a bimetallic standard.

Alteration of Ratio between Gold and Silver

Since, however, in spite of the operation of influences which tend to steady the ratio between the metals, the fact remains that the ratio does continually alter, we must inquire first what effect is produced on the value of money of a country which uses both metals as money.

Suppose the value of silver were to fall from 14·28 : 1 (at which rate the theoretical mint price of one ounce of standard silver was fixed at 5s. 6d.) to 16 : 1, one of two things would happen, viz.:

(1) Either the people would refuse to accept the silver money at the ratio of 14·28 : 1, i.e., more than 14·28 times 5s. 6d. in silver money would have to be given in exchange

for £3 18s. 7d. gold money, in which case the silver money would be a depreciated token, and silver prices of commodities would vary from gold prices; or (2) the people would be willing to circulate the silver money at the legally fixed ratio of 14·28 : 1, and gold money would be exported in accordance with Gresham's law.

The first of these alternatives involves the same embarrassment in the exchange between gold and silver money *at home*, which is experienced in the *foreign exchange* between gold and silver countries (*v.* p. 33). This, therefore, requires no further consideration.

As regards the second alternative, the question arises how much gold will the silver money cause to be exported? The answer is, that if the people are willing to circulate it at the legally fixed ratio of 14·28 : 1, in spite of fluctuations in the ratio between the metals, the amount of gold that would be displaced would depend upon the amount of silver that was put into circulation.

There are three systems on which the silver money may be made to circulate at a *fixed ratio* with gold money in the same country, and thereby to displace a quantity of gold, viz.: (1) A restricted coinage of limited legal tender silver tokens; (2) A restricted coinage of unlimited legal tender silver tokens; (3) An unrestricted coinage of unlimited legal tender silver coins.

We will take them in order.

CHAPTER VII

1. Restricted Coinage of Limited Legal Tender Silver Tokens

UNDER this system the silver token, which is not coined without restriction, is declared by law to be only a limited legal tender. Prof. Jevons gives this system the name of "Composite Legal Tender," and describes it as a system of maintaining one kind of coin as the principal legal tender in which all large contracts must be fulfilled, while "coins of other kinds of metals may be ordered to be received in limited quantities as equivalent to the principal coin (gold)."

No Fixed Practical Mint Price of Silver

Under this system the mint does not, as in the case of the unrestricted coinage of gold, give always a fixed number of silver coins per ounce for all the silver that is offered it, i.e., there is no *fixed* practical mint price for silver.

The mint only buys a limited quantity of silver, and pays for it at the gold market price of the day, that is to say, the practical mint price of silver varies with, and is the same as, the gold market price of silver.

The theoretical mint price of standard silver is, as we have seen, 66d. per oz., or 66s. per lb., and if the ratio between the metals were 14·28 : 1, the practical mint price of one ounce of standard silver would be the same, but if the ratio were to alter, the practical mint price would alter also. Suppose the ratio between the metals were to become 31·44 : 1, what would be the practical mint price of one ounce of standard silver?

The weight of pure silver contained in 66d. of silver coins is 444 grains.

The equivalent quantity of pure gold is therefore $\frac{1}{31\frac{1}{11}}$ of 444 = 14·12 grains gold.

If, therefore, we find the amount of gold money into which 14·12 grains pure gold is coined, that will be the gold price of silver when the ratio is 31·44 : 1.

Since 440 grains pure gold are coined into £3 17s. 10½d., one grain pure gold is coined into £3 17s. 10½d. ÷ 440; and 14·12 grains pure gold are coined into £3 17s. 10½d. ÷ 440 × 14·12, which equals 30d. (*v.* pp. 149, 150).

Hence the mint will only give 30d. in gold money for one ounce standard silver, and retains the difference between 30d. and 66d., viz., 36d. as a seignorage of 120%, and this seignorage varies with the ratio between the metals (*v.* Part II, p. 155).

Regulation of Silver Money

The number of silver coins which is put into circulation is, in England, regulated by the banks, who obtain it for their customers from the mint, by paying gold for it at the fixed ratio of 14·28.

Consequently no more silver coins are bought than are actually required for currency purposes, because there is no object in buying more than is necessary of coins which only contain a quantity of metal that is of less value than the gold coins with which they are bought, for *there is no profit to be gained out of selling silver to the mint to be coined into silver coins.*

The necessity of employing silver tokens in a gold-standard country arises from the inconvenience which would be experienced if gold alone were used in the exchange of articles of very small value; for the gold coins would have to be of so diminutive a size that there would be great danger of losing them.

The law of limited legal tender forces the token silver money to circulate at a fixed ratio with the commodity gold money in limited quantities only. In Great Britain no one is obliged to accept more than £2 in the form of silver tokens; they may accept more if they like, but anything over £2 need not be accepted at the fixed ratio.

If the Government were to force a larger number of silver coins in to circulation than were required, they would be liable to become depreciated. This depreciation might, however, to some extent be avoided by making the tokens redeemable in gold commodity money.

The effect on the value of the world's money, which is produced by this system of circulating silver money in a gold-standard country, is to lower the value of money in gold countries and raise the value of money in silver countries.

CHAPTER VIII

2. Restricted Coinage of Unlimited Legal Tender Tokens

UNDER this system the silver tokens are made unlimited legal tender, but, just as under the last described system, there is no profit to be gained by purchasers of silver coins; and those coins are liable to become depreciated if they are not favoured by the people.

If issued in such quantities as to cause a scarcity of gold, the gold will command a premium in terms of the tokens, when it is badly required, either for export or other purposes.*

This is the present currency system of France, half of whose stock of metal consists of silver; and a demand for gold from the Bank of France for export purposes is checked by putting a premium on gold bars and foreign gold coin (*v.* pp. 109, 182).

If ultimately all the gold were to be exported, the total currency of the country would consist entirely of silver tokens, although the professed standard of the country would be a gold one. In such circumstances, an excess of the total currency would cause an inflation, because the excess would not be exported until it became so depreciated that the purchasing power at home of a silver token was as great as the purchasing power abroad of the pure silver metal contained in it.

It will thus be seen what careful judgement should be exercised in determining the legal ratio between the gold and silver coins of a country whose standard is gold, but in which the currency consists principally of silver token money, as is

* Similarly, in a country where credit is very extensively used, if the public confidence is shaken, an unusual demand for the metal may give rise to a premium on that metal in terms of credit.

the case in India at the present time (*v.* Part II, pp. 145, 150–152, 163).

The effect of this system on the value of the world's money, is to lower the value of money in gold countries and raise it in silver countries.

CHAPTER IX

Bimetallism, or an Unrestricted Coinage of Unlimited Legal Tender Gold and Silver Money

THIS is a currency consisting of both gold and silver, which are, both of them, unlimited legal tender, and together form the common denominator of value and standard of deferred payments; both are coined by the mint without restriction and are forced by law to circulate at a fixed ratio between them, but there is no law enabling the holder of silver to obtain gold for it at that fixed ratio; i.e., silver is not by law declared exchangeable for gold at a fixed ratio. This was for some time the currency system of a number of European countries, known by the name of the Latin Union (*v.* p. 50). We will now give an outline of the controversy which has for many years raged between those who advocate a monometallic standard, or a standard in which one only of the metals is unrestricted as to coinage, and those who uphold a standard composed of the two metals coined without restriction (i.e., bimetallism).

We have now seen that if the market ratio between the metals were constant, the ratio between the moneys would be constant, and that, consequently, in such a case there would be no need to restrict the coinage of either metal (*v.* pp. 34, 35).

It follows that *if some means could be devised to preserve a constant ratio between the metals, we should have the bimetallic standard an established fact.* The question then is, can any means be devised to maintain a fixed market ratio between the metals?

This question was at one time answered in the negative; it was held that no law, either of any one Government separately, or of all the Governments of the world—or at least the principal mercantile countries—could ever maintain

unlimited quantities of gold coin and silver coin in circulation if they agreed to enact a uniform ratio, because the natural laws of supply and demand could not be altered by any Government law. But it is now acknowledged that Government law can unquestionably influence the natural laws of supply and demand, by simply declaring both the metals as legal tender. Suppose, e.g., that to-day the market ratio of the metals is 15 : 1, that is, that one ounce of pure gold will command in exchange 15 oz. of pure silver, and let us suppose also that the Government declares that this shall also be the mint ratio, i.e., Government decrees that 15 oz. of silver shall be coined into pieces which shall have the same power in the payment of debts as the number of pieces into which one ounce of gold is coined; and that anyone shall have the right to take as much of either metal as he chooses to the mint and get it coined into money. So long as the market ratio of the metals remains 15 : 1, there is a pure bimetallic standard. But suppose the market ratio altered to say $15\frac{1}{2}$: 1, the silver money would become a token money and the bimetallic standard would cease to exist, unless the silver could by some means be forced back to the ratio 15 : 1.

A Fixed Market Ratio between the Metals can be Established

Bimetallists claim that this could be done; that the value of silver could be raised again, or the value of gold lowered, in such a way that the ratio would be permanently maintained at very nearly 15 : 1. This, they assert, could be effected by the increased demand for silver, which would spring from two causes, viz.: (1) The wish to obtain the profit that could be derived from getting the silver coined, and (2) the natural desire of debtors to discharge their obligations in the tokens, because they are made of the cheaper metal.

This demand for the cheaper metal acts in direct contravention to the forces which are tending to lower its value, and at the same time the other metal, which, by the operation of natural causes, becomes dearer, falls out of demand.

"If the gold price of uncoined silver is below the bime-

tallic ratio, debtors will pay in silver, and if the silver price of uncoined gold is below the bimetallic ratio, debtors will pay in gold. Thus the demand will always be thrown on the cheaper metal and the bimetallic ratio will be preserved " (Farrer). Moreover the dearer metal will be exported and offered for sale in foreign markets, and its value be thus reduced.

Monometallists' Contention that Gold will be Exported

The monometallists concede to the validity of the first part of this argument, viz., that the Government can thus influence the demand for the cheaper metal, but they dispute its ability to sufficiently check the tendency of the market ratio to diverge; they therefore assert that the stock of dearer metal will after a time be exhausted by exportation—in accordance with Gresham's Law.

To this the bimetallists reply that the Government can always arrest a drain of the dearer metal whenever they wish, and that even if all the dearer metal were to leave the country and thus involve the failure of the bimetallic system, it could result in no catastrophe, because the bimetallic country would then simply be converted into a monometallic one. Moreover, they say that it does not by any means follow that the conditions would be so extremely adverse to bimetallism as to have the effect of entirely exhausting the stock of the dearer metal. "The length of time during which the drain of the dearer metal can be sustained without exhaustion will (given the rate of movement) depend solely on the stock of that metal existing in the bimetallic countries jointly when the drain begins," so that " for every gold state which adopts the bimetallic system, the amount of gold available in the case of a cheapening silver to meet the drain of the dearer metal (on which the virtue of the bimetallic system depends) is increased; while the demand for gold in preference to silver at the legally fixed ratio (the only cause which threatens the stability of the bimetallic system) is in just so far diminished. On the other hand, every silver state that adopts the bimetallic

system, strengthens that system in the case of a cheapening gold " (Walker, *Money, Trade and Industry*). Thus it is seen that the bimetallists do not propose the adoption of bimetallism by one state alone, but by a union of states, all of which simply agree to coin at a certain fixed ratio, and they assert that if every country were to adopt that system, there would be little or no chance, theoretically, of any one state being at any time entirely drained of the dearer metal.

Further Monometallist Contention

A further objection of the monometallists is that the power of a Government law to influence value is limited. Mr Farrer says, in his *Studies of Currency*, " If the Government of any great nation were to make aluminium or platinum its standard of value, to coin it freely and to make it legal tender, it would probably thereby raise the value of aluminium or platinum. But there are obvious limitations to this supposed effect of the law of legal tender. If any Government, or if all Governments together, were to do such a foolish thing as to attempt to make slate stones legal tender, . . . they might create confusion, but certainly would not be able to add much value to slate stones, or make them pass as current coin. . . . Laws are effectual, as they are in accordance with habit. . . . Suppose, e.g., that a law were adopted in England making silver legal tender at a ratio of 16 : 1. In the case of existing contracts the result would be a great deal of fraud and robbery; in the case of future contracts the result would probably be as has already been the case both in London and New York, that contracts would, in spite of the law, be made in gold, and we should have a standard adopted by the people themselves side by side with a different legal standard of value imposed by law."

Arguments for and against the Adoption of Bimetallism

Let it be granted, for the sake of argument, that the bimetallic system could maintain a fixed market ratio between the two metals, or that it could prevent a wide divergence,

what are the arguments in favour of and against its adoption?

The first advantage claimed by bimetallists is that the variations in the value of money as the standard of deferred payments would be less extensive if the two metals were held together and conjointly made the standard than are the variations in the value of a money standard which consists of either one of the metals singly. The more irregular the supply of the two metals, the less would be the degree of fluctuation in the value of the two combined by a fixed ratio, because a " compensatory action " is thereby set up between them, " by which the cheapening metal receives a larger use, while the appreciating drops partially out of its former demand, thus making the two fall together if there must be a fall, or rise together in the opposite case; or conceivably making the tendency of one to fall precisely counteract the tendency of the other to rise " (Walker, *Money, Trade and Industry*). It is very probable that the changes in the value of money consisting of the two metals, would be far more frequent than those occurring in the case of money composed of only one of them, but the changes would, on the other hand, probably be far less extensive.

A second advantage claimed by the bimetallists for their system is that gold is becoming too scarce to supply currency demands. To this the monometallists reply that there is but little chance of there being a scarcity of gold, for some countries use paper almost entirely for currency purposes, whilst other countries economize the use of gold by a system of credit (*v.* p. 62). To say that gold will become scarce in the future is a mere matter of speculation, no one can say whether such will be the case or not.

A third advantage claimed by the bimetallists is that a fixed rate of exchange would be established between those countries which use a gold standard and those using a silver one. This is an object which every one desires, for a *fixed par of exchange* (*v.* pp. 135, 143) between gold and silver countries

would be of immense benefit to the trade and production of the world.

Finally, the monometallists dispute the possibility of a satisfactory international agreement ever being arrived at as to what should be determined upon as the fixed mint ratio between the two metals. Various ratios have been suggested, 25 : 1, 23½ : 1, 15½ : 1, etc.

Suppose the ratio adopted were 15½ : 1, "what," asks Mr Farrer, "do bimetallists expect to be the specific effects of the adoption of their proposed ratio on the business of this country and of the world?" One clear result would be "that those who own silver, either in mines or in hoards, would be able to make one silver dollar go as far as two now go. An excellent thing for them, no doubt, but how about their creditors and customers?" Thus the difficulty is that at the discussion of the ratio by an International Conference, each nation would have different interests to represent; and yet an international agreement would be necessary, for if each nation were to adopt a different ratio, the metals would flow to those countries where they were given the greatest value, and the several countries would be obliged to readjust their ratios from time to time.

Such is the outline of the bimetallic controversy; let us now briefly describe the European history of the existence and final abolition of bimetallism. Let us take the case of England first.

CHAPTER X

The Original Standard of England was a Silver One

"IT was Charlemagne of France who instituted the system of coinage, which was originally adopted by all the countries of Western Europe—France, England, Italy, Spain and Scotland, based on one pound weight of silver, silver being the standard. No coin of this actual weight was ever struck, but a pound weight of silver metal was divided into 240 coins, called denarii, or pennies, twelve of these pennies were termed a solidus, or shilling, and therefore 20 shillings actually weighed a pound of silver bullion" (Macleod's *History of Economics*).

Raising the Theoretical Mint Price of the Standard Metal

When the monarchs of these countries were in want of money to pursue their various extravagances, seeing that they could not increase the quantity of the metal, they adopted the fraudulent plan of surreptitiously cutting up the pound of silver into a greater number of pennies than 240; in England, in 1816, the pound silver was coined into no less than 744 pieces, but they were still called by the same name, viz., pennies. As the theoretical mint price of silver was originally 240 pennies to the pound, and as there are 12 oz. in a pound, it is clear that one ounce was coined into 20 pennies, and as the value of bullion is reckoned by the ounce, the theoretical mint price of silver was originally 1s. 8d. per ounce; moreover, since no charge was made for the coinage, the theoretical and practical mint prices of silver were equal.

When, however, 744 pennies were made out of a pound, the theoretical mint price of silver was raised (*v.* p. 30) thereby to 62 pennies per ounce, or in other words, 5s. 2d.

per ounce, but the practical mint price was still 1s. 8d., because that was the price which the mint gave for one ounce of metal, retaining the difference, viz., 3s. 6d., as a revenue for the monarch. Thus the standard silver money became a token.

Now if, in these latter circumstances, the mint-debased coins had not been circulated at their professed equal value with the coins of full legal weight and fineness, an excess of the total currency would have caused a depreciation, which would have been evidenced by a divergence between the market price and the practical mint price of bullion (*v.* pp. 24, 30). As it was, however, the coins of full legal weight and fineness were, in accordance with Gresham's law, exported; ultimately the currency became inflated, the foreign exchanges became adverse, and terrible distress and confusion were brought about, ruining merchants and driving away commerce from the country.

Bimetallic Standard in England

From 1257-1666, gold and silver circulated in England concurrently, and the legal ratio between them was altered from time to time in harmony with alterations in the market ratio between the metals. From 1666–1717, the system was that of an unrestricted coinage of both metals, one of the moneys being a depreciated token (*v.* p. 24), and in 1695 and 1696 gold guineas, which had been originally struck by the mint as equal to 20s. in silver—the ratio between the market value of gold and silver at the time—were being exchanged for 30s. in silver money.

This was due to several causes—silver coins were shamefully worn, clipped and degraded, gold was becoming more abundant, and people preferred gold to silver, so that the demand for gold was increasing. At length Parliament recoined the degraded silver at the old standard of weight, fineness and denomination. It cost £3,000,000, but as soon as the new coin was issued, it was hoarded or exported to purchase gold, with the result that the quantity of gold was

increased and a small quantity of degraded and depreciated silver remained in circulation.

A bimetallic system was introduced by the Treasury fixing the price at which the guinea would be received by the Government, and from 1717–1816 the English currency was theoretically a bimetallic standard one. The silver price at which the Treasury ultimately fixed the gold guinea was 21s., but since, as was pointed out by Sir Isaac Newton at the time (1717), the real market value of the guinea was only 20s. and 8d., it was a token gold money, 4d. of it being fiduciary, and in accordance with Gresham's law, the silver was exported as soon as the total currency became excessive.

A dearth of silver caused gold to become generally recognized as the standard money, and it was freely minted into guineas. At the great recoinage of 1816 the bimetallic standard was definitely abandoned and a single gold standard was established; the sovereign, or pound in gold, was then coined to contain $\frac{20}{21}$ parts of the weight of the gold which had been previously coined into one guinea, and silver was used for token money only.

Origin of the English Gold Standard

Thus the token gold money became the standard money, the full-weighted silver coins which had formed the original standard were exported and the debased silver coins became tokens.

History of the Latin Union.—Now let us take the modern history of other European nations. France had a bimetallic standard from 1803 to 1873. In 1865, France, Belgium, Italy and Switzerland agreed to maintain the bimetallic system of currency, with a mint ratio between the metals of $15\frac{1}{2} : 1$, and together formed what is known as the Latin Union.

This convention was framed to continue for fifteen years. Each country agreed to receive the full legal tender coins of any of the other three countries in unlimited quantities, and to redeem its own coins in gold or five franc pieces during

the existence of the convention, and for a period of two years after its termination.

"In 1871 the currency systems of the various European States were as follows:

Gold Countries	*Gold and Silver Countries*	*Silver Countries*
Great Britain	France	Germany
Portugal	Italy	Sweden and Norway
Turkey	Belgium	Denmark
	Switzerland	Holland
	Greece	Austria
	Russia	
	Spain	
	U.S.A.	

"Between 1871 and 1873 Germany adopted a gold standard. This demonetization of silver by Germany, who carried with her the Scandinavian countries, the extensive European circulation of inconvertible paper, the increased quantities of India Council Bills and the greatly increased production of silver metal, all combined to reduce the gold market price of silver metal."

"So heavy a reinforcement of the gold states," says Prof. F. A. Walker, "so great a weakening of the silver states, so vast an accumulated mass of silver subject to immediate sale, so great a strain on the gold market from the new German demand, manifestly were fraught with peril to the bimetallic system. France and her allies had held the balance between the two groups, throwing so much weight as was needed—now into the gold scale, now into the silver scale—and thus preserving nearly an equivalency between them. The difficulty of keeping up the system, the danger of its ultimate failure, were increased by the transference, bodily, of all Germany and Scandinavia to the gold side. Gold, hitherto (since 1851) the cheaper metal at $15\frac{1}{2} : 1$, now threatened to become the dearer; and with so few states remaining to take silver, and so many states demanding

gold, the strain on the bimetallic system was likely to be severe and protracted. The statesmen of France and Belgium lost heart, and in 1874 limited the silver coinage. Two years later, finding the forces operating to send down the value of silver to be powerful and persistent, the Latin Union, to which Greece had in 1868 acceded, stopped the coinage of that metal altogether."

Bronze Money

Coins of bronze are also used concurrently both in gold- and in silver-standard countries. Bronze is an alloy, of which ninety-five parts are copper, four tin and one zinc. These are always tokens which contain a large fiduciary element in them. The use of them, of course, lowers the value of the money of both the gold and silver worlds.

Further addition to List of Currency Systems

We may now add to our description of gold-standard currency systems and silver-standard currency systems, given on page 33, that the currency of gold-standard countries may contain a quantity of tokens of silver and of bronze, whether depreciated or not, or it may consist of nothing but those tokens. The bimetallic system exists in theory only.

CHAPTER XI

Fiduciary Money in the Form of Inconvertible Paper

By inconvertible paper we mean a fiduciary money, which consists of pieces of paper of special design, which are not by law made extinguishable by redemption (*v.* p. 65) in commodity money, either on demand or at a fixed future date, but which are intended to be circulated at the value of the commodity money whose name they bear upon their face.

We have seen that a token silver money may circulate in a country at a much higher value than that of the metal it contains, and that it is for the very reason that it contains fiduciary money that it will not be exported. In just the same way, the circulating value of inconvertible paper money is far greater than the value of the paper of which it is made, and it cannot be exported, because it has no value at all abroad; moreover, just as the Government makes a profit (called a seignorage) consisting of the difference between the circulating value of token silver coins and the market value of silver, so also it makes a profit out of inconvertible paper money, a profit which consists of the whole of the value which it receives in exchange for the paper money, a profit of 100 per cent, for the whole of the inconvertible paper is fiduciary money.

This profit forms the principal reason for the issue of inconvertible paper money. Given that a country uses a certain amount of commodity money, which is determined by the agent price, the introduction of paper money into circulation causes an excess of currency (unless of course there is a simultaneous increase in the demand for money caused by an augmentation of the volume of trade).

This excess of currency must bring about one or other of the following results:

(1) If the people are willing to circulate the paper at its nominal value, which is always expressed on its face, in terms of the standard of the country (i.e., in terms of either gold or silver, as the case may be), it will *take the place of gold* in a gold-standard country, or of silver in a silver-standard country, and in accordance with Gresham's law a portion of the gold money in the one case, or of silver money in the other, will be exported to make room for it.

In 1797, when the specie reserve of the Bank of England had dwindled down to £1,000,000, the Government restricted the bank from redeeming the paper notes which it had issued to the public, i.e., the bank's redeemable paper notes were declared to be inconvertible paper money, and for a time they circulated at par with gold (*v.* p. 96).

(2) If, however, paper money is issued to such an extent that the people are unwilling to accept it at its face value, the excess so issued will, instead of displacing the standard, cause a depreciation to some extent of the whole of the paper money, the depreciation being evidenced by a rise in the paper price of bullion and other commodities; i.e., there will be two sets of prices, viz., gold prices and paper prices.

The inconvertible notes of the Bank of England became in this way depreciated in 1809. In 1811 (the mint price of an ounce of standard gold being £3 17s. 10½d.), the paper price was £4 4s. 6d. In 1812 it was £4 15s. 6d.; in 1813 it was £5 1s., and in 1814 it was £5 4s.; and at the same time the foreign exchanges were correspondingly adverse (*v.* pp. 161, 171).

It was at this time that Lord King enunciated the following law: "The rise of the paper price of bullion above the mint price, and a continuous state of the foreign exchanges below the limits of the real exchange (*v.* p. 168), are the proof and measure of the depreciation of the inconvertible paper currency."

If in such circumstances the total currency were to again become excessive, the following phenomenon might be observed, viz.:

Before the excess were exported, in the form of more gold,

the paper prices of other commodities would be higher than the paper price of gold, owing to the fact that there would have been two rises in the paper prices of commodities and only one in the paper price of gold.

(3) If eventually the issues of paper became so excessive as to displace all the gold, the currency would be nothing but an inflated paper one.

In 1810 the bullion committee, which met in London to inquire into the cause of the then observed divergence between the mint and paper price of gold, published a famous report, in which it was proved that the divergence between the circulating value of gold and paper was due to the depreciation of the paper; but its recommendations were ignored, and Lord Stanhope passed an Act in 1811, declaring it an offence to exchange a bank-note for less than its nominal gold value, i.e., forcing the paper to circulate at par with gold. The result was the operation of Gresham's law; all the gold left the country and nothing but the paper remained.

In such a case the depreciation of the paper and the rise of prices may proceed to any extent, every issue of paper causing a further depreciation, because the excess can never be exported. In this respect the evil results of depreciated paper may be much more far-reaching than those of depreciated coins, because in the latter case there is a limit to the quantity of the fiduciary money in the coin, whereas paper money is all fiduciary. The foreign trade of the country will cease, because of the difficulty of ascertaining the value of the paper in terms of the world's standards—gold and silver.

" Excessive issues of paper cause prices to rise, without being corrected by international commerce. Consequently the Government, which has issued paper as a measure of resource, soon finds its necessities increasing. It has to purchase services and supplies at higher rates. Soon speculation sets in, forestalling and engrossing begin to operate on the stock of the necessaries of life, and prices rise more and more rapidly " (Prof. F. A. Walker).

Ideal Paper Money

We can now understand why it is that, even if it could be arranged by an International Conference to employ nothing but paper money throughout the world (called "Ideal" paper money), and to abandon the use of such expensive forms of money as gold and silver, there would nevertheless be more scope for the play of injustice, through fluctuations in the value of money, than there is under the present system of using international commodity money.

For notwithstanding the ability of paper money to perform all the functions of commodity money, there still remains the difficulty of regulating its supply in such a way as to give it a steady value. It would always be liable to be issued in excess of the requirements of trade, inasmuch as, unlike commodity money, it has no natural cost of production, the cost of the paper being inappreciable.

CHAPTER XII

Extinction of Inconvertible Paper

BUT paper money may be extinguished. The Government which issues it may redeem it by restoring to the holder, in the form of commodity money, the value which the Government originally received in exchange for the paper at the time of issue, and it may then be cancelled—destroyed—for ever. If not so extinguished, the effects of paper money, like those of any other fiduciary money, are *permanent*, i.e., either gold is permanently displaced, or paper prices are permanently raised by depreciation.

If, on the other hand, the Government were to subsequently cancel the paper, those effects would only have been of a *temporary* nature, for the extinction of the paper must naturally restore the value of money to what it would have been if there had been no paper at all, and the issue of the paper would, in that case, have been tantamount to a borrowing of capital without payment of interest (*vide* Capital and Interest, p. 64 and Appendix B).

The willingness of the people to accept paper money is often largely due to the belief that it will ultimately be redeemed, that its issue is only a temporary loan, without payment of interest. But there are other reasons for its popularity, viz., the prevailing belief that a plentifulness of money is a good thing, and the hopes of the debtor class that the burden of debt will be lightened. The object of issuing inconvertible paper with the intention of ultimately redeeming it, is to obtain a temporary loan without payment of interest.

The Guernsey market is said to have been built in this way—by a temporary loan free of interest charge. Four thousand one pound notes were issued, with which the

artificers were paid, and when the market was subsequently completed and the rents came in, the notes were redeemed.

The issue of the paper displaced a certain quantity of commodity money, and thereby theoretically lowered the value of money generally; the subsequent redemption and cancellation of the paper restored the value of the money to the level that would have existed if there had been no paper at all. At the same time, however, it must be remembered that the stimulus given to trade must have had some effect in absorbing part of the issue of paper without causing any disturbance in the value of money. This is precisely similar to the action of sound credit, which is created solely for the purposes of undertaking new enterprises (*v.* p. 65).

Necessity of Redeeming Inconvertible Paper in Commodity Money

Thus, if inconvertible paper money is redeemed by commodity money, its effects are temporary. But that redemption must be made in commodity money. Promise of redemption in anything else but commodity money usually fails entirely to extinguish the paper, or, at best, the redemption is only a partial one.

Let us take, for example, the case of

Issues of Paper based on Real Property

In 1789, during the French Revolution, it was decided to issue paper money, which should be based on lands that had been confiscated from the church, the idea being that the paper could not depreciate, because it could always be converted into land by the holder. France had already suffered from the results of such issues in the Mississippi scheme of John Law in 1719–21, but in spite of that experience " the Assembly authorized the issue of notes to the value of 400,000,000 francs, on the security of the public lands, and to emphasize this security the title ' assignats ' was applied to the paper. . . . The issue was made, the assignats went into circulation, and soon came the inevitable demand for more.

. . . The decree for a further issue of 800,000,000 was passed in September 1790. Though the opponents of the issue had lost heart and voice, they still polled 423 votes against 508. To conciliate a minority still so large, contraction was provided for by requiring that the paper, when paid into the Treasury, should be burned, and the decree contained a solemn declaration that in no case should the amount exceed 1,200,000,000. On June 19, 1791, the Assembly, against a feeble resistance, violated this pledge, and authorized a further issue of 600,000,000. Under the operation of Gresham's law, specie now began to disappear from circulation. . . . The result was that capitalists declined to embark their means in business. Enterprise received a mortal blow. Demand for labour was still further diminished. The business of France dwindled into a mere living from hand to mouth. This state of things, too, while it bore heavily against the interests of the moneyed classes, was still more ruinous to those in more moderate, and most of all to those in straitened circumstances. With the masses of the people the purchase of every article of supply became a speculation, a speculation in which the professional speculator had an immense advantage over the buyer " (White, pp. 30–34).

In 1792 the assignats were 30% below par, and eventually " an assignat, professing to be worth 100 francs, exchanged for 5 sous 6 deniers, in other words, a paper note professing to be worth £4 sterling passed current for less than threepence in money." In 1796 the law making the paper legal tender at par was abolished, and specie immediately reappeared, the foreign exchanges immediately turned in favour of France, and in a short time the metallic currency was permanently restored.

Issues of Paper based on Taxes

" This," says Prof. Jevons, " would be a fair method of security of value on two conditions: (1) That the taxes, or charges, were themselves levied according to a fixed tariff; and (2) that the quantity of notes issued was kept within

such moderate limits, that anyone wishing to realize the metallic value of the notes, could find some one waiting to pay taxes, and therefore willing to give coins for notes. It is very unlikely, however, that these conditions could ever be fully and conveniently realised in practice." The experience of the American Colonies at the latter end of the seventeenth century and beginning of the eighteenth, furnishes instances of the result of paper issues made for the expenses of Government, and based on taxes, e.g., the issues of Connecticut and of Massachusetts, the latter being made to cover the expenses of the military expeditions against the French in Canada. When the issues were provided for by special taxes, the bills being received by the Treasury at a premium of 5%, the paper did not apparently become depreciated. Prof. F. A. Walker (*Money*, p. 310), says, "that in this instance redundancy and depreciation came primarily, not so much from increasing emissions, as from withdrawing the safeguards thrown around the bills at their issue, extending the time for which they were to circulate, failing to impose and collect the taxes which had been voted for their redemption, or even reissuing bills that had been redeemed and brought into the Treasury for cancellation."

Addition to List of Currency Systems

A further addition may now be made to our own list of currency systems on pp. 33, 52.

The currency of gold-standard countries may also contain a quantity of inconvertible paper, whether or not depreciated, or it may principally consist of nothing but depreciated inconvertible paper.

The currency of silver-standard countries may also contain a quantity of inconvertible paper, whether or not depreciated, or it may principally consist of nothing but depreciated inconvertible paper.

The Six Price Lists of the World

Arising out of these several currency systems there are

to-day six different price lists in existence throughout the world.

(1) A price list in terms of commodity gold, such as the British sovereign. Countries which have this price list may use various substitutes for gold, such as inconvertible paper, or the silver token rupee of India, or the silver token yen of Japan, but so long as the substitutes are not depreciated, the price list is a gold one purely.

(2) A price list in terms of commodity silver, such as the Shanghai tael. The remarks on price list No. 1 apply here also.

(3) A price list in terms of a token, which consists of commodity gold plus a coinage charge, such as the French gold franc.

(4) A price list in terms of a token, which consists of commodity silver plus a coinage charge, such as the Mexican dollar before Mexico adopted a gold standard.

(5) A price list in terms of gold, plus the depreciated portion of an inconvertible paper based on gold, such as the Argentine peso.

(6) A price list in terms of silver, plus the depreciated portion of an inconvertible paper based on silver.

The exchange of money between countries in which these price lists are current is illustrated in Part II.

CHAPTER XIII

Credit

WE now come to the last of the four forms of money which may circulate concurrently in a country, viz., Credit.

"In law, commerce and economics, a credit is called a right of action (chose in action), i.e., the right which one person, the creditor, has to compel another person, the debtor, to pay or do something, and this right of action is termed perfectly indifferently in law and common usage a credit or a debt" (H. D. Macleod). When a merchant buys goods on credit, the goods are exchanged for a right of action; the seller (i.e., the creditor) has a right to demand a specific sum of gold money from the merchant (i.e., the debtor) at a fixed date, and the latter has the duty to pay that gold money at a fixed date; it is a contract between the two parties, and the creditor can, if he likes, sell his right of action to anyone who will take it, the debtor being obliged to pay the person to whom it is sold. Now, in order that these rights of action or credits may be sold, it is necessary that they should be recorded on some material, so as to be capable of being transferred from hand to hand. They are commonly recorded on paper in one of the following four forms: (H. D. Macleod.)

(1) Entries in a book.
(2) Promises to pay.
(3) Orders to pay.
(4) IOU's.

Those credits, which are recorded in such a way as to be capable of being easily transferred from one person to another, are termed *Instruments of Credit*, in law they are called *Valuable Securities*.

They comprise all written forms of promises of redemption in commodity money, either on demand or at a fixed

future date, such as cheques, bank-notes, Treasury, Navy and Exchequer bills, bills of exchange, promissory notes, dividend warrants, etc. These instruments of credit have been made, either by custom or by law, *negotiable*, i.e., transferable from hand to hand by delivery. In some cases they require to be what is called *endorsed*, before they can be transferred. Endorsement is explained in Appendix A, which should be read by those who are unacquainted with the various forms of credit in common use, before proceeding to read the following pages.

The " Law of Money " and " The Law of Goods "

Negotiable instruments are intended to circulate exactly like money, and therefore they follow the " law of money " and not the " law of goods." The law of goods is that no one can transfer a right which he does not possess, so that if the owner of a chattel loses it, or has it stolen from him, he can reclaim it from any person in whose possession he finds it, no matter whether that person bought it in good faith from the thief for value; but the law of money, from the very nature of the case, is different; if the owner of the money loses it, or has it stolen from him, he can only reclaim it if he finds it in the possession of the thief or finder, but if he finds it in the possession of some one who bought it in good faith from the thief for value, he cannot reclaim it, the innocent purchaser acquires an absolute property in it, notwithstanding the defect in the title of the transferrer or thief, and can retain it against the claims of the true owner. This is expressed by saying that the property in money passes by delivery. It is this peculiarity of money which, in law, is denoted by the term *currency*, and negotiable instruments of credit possess this attribute of currency, in contradistinction from *assignable* instruments, whose transfer follows the law of goods, the title of the last transferee being dependent on the title of all the preceding transferers (H. D. Macleod). Instruments of credit are divided into two classes, viz., commercial and banking (*vide* Appendix A).

As instruments of credit are used for the purpose of borrowing capital, we must here define the meaning of capital.

Capital

"Capital is any exchangeable quantity which is used for the purpose of producing a profit, anything whatever which a person trades with in order to make a profit" (H. D. Macleod).

If means of subsistence is used to feed a person while he is earning nothing, but is working at something which, when completed, will bring him a return sufficient to replace the means of subsistence and leave him a margin of profit as well, the means of subsistence is capital.

If tools, machinery, buildings, money, etc., are used for the purpose of making profit, they are capital.

Capital originates out of savings. In order to acquire capital in the first instance, a man must put by some of his earnings, instead of consuming it all at the time, either on the necessities or the luxuries of life.

Fixed Capital and Floating Capital

Capital, says Mr Macleod, may belong to either one of two classes, according to the manner in which it is used; it may be used in either of two ways, viz.: (1) The object used as capital may be retained by the owner or borrower in his own possession, and a continuous series of profits may be made by its use. Consequently, the capital, supposing it to be worn out, is only replaced with the profits in a series of instalments. Capital used in this way is termed *Fixed Capital.*

(2) The object used as capital may be entirely parted with by the owner or borrower, and be replaced with a profit in one operation. Capital, when used in this manner, is called floating or circulating capital. Capital in the form of credit is always used in the second of these two methods, and is therefore *Floating or Circulating Capital.*

Commodity, fiduciary, token or credit money may all be used as floating capital.

Difference between Credit and the other Three Classes of Money

What is the difference between credit and the other forms of money?

The difference is that credit is created for the avowed purpose of borrowing some other kind of capital and is declared to be extinguishable by redemption in commodity money, either on demand or at a fixed future date; it is only a *temporary* equivalent for the thing borrowed.

Inconvertible paper money may also, as we have seen, be created for the avowed purpose of borrowing some other kind of capital, and may declare that it is only a temporary equivalent of the thing borrowed, but it is either not extinguishable by redemption on demand or at a fixed future date or else it is not made redeemable in commodity money.

All other forms of fiduciary money except inconvertible paper, as well as the commodity money, are regarded as *permanent equivalents* of the thing exchanged for, and are therefore not used by the person who parts with them as a means of borrowing. For the loan of the capital which is borrowed by means of credit, the lender requires some compensation, in addition to the ultimate return of his capital. This compensation, for the use of loanable capital, is called interest or discount (*v.* Appendix B).

Creation and Use of Commercial Credit

The creation and use of commercial credit is described by Mr H. D. Macleod as follows: "Goods or commodities, in the ordinary course of business, pass through the following hands—first, the foreign importer; secondly, the wholesale dealer; thirdly, the retail dealer; and fourthly, the customer or consumer. To the first three of these persons the goods are capital, because they import, manufacture or buy them for the purpose of selling them again with a profit; the fourth buys them for the sake of use or enjoyment. The price the ultimate consumer pays for them must evidently be sufficient to reimburse the original expense of production, to-

gether with the profits of the three succeeding operations. Suppose the merchant, having confidence in the wholesale dealer, sells him goods on credit, he parts with the goods to the wholesale dealer and draws a bill on him, which the latter accepts, i.e., the merchant receives a bill of exchange or promissory note in exchange for the goods. In a similar manner the wholesale dealer sells the goods to the retail dealer in exchange for a bill of exchange, while the retail dealer, when he sells the goods to the customer, does not obtain a bill of exchange for them, but records the debt in his books. If the merchant sold the goods for a bill of exchange of £100 to the wholesale dealer, the wholesale dealer would probably sell them to the retail dealer for a bill of exchange of £140, and the latter would sell them to his customers for £200—debts recorded in his books. Thus the successive transfers of the same goods have generated debts to the amount of £440."

Discounting Bills of Exchange

But the holders of the bills would probably not have accepted them if they could not have made some immediate use of them; they had no intention of lending on the strength of credit money, which they would have to put by in a drawer as useless unless it reached maturity. They intended to make immediate use of the bills—to regard them as temporary equivalents. The way in which the holders of commercial credit make immediate use of it and convert it into productive capital is by discounting the bills, that is to say, by exchanging commercial credit, which is payable at a fixed future date for banking credit, which is payable on demand.

Suppose, for example, that A had sold goods to B, and had received in exchange for them a bill of exchange for £100 at three months, drawn by B on C and made payable to A; A might obtain credit payable on demand by "discounting" the bill in the manner shown in the Appendix B. The rate charged for discounting the bill would depend on various

considerations, which are described by Prof. Jevons as follows:

(1) The amount for which the bill is drawn.
(2) The interval of time elapsing before the bill falls due.
(3) The probability of its being paid when it matures.
(4) The rate of interest likely to prevail while the bill is running to maturity.
(5) The legal liabilities which it creates or involves.

There are two classes of persons who discount bills for traders, viz., bill-brokers (or bill-discounters or bill merchants)* and bankers. Bankers buy bills with credit money payable on demand.

Let us examine the discount of bills by bankers and the manner of creating banking credit payable on demand, pursuing the mode of explanation which is adopted by Mr H. D. Macleod and other writers.

The Discounting of Bills by Bankers and Banking Credit Money

Suppose a number of persons pay £10,000 to a banker, the banker's accounts would show:

Assets		*Liabilities*	
Cash . . .	£10,000	Deposits . .	£10,000

These deposits are banking credit money, which is loanable capital, payable by the banker at fixed dates or on demand. But although the banker is liable to pay the whole of the £10,000 in cash if required to do so by the depositors, experience teaches that he is never in ordinary and quiet times called upon to pay out much more in any one day than he is required to take in. A banker's cash balance, in other words, differs but little from day to day. Suppose that the banker finds that he never has to pay out more than £1,000 of his total balance of £10,000 in any one day, or that in other words, £1,000 in cash is sufficient to support £10,000 of liabilities in credit, it is clear that the other £9,000 of cash

* The office of bill-brokers is illustrated on p. 225.

will be able to support another £90,000 of liabilities in credit. He can, therefore, create another £90,000 of credit without having to increase his cash balance at the same time, and on all this credit, which he creates in excess of the cash balance he holds in reserve, he can make a profit. Suppose he discounts bills of exchange to the amount of £50,000 at three months at the rate of 4%, the amount of profit in the shape of discount will be £500. Consequently, in exchange for bills to the amount of £50,000, he will issue credit to the amount of £49,500; if he issues this credit in the form of £40,000 in deposits and £9,500 in bank-notes, the whole state of his accounts would stand as follows:

Assets		*Liabilities*	
Cash	£10,000	Deposits . . .	£50,000
Bills of Exchange	£50,000	Notes . . .	£9,500
		Balance profit .	£500
	£60,000		£60,000

He has now increased his liabilities to £59,500, but has still got only £10,000 in cash; he has also got £50,000 invested in bills of exchange, on which he has made a profit of £500. But the cash is sufficient to support another £40,000 of credit, which may be issued at a profit in other ways; if he made advances of, say, £5,000 at 4% for three months, the addition to his accounts would be:

Assets		*Liabilities*	
Advances	£5,000	Deposits . . .	£4,950
		Profit of Interest on advances . .	£50
	£5,000		£5,000

Such is the manner in which banks make their profits from the issue of credit. The profits on note issues is thus seen to consist of the interest on the average amount of notes which circulate in excess of the cash held against them in reserve, less, of course, the cost of manufacturing the notes.

The money which the banks and brokers thus hold on deposit represents a very large portion of the savings and unemployed capital of the whole community which, by being concentrated in the banks, forms an immense loan fund—borrowable capital—which the banks lend to the trading community by discounting their bills. "English trade is carried on, on borrowed capital, to an extent of which few foreigners have an idea, and none of our ancestors could have conceived. In every district small traders have arisen who discount their bills largely, and with the capital so borrowed harass and press upon if they do not eradicate the old capitalist. (In his turn the small trader is now being displaced by the Joint Stock Company.) The new trader has obviously an immense advantage in the struggle of trade. If a merchant has £50,000 all his own—to gain 10% on it, he must make £5,000 a year, and must charge for his goods accordingly. But if another has only £10,000 and he borrows £40,000 by discounts (no extreme instance in our modern trade) he has the same capital of £50,000 to use and can sell much cheaper. If the rate at which he borrows be 5%, he will have to pay £2,000 a year; and if, like the old trader, he makes £5,000 a year, he will still, after paying his interest, obtain £3,000 a year, or 30% on his own £10,000. As most merchants are content with much less than 30%, he will be able, if he wishes, to forego some of that profit, lower the price of the commodity and drive out the old-fashioned trader—the man who trades on his own capital—out of the market. In modern English business, owing to the certainty of obtaining loans on discount of bills, or otherwise at a moderate rate of interest, there is a steady bounty in trading on borrowed capital, and a constant discouragement to confine yourself solely or mainly to your own capital" (Bagehot, *Lombard Street*).

Thus is commercial credit payable at a fixed future date converted into banking credit, payable on demand, and in that form it is used as a substitute for commodity money; it takes the place of commodity money, and thereby lowers the

value of money throughout the world, although the credit itself is accepted at its face value (*v.* p. 15).

As we have seen, both banking and commercial credit is redeemable either on demand or at a fixed future date. That which is redeemable on demand comprises "deposits,"* which are operated on by means of cheques and bank-notes; that which is redeemable at a fixed future date comprises time bills and promissory notes.

The exchange value of the first is equal to its denominational value so long as people believe that others will accept it at that value, and this general belief arises, in the first instance, out of trust in the credit of the original issuer—it is founded on confidence. Hence the notes of a bank which has inspired general confidence, circulate at their full denominational value without question as to the ability of the bank to redeem them at any moment on demand. They cannot circulate at a discount.

Credit which is not redeemable on demand, also circulates at its denominational value, save for the discount to which it is subjected, by reason of the several conditions described on p. 67; this discount is reduced gradually every day the nearer the credit approaches maturity. Its exchange value is thus due, like that of credit payable on demand, to the confidence of the acceptor that the original issuer will redeem it at maturity.

Now when credit is redeemed it is extinguished, and ceases to exist.

Hence if all credit, whether redeemable on demand or at a fixed future date, were ultimately redeemed in commodity money, the call to redeem it would create a demand for the commodity money, and its extinction would reduce the total quantity of money in existence. In other words, the value of money would be raised by as much as it had previously been lowered.

But in actual practice credit is seldom ever redeemed by commodity money, so that instead of the creation and ex-

* Which includes current accounts (*v.* p. 217).

tinction of credit causing temporary fluctuations in the value of the whole mass of money in the world, it has the effect of permanently lowering that value by the amount of credit which is constantly in existence.

The two ways in which credit is commonly extinguished are described by Mr Macleod as:

(1) Compensation or set-off.
(2) Novation; renewal or transfer.

1. Compensation

"If two persons are mutually indebted to the same amount at the same time, each may claim that the debt which he has against the other shall be taken in payment of the debt he owes. Each debt is therefore legal tender, or money with respect to the other, and neither party can demand specie from the other. . . . If the debts are equal, each is payment for the other. They are weighed and set off against each other. If the debts are unequal, equal amounts compensate each other, and the balance only is due in money. Suppose, e.g., two bankers issue notes, and each has got possession of £100 in the notes of the other. Each tenders the other his own notes in payment of his own debt. . . . Each obligation is now extinguished and the £200 ceases to exist as economic quantities." The principle involved in the system of extinguishing book-debts, as described by Prof. Jevons, is precisely the same: "If two firms have frequent transactions with each other, alternately buying and selling, it would be an absurd waste of money to settle each debt immediately it arose, when in a few days a corresponding debt might arise in the opposite direction. Accordingly it is the common practice of firms having reciprocal transactions, to debit and credit each other in their books with the debt arising out of each transaction, and only to make a cash payment when the balance becomes inconveniently great." But even the balances are commonly paid by cheque instead of by coin.

2. Novation

"An obligation, or credit, or a debt, may be discharged and extinguished by substituting a new obligation, credit or debt for it. The new obligation pays, discharges and extinguishes the preceeding one, and the extinguishment of the preceding obligation is the consideration for the new one. . . .

"Ex. 1. When a banker agrees to renew a promissory note for his customer, the new note pays and extinguishes the prior one, the extinction of the preceding debt is the consideration for the new note. . . . This form of novation is termed renewal by us.

"Ex. 2. When a debtor pays his creditor in bank-notes, he transfers to his creditor, in payment of his debt, a debt due to him from a banker. If the creditor agrees to receive the notes in payment of his debt, the debtor is discharged, and the creditor agrees to take the banker as his debtor. So with a cheque. . . .

"Ex. 3. If a debtor and creditor are customers of the same bank, the debtor may give his creditor a cheque on his account in payment of a debt. If the creditor accepts the cheque, he pays it into his account; the banker transfers the credit from the account of the debtor to that of the creditor. As soon as this is done the creditor is paid just the same as if he had been paid in (metallic) money. The transaction between the debtor and creditor is finally closed, even though the banker should fail immediately afterwards;* the debt of the banker to the transferrer is discharged, he becomes debtor to the transferee; the transferrer is released from his debt to the transferee, who accepts the banker as his new debtor. This form of novation is called transfer."

In the same way that transfers are thus made from one account to another in the same bank, they are also made from one bank to another by means of the so-called clearing system, which we will now proceed to describe.

* *v.* Appendix A, p. 298.

CHAPTER XIV

The Clearing System

EVERY day a banker receives large quantities of cheques and other forms of credit, which he is expected to " collect " on behalf of his customers from other bankers; and the latter also receive large quantities of credit on behalf of their customers, which have to be " collected " from the former. If each bank had to send clerks round to each of the other banks to collect the money for all this mass of credit, it would be an immense task, and each bank would also have to keep a large stock of metallic money and bank-notes to meet the claims made against it. To avoid the inconvenience of effecting credit transfers in this manner a scheme was devised by the London private bankers in about the year 1775, whereby each bank sent a representative to a hired room where the several clerks met daily, and simply exchanged the cheques and bills they held against each other, paying only the difference in cash. By this means a large amount of metallic money and of notes was set free from the banks to be used for other purposes, and the risk of carrying about large sums was avoided. Such was the commencement of the clearing system in England. The following description of the American clearing system is quoted from the William's and Rogers' series.

Clearing Houses

A clearing house is an association of banks called into existence by the necessity of the times, to facilitate daily settlements between banks. The aggregate amount of exchanges represents the clearing for the day. " Clearing," says Lloyd, " is the settlement of mutual claims by the payment of differences." At large trade centres a certain number of

banks associate themselves together under articles more or less comprehensive, as the magnitude and volume of trade may demand. Officers are elected and committees are appointed to conduct the affairs of the association. The officers are a president, vice-president, manager and committee of management, sometimes called the clearing house committee, a committee of conference, a nominating committee, a committee of admission and an arbitration committee. The manager, under control of the managing committee, has full charge of the business at the clearing house so far as the manner of conducting its business transactions is concerned. He has full charge of the clerical force employed and of the settling clerks and messengers from the banks while at the clearing house.

To enable the student to appreciate the use of the illustrated forms, they will be explained in their order, commencing at A (p. 76).

In the daily routine of banking work the teller classifies his exchanges according to the bank at which they are made payable. This is usually done by assorting them in pigeonholes, and at the end of the day's business exchange slips (A) are made out against the different banks for the amount of exchangeable paper held for collection against them. In the illustrated forms the exchange slip A shows five different pieces of paper, aggregating 1,147·82 dols, which is the amount of exchanges carried by the German-American bank to the clearing house against No. 1, the Central Bank (on B). There are different slips for each bank, and when ready for clearing the amount of exchange against each bank is placed in a large envelope, with the exchange slip on the outside. When these slips are made out at the bank, an exchange slip is made out also for such other banks as collections are held against, and the aggregate of each is entered on another blank, called the settling clerk's statement (*see* illustrated form B). In this are entered the total debit against each bank. It will be seen, by consulting the form (B), that the settling clerk of the German-

American Bank took to the clearing house on August 15 collections aggregating 20,552·87, as shown by the column headed " total debits." At the time of his arriving there no entries had been made in the column headed " banks credit." This is to be used during the interval between the opening and closing of the clearing house.

Just before the hour of opening each settling clerk delivers to the other clerks their envelopes of exchanges which he has against them.

A credit ticket is made out by the settling clerk and handed to the manager, instructing him to credit the German-American Bank with exchanges aggregating 20,552·87. The manager at once enters it in a blank, called " clearing house proof " (*see* illustration D). When all are entered, the manager foots the column headed " bank credit," which shows the total clearing to be made.

At a given hour, usually at 10 o'clock a.m., the signal is given to clear, and the clerks deliver their exchanges, if not already done. The settling clerks now enter in the credit column of the settling clerk's statement (B) the total credit opposite each bank, for the amount left against his bank.

The settling clerk of the German-American Bank foots the credit column of his statement, and finds that there is an aggregate of 14,741·56 against his bank, and that there will be due to the German-American Bank 5,811·31. He now fills out a balance ticket (C), showing debits, 20,552·87; credits, 14,741·56; balance, 5,811·31, and passes it up to the manager (*see* illustration C).

The manager fills out the clearing house proof, and finding that the columns headed " debtor banks " and " credit banks " foot equally, and also the columns headed " due clearing house " and " due banks " foot equally, he announces the result " correct."

This completes the exchanges for the day, and the debit banks have an hour in which to pay their balance to the manager, and at 1.30 the credit banks receive from the manager their balances, which are paid either in checks or

clearing house certificates (*v.* p. 98). Thus, millions of dollars of settlements are made and balances are paid without moving specie or transferring a dollar in legal tender. The cheques are deposited for clearing the next day, and the certificates are used to adjust subsequent balances.

In Cincinnati the system was introduced, and since has obtained in several of the western cities to settle at once with the credit banks by drawing the manager's checks upon the debit banks. By looking at " clearing house proof " (D), it will be seen that should the manager give the German-American Bank a cheque for the balance due, of 5,811·31 upon No. 12, the Monroe County Savings Bank (whose debit balance is 16,752·10), there would be a balance due from No. 12 of 10,940·79.

(A)

EXCHANGE SLIP

No. 1

From No. 4.

German-American Bank.

12	50
100	50
500	62
487	38
46	82
1,147	82

No. 4 (B)

Rochester Clearing House Association
from
German-American Bank.

Settling Clerk's Statement, Aug. 15, 189–.

No.	Banks	Total Debits		Bank Credits		No.
1	Central Bank	1,147	82	145	33	1
2	Commercial National Bank	2,971	82	3,410	85	2
3	Flour City National Bank.	2,122	58	4,500	00	3
4	German-American Bank					4
5	Merchants' Bank	8,356	05	664	57	5
6	Bank of Monroe	2,164	14	112	64	6
7	Trust and Safe Deposit Co.	1,311	12	122	16	7
8	Traders' National Bank	223	55	334	64	8
9	Union Bank	241	41	1,222	90	9
10	Powers' Bank	162	69	1,887	86	10
11	Rochester Savings Bank	355	08	1,775	97	11
12	Monroe County Savings Bank	228	04	243	95	12
13	Mechanics' Savings Bank	1,268	57	320	69	13
	Footings	20,552	87	14,741	56	
	Balance			5,811	31	
	Proof			20,552	87	

BALANCE TICKET.

No. 4 (C) Rochester Clearing House,
Aug. 15, 189–.

From German American Bank

Amt. Rec'd, $20,522·87.

Pmt. Brot, $14,741·56.

Debit Balance due Clearing House.

Credit Balance due Bank $5,811·31.

J. E. Jones, Settling Clerk.

(D)

ROCHESTER CLEARING HOUSE PROOF, Aug. 15, 189–.

	Banks	Due R.C.H.		Banks Dr		Banks Cr		Due Banks	
1	Central Bank	1,631	42	10,273	18	8,641	76		
2	Commercial National Bank	4,944	04	15,217	90	10,273	86		
3	Flour City National Bank	703	05	14,217	17	13,514	12		
4	German-American Bank			14,741	56	20,552	87	5,811	31
5	Merchants' Bank			17,585	00	24,497	18	6,912	18
6	Bank of Monroe			9,385	50	18,515	50	9,130	00
7	Trust and Safe Deposit Co.	8,246	25	20,121	50	11,875	25		
8	Traders' National Bank	8,101	28	18,615	93	10,514	65		
9	Union Bank	293	14	26,354	12	26,060	98		
10	Power Bank			10,500	00	25,850	50	15,350	50
11	Rochester Savings Bank			10,500	00	11,967	20	1,467	20
12	Monroe County Savings Bank	16,752	10	28,462	50	11,710	40		
13	Mechanics' Savings Bank			11,718	40	13,718	49	2,000	09
		40,671	28	207,692	76	207,692	76	40,671	2

MANAGER'S RECEIPT.

No. 1 (E) Rochester Clearing House,
Aug. 15, 189–.

Rec'd from Central Bank $1,631·42.
Sixteen Hundred Thirty-one $\frac{42}{100}$ Dollars,
in full for the balance due the associated banks.

R. L. Smith, Manager.

The London Clearing House

The banks of the London clearing house prepare a similar document to the above settling clerk's statement, which is called a *summary sheet.*

Each of the banks represented in the London clearing house is compelled to keep an account at the Bank of England, whilst the latter institution keeps an account called the " clearing bankers' account," as well. If a clearing bank's " summary sheet " shows that it is on balance indebted, a white ticket is made out for a transfer in the Bank of England's books, from the clearing bank's account to the account of the clearing bankers; if a clearing bank's " summary sheet " shows a balance in its favour, a green ticket is prepared for a transfer of the amount to its account from the clearing bankers' account.

Under this system, therefore, no notes or coins are required at all, and by means of the clearing bankers' account one ticket alone for each bank does the work of several cheques. The sums transferred by this means between the different banks amount on an average to between 200 and 300 millions a week or over £12,000,000,000 a year.

Provincial Clearing Houses

Many large cities in Great Britain now have their own clearing houses, e.g., Manchester, Liverpool, Sheffield, Leeds, Newcastle, Birmingham, Edinburgh, Glasgow, etc., each clearing house effecting collections within a certain radius from its centre, and settling differences by means of cheques drawn on the local branch of the Bank of England with which each bank in the town has an account. Bills of exchange and promissory notes are cleared in just the same way as cheques in each of these provincial clearing houses.

Clearing of Country Branch Banks

But the clearing system is by no means confined to only those banks which are established all in the same town or

city. In England, Scotland, Ireland, Canada, Australia and New Zealand, every large bank has many branches scattered all over the country. The cheques drawn by the customers of one branch, payable to those of another branch, are cleared by the head office, which acts like a clearing house.

Clearing Agents

Again, every large bank has to transact business in towns where it has no branches; for this purpose it employs another banker in each of those towns to act as its agent. " Each agent bank," says Prof. Jevons (*Money*, p. 259), "has a running account with its principal, so that, to a certain extent, each important bank and its agencies form a clearing system analogous to that of a head bank and its branches."

Again, every English provincial bank employs one of the large London banks to act as its agent. " The whole of the customers of all the banks having the same London agent are thus brought into close relation, though they may live in the most distant parts of the country. Each of the City banks may be regarded as a bankers' bank and a clearing house on a small scale. . . . The country banker, instead of posting many cheques every day to all parts of the kingdom, sends them in a single parcel to his London agent, to be presented, through the clearing house, on the London agents of the paying banks " (Jevons, *Money*, p. 260).

" Under this arrangement all cheques on country banks, held by other banks, are passed through the clearing house into the hands of the London agents of the banks on which they are drawn. The London agent sends by post each night to the various country banks which he represents, a parcel of cheques, consisting of the whole of the cheques on each respective country bank, which have been passed to him through the clearing. Each of the country banks has thus but one remittance to deal with each morning, instead of numerous remittances from banks situated all over the

country. On the other hand, the trouble to which each bank was formerly put of forwarding all country cheques received direct to the various banks on which they might be drawn, was done away. The West End and suburban banks of London cannot, by reason of distance, be directly represented in the clearing house. A system, however, is in operation by which practically the total of their daily transactions becomes merged in the total figure of each day's clearing. Cheques presented to these banks by other banks are paid by what is known as 'payment.' A 'payment' is, in effect, a draft on their head office or clearing agent, and these drafts are passed through the clearing house" (Straker's *Money Market*, p. 118). The advantages of the system of cheques and clearing are numerous. It saves the risk and trouble of using coin, and saves the loss of interest which is involved in the use of metal. "By far the greater proportion of cash settlements is now carried through by cheques. To give some idea of the important part which cheques play in the vast number of monetary transactions incessantly taking place, the following figures, which have been obtained by the kindness of the manager of one of the clearing banks, will be found useful. They enable one, at a glance, to form some idea as to the proportion which actually exists between the cash value received in cheques, notes and coin.

Cheques	87·30
Bank of England notes .	6·89
Cash	5·81
	100·00"

(W. Howarth, *Our Clearing System.*)

"The method of balancing claims," said Prof. Jevons, *Money*, p. 280, "need by no means to be restricted to the business of banking. As, indeed, the monetary transactions of any locality come to a focus in the banks, the principal clearing will always be in the hands of bankers. But wherever a set of traders have numerous reciprocal claims, they may

find it desirable to set up their own clearing house. . . . From bankers' transactions, the clearing principle has been extended to railways, stock exchange and cotton broker's business. It is conceivable that any other body of merchants, brokers, publishers or others, who have frequent pecuniary claims upon each other, might have a clearing meeting once or twice a week." *

How to Read the Clearing Returns

The figures of the London and provincial houses are published in the London papers every week, showing the amount of bills and cheques cleared throughout the whole country, the town clearing being shown separately from the country clearing. These figures furnish some indication of the state of trade. As the first day of the month is the day on which the trade bills are usually made to fall due, and these are not payable until after three days of grace (*v.* p. 293), which may, on account of holidays, be extended to four or five days, the figures of the clearing effected on the 4th and 5th of every month may be taken as specially indicative of the increase or decrease in the volume of trade, and these figures are therefore published separately.

But there are other transactions of a financial character which have no direct bearing on the condition of trade, and which must therefore be deducted from the total increase of clearing figures, if we wish to discover how much of that increase is due to improved trade, such, for example, as the figures relating to the Stock Exchange settlement, hence we must allow for the increase in the Stock Exchange and Consols settling days (*v.* p. 261), which are also recorded separately (*v.* Appendix C). Thus, comparing the total clearings for the first five months of the year 1905 with those of the like period of 1904, we find an increase of £1,499,840,000.

* But of course it is necessary that the commodities dealt in are of a uniform nature. In the clearing of sugar, e.g., the sugar is calculated in lots of 500 bags of a fixed quality and weight. The London Produce Clearing House adjusts transactions in wheat, tea, coffee and silver.

But we also find an increase of £505,734,000 in the figures relating to the Stock Exchange settling days and an increase of £39,344,000 in those of the Consols settling days, which reduce our total increase to £955,762,000. Then again, a further factor must be allowed for, viz., the rate of the turnover of money.

Mr W. R. Lawson, in an article on "The London Clearing Banks," which appeared in *The Financial Times*, classifies the nature of cheques cleared by the clearing house, as follows, with a view to showing the class of business they represent:

(1) Trade cheques—retail.
(2) Trade cheques—wholesale.
(3) Trade cheques—foreign.
(4) Industrial cheques, including agriculture and all branches of manufacturing.
(5) Stock exchange cheques, and all others used in connexion with the creation or distribution of securities.
(6) Lombard Street cheques, relating: (1) To foreign bills of a *bona fide* commercial character; (2) to foreign loans and other operations of high finance; (3) to foreign exchange operations and transfers of money from one country to another; (4) to "finance bills" and other "spurious" creations of credit.
(7) Fiscal cheques issued or received by public authorities, national and municipal.

Unfortunately, however, we have no means of calculating the relative proportions of each of these classes of cheques cleared.

CHAPTER XV

THE system we have just been describing of redeeming credit by credit, prevents, as we said, that fluctuation of prices which would be the result of redeeming credit in coin (*v.* p. 70); it is a permanent displacement of commodity money by credit, so that (according to the " quantitative theory of money ") the more a country employs credit as a substitute for coin in effecting exchanges, the less will be its distributive share of the metal, and the lower will be the value of the money supply of the world.

Now when once the proportion of credit to metallic money in a country is such that the general level of prices corresponds to that prevailing in other countries, a failure of the total mixed currency to act in all respects precisely as would a body of money composed wholly of commodity money, is liable to cause great mischief to the trade and production of the country using the credit. That is to say, the mixed currency of coin and credit must by some means be so regulated that there is neither a scarcity nor inflation, the which is prevented in the case of a currency consisting of nothing but commodity money by the law of distribution, in other words, an increase or a decrease of coin should always be accompanied by a corresponding movement of credit. For if not, injurious consequences may possibly arise in two different directions:

1. Danger of Financial Crisis

A decrease in the quantity of the standard metal (or its equivalent) unaccompanied by a corresponding diminution in the quantity of credit, or an increase in the quantity of credit without a corresponding increase of coin, is liable to bring about a financial crisis.

For when once there arises in the minds of business men the suspicion that there is an insufficiency of coin wherewith to redeem existing credit if required, the public confidence on which that credit so largely depends becomes shaken, and if the general feeling of distrust is allowed to develop into a panic the usual modes of extinguishing credit are abandoned, every one demands coin, and if the coin is not forthcoming, the credit, instead of being extinguished, is destroyed, i.e., it loses its value, and brings financial ruin to a large portion of the community.

2. Danger of Inflation

Given the same conditions as above, but presuming that there is always sufficient coin to meet the demand at any moment and so avoid a panic arising from insufficiency of coin, there yet appears to be the possibility that the currency may become inflated. For if the credit were to properly decrease in harmony with a diminution of the coins, as under the operation of the law of distribution, the resulting fall in the general level of prices would encourage an import of coin or an export of commodities; but if the quantity of credit could not be made to decrease, the level of prices would be unnaturally high, and although an import of commodities might restore the level of prices, yet the inflation might proceed far enough to seriously injure trade and production; it is possible, too, that the process of restoration might be so violent as to reduce the total volume of money below its proper level and thereby bring about all the ills resulting from a scarcity of money.

Now since the state of the relation which at any time exists between gold and credit, may be gauged by a comparison of the cash reserves (*vide* p. 217) of all the banks on the one hand, with the banking " deposits " and bank-notes in circulation on the other, we must see whether the fluctuations in the quantity of existing banking credit, payable on demand, can be so regulated as to correspond to the fluctuations in the quantity of cash reserves. Let us take the case of notes first.

Relation of Bank-Notes to Cash Reserves

Can the quantity of bank-notes in a country be made to increase and decrease in harmony with the cash reserves? On this question there are two rival schools of thought, known as the Banking Principle and the Currency Principle respectively.

The Banking Principle

According to the view of the banking principle school, which is held by most writers of reputation, with Mr Tooke as leader, if notes are, like " deposits," issued in excess of the cash reserve, a mixed circulation of coin and notes cannot but help in the nature of things, conforming to the law of distribution in exactly the same way as a currency consisting of coin only, so long as no obstructions whatever are placed in the way of their instant redemption on demand, and so long as legal penalties are strictly enforced against any issuer who fails to redeem his notes in coin if required to do so.

The Currency Principle

In the view of the currency principle school, whose leader was Lord Overstone, sound banking principles alone cannot secure the conformity of a mixed currency of coin and notes to the law of distribution; although the cash reserves may be maintained at sufficient strength to preserve the convertibility of the notes, and thus avoid the danger of panics arising from a scarcity of coin, yet the notes cannot always be made to decrease in harmony with the coin when the total currency is excessive, with the result that the currency may become temporarily inflated, and although it is admitted that inflated prices would ultimately encourage an import of commodities and thereby restore the total currency to the level of a purely metallic money, yet the inflation may proceed far enough to seriously derange trade and production; moreover, the process of restoration may be so violent as to reduce the total volume of money below its

proper level and so cause mischief in the opposite direction. Against this the banking principle school argues that the additional notes requisite to an inflation could not be maintained in circulation, but would either be returned to the issuer, and be converted by him into "deposits," or be taken in repayment of previous advances, or else possibly be redeemed in coin.

The question is a very debatable one. The system of issuing credit, which is advocated by the currency principle school, is based on the view that the banks should create no more credit than the amount of specie they hold in reserve; that their sole function should be to exchange credit for coin and coin for credit, so that the quantity of credit in circulation would always be exactly equal to the coin displaced. This is the doctrine which we shall see was intended to be put into practice by the Bank Act of England in 1844 (*v.* p. 99). Several banks have been constructed on this principle in respect to the issue of not only notes, but also "deposits." Such were the old banks of Venice, established in 1157; Amsterdam, established in 1609; Hamburg, established in 1619, and others.

Banks of Venice, Amsterdam and Hamburg

But the object of these banks was quite other than that of the modern banks which issue credit in excess of the coin they hold in reserve, in order to make a profit. Venice, Amsterdam and Hamburg "were centres of a great foreign commerce, and as a necessary consequence large quantities of foreign coin of all sorts of different countries and denominations, were brought by the foreigners who resorted to them. These coins were, moreover, greatly clipped, worn, degraded and diminished, and so caused great confusion and inconvenience among merchants, who, when they paid, or received payment of their bills, had to offer or receive a bagful of all sorts of different coins. . . . In order to remedy this intolerable inconvenience, it became necessary to institute some fixed and uniform standard of payment, so as to insure

regularity of payments and a just discharge of debts. To effect this purpose the magistrates of these cities instituted a bank of deposit, into which every merchant paid his coins of all sorts and countries. They were weighed, and the bank gave him credit in its books for the exact bullion value of the coins paid in. The owner of the credit was entitled to have it paid in full weighted coin on demand. These credits, therefore, insured a uniform standard of payment, and were called *bank money*— moneta di banco—and it was enacted that all bills on these cities, above a certain small amount, should be paid in bank money only. As this bank money was always exchangeable for coin of full weight on demand, it was always at a premium or *agio*, as compared with the clipped, worn and degraded coin in circulation. The difference was usually from 5 to 9 per cent in the different cities. The term *agio* is misleading, because it is evident that it was the bank money which was the real legal standard, and the current coin was at a discount. As these banks made no use of the coin and bullion in the way of business, as by discounting bills, but professed to keep it all with them deposited in their vaults, the credit created was exactly equal to the specie deposited, and their sole purpose was to exchange credit for coin and coin for credit. Their only use was to insure a uniform standard of payments " (Adam Smith). The bank money was a *money of account*, similar in principle to that which was introduced into India by Sir James Steuart (the adviser of the East India Company), in consequence of the general corruption of the coin.

It is, of course, quite clear that no bank, constructed on the currency principle, could make any profit (*v.* p. 68).

Relation of Bank Cash Reserves to " Deposits "

Can banking " deposits " be made to increase and decrease in harmony with the bank reserves of cash?

The present mode of endeavouring to maintain this desirable relation between " deposits " and cash is that of regulating the rate of discount.

The territorial distribution of the precious metals is, according to the "quantitative theory of money," effected, as we have seen, by the agency of prices; but there is also another and a very powerful agent which assists in this distribution, and that is the value of loanable capital as expressed by the rate of interest and discount. The value of money, in this latter sense, is determined by the demand for, and supply of it, as an agent for borrowing capital.

If capital is badly wanted, the compensation offered for its loan increases and the rates of interest and discount therefore rise. This encourages the import of commodity money, for a higher rate of interest tempts the foreigner to lend his capital where he can get more for it than in his own country (*v.* p. 114). On the other hand, a decrease in the demand for capital lowers the rate of interest and discount, which, if sufficiently below that prevailing in other countries, causes an export of bullion to those countries where the rate is higher.

In this way the rate of discount may be, and at the present time is, used to regulate the cash reserves of the country in such a way as to avoid the first of the two dangers already mentioned.

But what shall we say as to the efficacy of this policy to prevent the other danger, viz., that of inflation? Every new means devised for economizing the use of commodity money lowers permanently the distributive share of the precious metal to which the country is entitled. Such is the effect produced by the custom of redeeming credit by credit, and by the extension of banking and clearing systems; and it must not be forgotten that the use of token money also plays no small part in still further expelling the standard metal from the country.

It would surely be an erroneous policy to, in such circumstances, attempt to keep the standard metal in the country by artificially raising the rate of discount, while the very principle on which the whole credit system is based is calculated to drive the metal away (*v.* p. 84).

Indeed, it may be said, that the main function of gold is, at the present time, not that of effecting exchanges, but that of safeguarding credit—a purely banking function—but as such its existence, in the form of banking reserves, none the less exerts an effect on prices by influencing credit; hence, if the total currency were to become inflated, the situation would be relieved but slowly by an export of the banking gold reserves, or by an import of gold brought about by a rise in the rate of interest.

No banks at the present day issue credit in the form of "deposits" on the currency principle, but many of them are compelled by law to conform thereto in respect to the issue of bank-notes.

Danger of Inflation an Open Question

To sum up, when neither "deposits" nor notes are issued on the currency principle, it is always necessary to maintain the cash reserves at a certain proportion to the credit, in order to prevent a crisis. Whether or not there still remains the possibility of inflation is generally considered to be a point that is open to question.

Proportion of Cash Reserves to Notes

As regards the proportion of metal to notes, Prof. F. A Walker says, "Just what proportion between notes and specie reserve will, in the balancing of gain against loss, leave the largest net result in favour of paper money banking, must depend on widely different conditions. Lord Overstone, a very conservative writer, regards one-third of bullion as sufficient, in a country where communication is so apt and quick as in England. This is the proportion actually taken in many countries of Europe as the minimum legal reserve. A bank whose notes circulate among a rural population, going twenty or fifty miles in all directions from the place of issue, where intelligence of disaster would make its way slowly, where panic would be impossible, . . . is in a very different position from one whose notes are mainly held in

the city where they are issued. Here the whole population can be brought into the streets by the stroke of a bell, intelligence of evil spreads rapidly, and the contagion of panic acts with terrific force."

Proportion of Cash Reserves to Deposits

Similarly, the extent of specie which should be held against "deposits" depends on circumstances which can only be ascertained by experience. But in any case the specie held against either "deposits" or notes must be such as to meet not only ordinary daily demands, but also sudden emergencies.

In a sound system of deposit banking every bank should keep such a reserve, so that in times of discredit they can adopt the proper course of preventing or allaying panic, viz., that of advancing out of their reserves and thus restoring confidence.

We will now proceed to give an outline of the history of the Bank of England, and to illustrate various systems of issue of "deposits" and bank-notes.

CHAPTER XVI

Banking and the Goldsmiths

BEFORE the development of the banking business in England, merchants used to deposit their surplus funds in the Tower of London. This practice was brought to an end by the seizure, in 1640, by Charles I, of about £200,000 of the sums so deposited, though this sum was subsequently repaid. During the reign of Charles II it was the custom for merchants to deposit their funds with the goldsmiths, who paid interest thereon, lent money and discounted bills. The goldsmiths were the first bankers in England; they deposited their money with the Treasury, and received as security *exchequer tallies*, which were issued in anticipation of the revenue.

Origin of the British National Debt

In the year 1670 Charles II issued a proclamation to the effect that the exchequer, in which the goldsmiths' funds were deposited, was to be closed for one year, but that interest would be paid on those funds at the rate of 6%. In this way he seized £1,328,526, and paid the interest on it until the last year of his reign. In 1700 it was enacted by law that interest should be paid at the rate of 3%, until half of the total debt was repaid. The principal, however, never was repaid, it was subsequently consolidated, and formed the commencement of the National Debt of England in its present form (*v.* p. 245).

Establishment of the Bank of England

During the reign of William and Mary, England was engaged in a war with France, and was experiencing great difficulty in raising the money to carry it on. In 1694 a

scheme, which had been in successful operation in Italy for centuries, was for the first time introduced into England, viz., that of raising money by perpetual annuities, i.e., borrowing money and paying interest thereon for ever. This plan for relieving the financial difficulties of the Government was proposed by a Scotch merchant, named *William Paterson*, and was put into execution in the following way:

A number of merchants formed a public joint stock company (*v.* p. 251) by subscribing £1,200,000 and lending the whole of it to the Government. They were incorporated by Act of Parliament under the name of the Governor and Company of the Bank of England.

In return for the loan the Government granted certain privileges, and set apart an annual payment of £100,000, of which £96,000 was a perpetual annuity at the rate of 8% for the subscribers, their heirs, successors or assigns, and the other £4,000 was for the management and expenses of the bank. The loan of £1,200,000 to the Government formed the Bank's capital, thus:

Assets		*Liabilities*	
Government securities	£1,200,000	Capital	£1,200,000

Securities as a basis of Note Issue

It was further prescribed that the Bank's liabilities should never exceed the amount of its capital, or, in other words, the Bank was allowed to issue notes payable on demand to the extent of £1,200,000. If these notes had not been made payable on demand, but had been declared to be redeemable in the securities which represented the Bank's capital, they would have been inconvertible paper money based on securities. Such, however, was not the case; the notes were credit payable on demand. But the principle of basing credit on securities is obviously an unsound one, for, as we have seen, the basis of credit should always be specie, and the specie should be sufficient to ensure the convertibility of the credit in commodity money on demand.

To base credit on securities is merely to guarantee that it will be redeemed in specie if the securities can be realized to fetch enough of it.

Hence, if securities are made to take the place of specie, the notes are the more liable to become inconvertible paper money.

Basis of American National Bank-Notes

The principle on which the American national bank-notes are issued is similar to this, since they are based on United States Government bonds in the proportion of $100 bonds to $100 national bank-notes, which are purchased by the banks and deposited in the Treasury.

In addition to this security basis, every national bank has to deposit 5% in cash to form a *redemption fund* (*v.* p. 98), and the notes are subject to a tax of ½%.

The great objection to this system is its lack of elasticity, for the note circulation contracts with the reduction of the public debt.

At the time of the foundation of the national banks, 1863, the law only sanctioned the issue of notes up to 90% of the par value of the bonds, and the tax was 1%.

First Suspension of Payment

In 1697 the Bank of England was obliged to temporarily suspend payment of its notes in full, i.e., the notes became inconvertible paper.

This was largely due to the state of the coinage. For although the Bank had long been receiving bad coins, i.e., tokens, at their full denominational value, it was forced, when the old coins were being called in and new, full weighted ones were issued by the Government, to pay its notes in the latter, hence it lost the whole of the fiduciary value of the tokens, and its cash reserve was therefore depleted by having to pay out far more than it received. At this time the Bank's notes were circulating at a discount of 20%.

Restoration of Value of Notes

The method by which the Government restored the notes to their par value was that of converting a large number of them into bank capital. This was done by the Bank receiving a number of its own notes from the public at their par value, in payment of subscriptions to an increase of its capital stock (*v.* p. 251), and by then cancelling the notes. The total circulation of notes being thus reduced, their value was restored.

Bank's Monopoly of Joint Stock Banking

In 1709 the Government was again in pecuniary embarrassment, and the Bank was allowed to double its capital (which had already been increased to £2,201,171 10s.), on condition of its making a gift of £400,000, and a further advance of £2,175,027 17s. to the Government, while it also obtained the right to increase its note issue proportionately. At the same time the Bank was granted what was supposed and intended to be a monopoly of joint stock banking, by an enactment that no other corporation exceeding the number of six persons, established in England, might " borrow, owe or take up any sum or sums of money on their bills or notes payable on demand, or at a less time than six months from the borrowing thereof." This presumed monopoly of joint stock banking was in reality only a monopoly of note issue, for, as we have seen, joint stock banking can be conducted without any issue of notes (*v.* p. 68), by the creation of " deposits," which may be operated on by means of cheques. At that time, however, joint stock banking was generally believed to be an impossibility, unless it possessed the right of note issue. In consequence of this presumed monopoly, several existing banks were obliged to wind up their affairs, but a large number of private banks were established with fewer than six partners. Up to 1711 the whole of the permanent National Debt consisted of the capital of the Bank of England, but there was also an *unfunded debt* (*v.* p. 251) of £9,500,000, which included the sum that Charles had seized

from the goldsmiths. This debt was taken up by a number of merchants, who were incorporated under the name of *The South Sea Company*, and who received 6% interest thereon from the Government.

In 1720 the South Sea Company came to grief, and the Bank was allowed to increase its capital to £8,959,995 14s. 8d. on certain conditions, one of which was that it should purchase a number of the South Sea annuities.

"Rest"

In 1722 the Bank created a reserve fund called "rest" (*v.* p. 222) out of its profits, to provide for contingencies.

The Bank's capital was again increased in 1742, when it lent £1,600,000 to the Government, and its supposed monopoly of joint stock banking was renewed.

In 1746 and 1782 the capital was increased to £10,780,000 and £11,642,400 respectively.

Second Suspension of Payment of Notes

The years 1783, 1793 and 1797 were years of commercial crises, following on a drain of the Bank's specie reserve, and on the last of these occasions the Bank was obliged to stop payment of its notes on demand.

This restriction of payment of its notes in cash continued until 1823. The Bank's notes, therefore, were during the years 1797-1823 inconvertible paper money (*v.* p. 54).

Panic of 1824

The year 1824 was a period of great speculation, and a large number of joint stock companies sprang into existence. A crisis followed, and in 1825 developed into a panic, which was quieted by the issue of a number of notes accidentally found in an old box. The public regarded the notes as being as good as gold, and the demand for bullion ceased.

In 1826 the Bank established branches in Manchester, Hull, Swansea and Gloucester,* but the scope of its presumed

* There are now altogether eleven branches, two of which are in London and the rest in the country. The branches receive customs duties and taxes on behalf of the Government.

monopoly was confined to within a radius of sixty-five miles of London, but it was not until 1833 that it became generally recognized that the monopoly only applied to the issue of notes of less than six months' date. About that time the need of joint stock banks was strongly felt, and although the Bank endeavoured to assert a monopoly of joint stock banking proper, it was only allowed to maintain the monopoly of issuing notes of less than six months' date within a radius of sixty-five miles of London.

Cash Reserves to be Regulated by Rate of Discount

At about this time the Bank laid down rules for the maintenance of its reserve. It decided that the cash reserve should, by regulating the rate of discount on the banking principle, be kept at the proportion of one-third of its total liabilities (i.e., one-third of both notes and "deposits"), and that the other two-thirds of its liabilities should be supported by securities.

"Proportional Reserves"

This is what Prof. Jevons, in describing the several systems of note issue, calls the *Proportional Reserve:*

"As the bank sees its reserve running down nearly to the legal limit," says Prof. Jevons, "it will be compelled to use additional caution in order to avoid a breach of law. But if the untoward state of trade and credit causes any large portion of the outstanding notes to be presented, the legal tender reserve will be diminished in a greater proportion than the amount of notes, which is larger in absolute quantity.

"If there be 100,000 dollars of outstanding notes, and 40,000 dollars reserve, then it is obvious that the presentation of 20,000 dollars notes will reduce these numbers respectively to 80,000 dollars of outstanding notes and 20,000 dollars of reserves; and if the law required the reserve to be one-fourth part of the liabilities, no more notes could be paid.

Thus from the moment the banker allows his reserve to touch the legal minimum, it becomes unavailable to him except by a breach of law, and it may be said that the law is of little use except when broken.'

Minimum Reserve

This system reduces itself when it comes into operation at all to the *Minimum Reserve* method, which the same writer describes as one which obliges " the issuers to keep on hand a stock of specie, which is never to be allowed to fall below a certain fixed amount. This would be like recommending a man to avoid impecuniosity by always keeping a shilling in his pocket. The fact that the minimum amount must be kept in the vaults renders it unavailable for meeting demands when they come. There can be no use in such a reserve unless there be a power exercised by the legislature or executive government, of arbitrarily suspending the operation of the law when there is a run upon the banks."

Deposits of American National Banks

This is the system on which reserves are held against the " net deposits " by the national banks of New York. These banks, which are formed into an " association," are by law required to keep a reserve of " lawful money " of one-fourth of their total net deposits;* if this proportion is not maintained, they are obliged to stop the increase of certain liabilities until the reserve is restored (*v.* Appendix F).

But the American reserve of " lawful money " is not entirely a specie one; it may include various kinds of paper, besides gold and silver coin, viz., gold certificates, silver certificates, clearing house certificates,† greenbacks (i.e., United

* This reserve may include the 5% Redemption Fund formed against the note issues (*v.* p. 94).

† The clearing associations grant these certificates (which are subject to a tax of 6%) to banks in exchange for security, so that the gold may be used to meet the demands of the public instead of being kept in the vaults.

" They are temporary loans made by the banks, associated together as a clearing house association, to the members thereof, for

States notes) and Treasury notes. The gold and silver certificates are as good as specie, since they are backed by deposits of coin at the Treasury on the currency principle. But the "greenbacks" and Treasury notes are themselves only credit. The greenbacks, or Government notes, which are limited by law to $346,681,016, are based on a Treasury reserve of $100,000,000, and the Treasury notes are redeemable by the Treasury in either gold or silver. Similarly, the note-issuing banks of *Switzerland* are obliged to maintain a proportional reserve of cash, the proportion being 40%.

To continue with our history of the Bank of England: The Bank, however, failed on several occasions, between the years 1833 and 1839, to preserve the proposed proportional reserve, and in September of the latter year the reserve fell to one-tenth of the securities.

The Committee of the House of Commons, which was appointed to inquire into the cause of this, attributed it to the unsoundness of the banking principle, and recommended the application of the currency principle to the issue of notes, but it omitted to make any new provision to secure the proportion of reserve to "deposits."

The Bank Act of 1844

In 1844 Sir Robert Peel passed the famous Act known as the Bank Charter Act, which made the Bank of England, as far as possible, the one central bank of issue, based its notes partly on securities and partly on the currency principle, and left the regulation of the proportional reserve against "deposits" to be managed on the banking principle. The

the purpose of settling clearing house balances. Such certificates are negotiable, as a rule, only among the members of the association, and are not in any sense to be regarded as currency. They are not even seen by the business community, and do not pass from bank to bank, except in payment of clearing house balances. The certificates enable the banks to meet one another's demands, through the clearing house, by a promise to pay instead of by a transfer of cash. In this way they increase the available supply of currency, and serve a useful purpose in times of extreme emergency by setting free the gold or notes, or Treasury certificates, which are usually employed for this purpose."—*The Economist*, November 2, 1907.

main provisions of this Act are as follows (Statute 1844, c. 32):

(1) That after August 31, 1844, the Bank was to be divided into two entirely distinct and separate departments, viz., the Issue Department and the Banking Department.

(2) That of the total liabilities of the Issue Department, which should consist solely of notes issued by that department, £11,015 100 were to be based on the debt due to the Bank by the Government, and £2,984,900 were to be based on other first-class securities, thus making an issue of notes to the extent of £14,000,000, based on securities. Any issue of notes in excess of this £14,000,000 was to be covered by coin and bullion.

This was effected by the Banking Department handing over to the Issue Department the £14,000,000 of securities and a certain amount of gold coin and silver bullion, in exchange for which the Issue Department gave the Banking Department an equivalent amount of notes. The first published statement of the Issue Department's assets and liabilities after the passing of the Act was as follows:

Issue Department

Liabilities		*Assets*	
Notes issued .	£28,351,295	Government debt	£11,015,100
		Other securities	2,984,900
		Gold coin and bullion . .	12,657,208
		Silver bullion .	1,694,087
	£28,351,295		£28,351,295

(3) The silver held by the Issue Department was never to exceed one-fourth of the gold, because England's standard was gold, and the value of silver fluctuates in terms of the standard; the amount of silver held has, however, never been as much as one-fourth of the gold.

(4) Anyone who wished was entitled, from August 31, 1844, to demand notes from the Issue Department in ex-

change for gold, at the rate of £3 17s 9d. per standard ounce (*v.* pp. 119, 235).

(5) The quantity of securities on which notes might be based, viz., £14,000,000, was not to be increased, excepting only in the following circumstances: If any of the then existing banks of issue should at any time after the passage of the Act, for some cause or other relinquish its right of issue, the Issue Department might increase the amount of its securities to an amount not exceeding two-thirds of the issue so relinquished; but the profits derived from such an increase were to belong to the Government.

(6) A weekly statement of accounts of both the Issue and Banking Departments was to be published in *The London Gazette.*

(7) All existing banks of issue might continue their issues up to a certain fixed limit (this is what Prof. Jevons calls the *maximum issue* system), but no provision was made for any reserve to be kept by these banks either in cash or securities; should any bank subsequently relinquish its issues, it was never to be allowed to resume such issues, and no institution was in future to acquire the right of note issue.

The aggregate issue of all the banks at the time of the Act was about £6,660,000; in 1902 it had fallen to about £870,000.

The Maximum Issue System

Prof. Jevons says that the "Maximum Issue" method "appears to be quite consistent with the principles of political economy. It saves interest on a certain portion of the circulating medium, and supplies a convenient and economical currency. At the same time the notes issued cannot drive gold out of the country beyond a fixed amount."

The note issue of the *Bank of France,* which is the only bank of issue in that country, is regulated by the maximum issue method. The legal maximum is 5,800,000,000 francs, or £232,000,000, and the circulation (about £190,000,000) is backed by about £100,000,000 in gold and £44,000,000 in

silver. The *Chili Banks'* note issues are regulated on the same principle, the maximum issue being 40,000,000 pesos, but they are backed by bonds as well as coin.

The Partial Deposit System

The method provided by the Act for the Bank of England's note issue is called by Prof. Jevons the *Partial Deposit.* It is a combination of the *documentary reserve* and the currency principle. "Under this arrangement we secure all the advantages of the simple deposit system" (i.e., currency principle), "while the community gains the interest, amounting to about £445,000, of which the Government receives £188,000 per annum." Since the securities, being of a first-class nature, might be realizable in the event of there being an insufficient reserve of cash to meet an extraordinary demand, they certainly form a qualified guarantee of convertibility into cash. But if the quantity of the securities were not to be limited, if the issue of notes were to be allowed to proceed to the extent of the whole, instead of to a portion only of the National Debt, the notes would only be convertible into public stock, and not into cash.

The Bank's First Published Balance-Sheet

The first published statement of account of the Banking Department after the passing of the Act of 1844, was as follows:

Banking Department

Liabilities		*Assets*	
Proprietors' capital . .	£14,553,000	Government securities .	£14,554,834
Rest . . .	3,564,729	Other securities	7,835,616
Public deposits	3,630,809	Notes . . .	8,175,025
Other deposits .	8,644,348	Gold and silver coin . . .	857,765
Seven day and other bills .	1,030,354		
	£31,423,240		£31,423,240

The " notes," plus the " gold and silver coin," form the *Reserve* against all the Bank's liabilities, except the notes of the Issue Department. The reason why the reserve consists partly of notes is simply because those notes are actually backed by gold which is kept in the Issue Department, for the Banking Department finds it more convenient to handle the notes than the gold. When the Banking Department wants gold, it simply takes out notes from its reserve, and hands them into the Issue Department, which cancels them and gives it gold in return.* The effect on the Issue Department's balance-sheet is therefore a reduction of both sides of its account, viz., " notes issued " and " gold coin." The effect on the Banking Department's balance-sheet is a reduction of its " notes " and an increase of its " gold coin."

When the Bank wants more notes, it buys them from the Issue Department; the effect on the Banking Department being a reduction of " gold " and an increase of " notes," and on the Issue Department an increase of " notes issued " and " gold coin and bullion." When the public wants notes, they either pay gold for them or else draw a cheque.

" The Active Circulation "

The difference between the quantity of notes in the Reserve of the Banking Department and that of the " notes issued," as shown in the Issue Department, is the number of notes in the hands of the public, which is called the *Active Circulation*, and although it was intended by the framers of the Act that if the gold left the Bank the " Active Circulation " should be reduced, it was soon found that all the gold might go and yet the Active Circulation remain undiminished. What is the explanation of this? If there were no means of withdrawing the gold, except by the presentation of notes, the Active Circulation would have to be reduced by each withdrawal of gold, but there is a way of obtaining the

* Whenever its notes are paid in gold, the Bank cancels them and they are never reissued. A separate ledger account is kept of every note issued.

gold without presenting notes for it, and that is by the presentation of cheques, which reduces the "deposits," and may entirely drain the gold while yet the Active Circulation remains untouched. But while the Active Circulation may thus remain unaltered in spite of the withdrawal of gold, that withdrawal reduces the power of the Active Circulation to expand, for the smaller the quantity of gold the less is the number of notes that may be issued, since the total Active Circulation must never exceed the legal limit of securities, plus the total quantity of gold in the Bank. The result is that when the reserve is allowed to dwindle, by a withdrawal of gold, to a low ebb, and there is a demand by the public for more notes, the knowledge that the Bank is prohibited by law from issuing any more, is liable to create a panic, and in order to restore public confidence the law has to be suspended and the Bank allowed to issue notes, based on securities, in excess of the legal limit.

Suspensions of the Bank Act of 1844

Now the Bank Act has been suspended on three separate occasions since 1844, owing to the Bank's failing to maintain the proportional reserve against its "deposits" on the banking principle.

The first of these occasions was in the year 1847, during the so-called "railway panic." The circumstances which led up to this were—"an abundance of capital and a protracted low rate of interest, which induced speculation on a large scale, an excessive conversion of circulating capital into fixed capital in the form of railways, an unreasonable creation of credit, and an export of gold to pay for the increased importation of corn as a result of a failure of the home wheat and potato crops" (H. D. Macleod). The Bank's reserve fell to £1,660,000, a proportion of 12% of the liabilities, Bank Rate being 8%; and to allay the panic the Bank was authorized to exceed the maximum issue of £14,000,000 notes based on securities. The legal limit of 1844 was not, however, exceeded, for as soon as it became publicly known that

the paper currency might be issued to meet the demand, the danger of a general destruction of credit was removed by an issue of only £400,000 notes.

The second occasion on which the Act was suspended was during the crisis of 1857, which came quite suddenly and unexpectedly. A great financial collapse occurred in America, and the Bank's reserve was drained by an export of bullion to that country. Many banks stopped payment and failed, and the Bank of England was the only source of discount, the rate of which was as high as 10%. The reserve fell to £581,000 on the night of November 12, a proportion of 7% of the liabilities. On this occasion the panic was allayed by the issue of a letter from the Government, stating that if the Bank should be unable to meet the demand for discounts and advances on approved securities, without exceeding the legal limits of their circulation, a bill of indemnity would be proposed to Parliament for any excess so issued. The returns of November 18 and 25 were the only ones which, on this occasion, showed that the principles of the Act of 1844 had been infringed.

The third suspension of the Act was in 1866. The Civil War in America had stopped the supply of the cotton from that country, with the result that it had to be obtained from elsewhere at high prices, and so caused a large export of gold to pay for it. At the same time, a large number of newly-formed limited liability companies failed, and there was a destruction of the credit, on which a great deal of speculation in the stocks and shares of those companies had been maintained. The firm of *Overend, Gurney and Co.*, failed for over ten millions. The crisis reached its height on May 16, 1866, when the reserve was 5% of the liabilities and the Bank Rate 10%, and the announcement that the Bank Charter Act was suspended proved once again a successful remedy of the crisis, although the limit of circulation imposed by the Act of 1844 was not exceeded.

"Elastic Limit" System

The lack of elasticity which is thus apparent in the "partial deposit" system of note issue, as laid down by the Bank Act of 1844, is provided against in the German system which Jevons called the "elastic limit" method. The German Bank Acts permits the Reichsbank or the Imperial Bank of Germany, to issue notes backed by securities* to the extent of £23,641,450. The Bank may issue any further quantity of notes in exchange for a deposit of gold to an equal value. But the amount of notes issued against securities may be increased beyond this limit, "provided that a tax of 5% be paid thereon, and provided that the gold reserve amounts to one-third of the whole note circulation."

To-day, October 19, 1907, the return of the Reichsbank shows:

Cash on hand, Treasury notes and notes on other banks	£44,461,950
The amount of notes which may be based on securities	23,641,450
Therefore the legal note circulation is	68,103,400
But the actual note circulation is	79,827,850
Showing an excess of notes over the legal limit	11,724,450

"There are thus three limitations on the note issue of the Reichsbank. The first is the legal limit, now £22,500,000,† the second, the tax of 5 per cent on any excess over this limit, the third the necessity of holding one-third of the whole circulation in cash" (Inglis Palgrave, *Bank Rate and the Money Market*).

"It is intended in this way to make it unprofitable for any bank to exceed the normal limits. The English Government, indeed, has always deprived the Bank of England of the interest on any excess of notes which it issued during a sus-

* The securities consist of Treasury notes, notes of other banks and discounted bills.

† This amount has since risen to £23,641,450.

pension of the Bank Act, but the German law makes the limit of issue elastic in all cases, so as to avoid the danger of panic" (Prof. Jevons).

The Banks of Scotland and Ireland

In examining the application of the Acts of 1844 and 1845 to the note issues of the Banks of England, Scotland and Ireland, Mr Charles Gairdner, in a paper on *The Constitution and Court of the Money Market* (1888)* makes the following comparison: "At the Bank of England, where alone in England any expansion of note issues can take place, the official arrangements of the Bank are divided into two distinct departments—a note-issuing department and a banking department. From the note department no notes can legally be issued, even for an hour, in excess of the authorized amount, plus the coin in that department. It follows from this, that a sudden demand for notes made on the banking department, sufficient to exhaust their reserve, will create a deadlock.

"In Scotland and Ireland, on the other hand, no such deadlock need take place, because any demand for notes, to whatever extent it may go, may be legally complied with, provided that on the average of four weeks, ascertained at the close of business on each succeeding Saturday, the issuing banks respectively hold, at their principal place of issue, an amount of gold corresponding with the excess of issue beyond the authorized amount.† Contravention of this provision would involve a certain pecuniary penalty on the offending bank; but contravention is improbable and unnecessary, because of the time allowed for strengthening the stock of gold through the principle of average over four successive weeks."

The Austro-Hungarian Bank is allowed to issue £16,666,666

* Quoted by Mr Inglis Palgrave in *Bank Rate and Money Market.*

† £2,676,350 in the case of Scotland, and £6,354,494 in the case of Ireland.

notes in excess of the metal deposited, any issue over that limit being subjected to a 5% Government tax.

The Controversy on the Merits or Demerits of the Bank Act of 1844

The opponents of the Bank Act of 1844 (i.e., those who uphold the banking principle), assert that the Act has failed to be beneficial to the production and trade of England on the ground that it has been three times suspended by the Government, that the fluctuations in the rate of discount have been far more frequent in England since the Act was passed than they were before, and that these fluctuations have been more frequent in London than in other monetary centres.

" Great instability in the rate of discount is a very prejudicial thing to the interests of commerce, and hence to those of banking. The close competition between one country and another renders it a far greater danger to our business now than previously. A supply of capital at a fairly low rate, and at a rate which may be expected to remain tolerably constant, is as important to trade as a steady supply of food and other necessaries of life to every one, and of the materials on which he operates to the manufacturer. Instability in the rate for money tends to render the results of trade more uncertain than they otherwise would be, and is sufficient even to prevent enterprises which otherwise might be carried out to the advantage of the country " (*Bank Rate and the Money Market*, by R. H. Inglis Palgrave).

Mr W. R. Lawson, commenting in *The Financial Times*, 1904, on the frequency and violence of the fluctuations of the London rates, as compared with foreign centres, during 1885-1902, says: " If we divide the period into three sections of six years each, we shall find that in the first, 1885-1890, the London average rate advanced from 2·04 to 3·68%. Concurrently the Paris rate rose from 2·46 to 2·64%—a merely nominal change—and the Berlin rate from 2·91 to 3·75%. Reduced to a common measure, the advance was

80% in London, 20% in Berlin and only 7% in Paris. In the second period, 1890-1896, a strong revulsion of rates took place at all three financial centres, but it was again most violent in London. There the average rate of discount fell from 3·68 to 0·80%, while Paris suffered a nominal decline from 2·64 to 1·75%, and Berlin receded from 3·75 to 3·05%. The respective degrees of fluctuation were 19% in Berlin, 34% in Paris and nearly 80% in London. In the third sexennial period, 1896-1902, there was a rebound in the London rate from 0·80 to 2·97%, and in the Paris rate from 1·75 to 2·37%. But Berlin, owing no doubt to the after effects of its industrial branch, instead of recovering with the other money markets, showed a further decline from 3·05 to 2·19%. In this period the range of fluctuations was 28% in Berlin, 35% in Paris and 270% in London."*

Against these arguments the advocates of the Act (i.e., the advocates of the currency principle), argue that the possibilities of suspension were anticipated by the framers of the Act, and that consequently the three suspensions which actually occurred were only " the proper administrative relaxations of a rule of conduct which they declare to be in general sound and beneficial." With regard to the more frequent fluctuations in the rate of discount, they reply " that the increase since 1844 is due to the growing extent and complexity of commercial relations and the greater facility of communication; while the fact that London suffers more frequent changes than any other monetary centre is due to the high and responsible position which she occupies in international transactions, the effects of all disturbances being felt there as they are felt nowhere else, the disadvantage arising therefrom constituting the necessary price of the great advantage which London enjoys as, in the language of Burke, 'the exchange of the world'" (F. A. Walker's *Money*, p. 456).

*A withdrawal of gold from the Bank of France does not affect the French rate of discount as a similar withdrawal of gold from the Bank of England would affect London rate, owing to the enormous reserves held by the Bank of France (*v.* p. 101).

Mr Inglis Palgrave, speaking of the rate fluctuations, says, "To take two directions only, in which the reserve of the Bank of England and *the rate in consequence* is affected. The first is through the great increase in the Scotch and Irish circulation. This increase causes larger demands on the reserve; these, fifty years ago, were comparatively small, but are now of serious importance. The next is the great increase in the note circulation of the Bank of England. Every week, notes in the hands of the public, whether held by a banker or a private individual, means so much the less in the reserve of the Bank. It is doubtful whether, with the great growth in the use of cheques, a larger number of bank-notes is really required, but the vast increase in the banking offices of the country, now about 6,700—probably not more than 1,000, if so many, in 1845—of itself causes a greater number of notes of the Bank of England to be entered as 'issued' at all times. These notes are, of necessity, held by the banks in England and Wales as 'till money,' and they can scarcely be said to be in circulation. If these notes were in the Banking Department at the Bank of England, the Reserve would be considerably stronger. The requirements for Bank of England notes, now that the English country note issue is almost extinguished, thus help to increase the instability in the rate of discount."

Again, the opponents of the Act point out that the Act failed in its intention to reduce the note circulation correspondingly with a drain of bullion, for in 1847 the quantity of notes in circulation was scarcely at all diminished while the reserve of bullion fell from £16,000,000 to £9,000,000.

The advocates of the Act entirely acknowledge this, but they contend that if it be granted that notes can be issued and maintained in circulation in excessive quantities, then undoubtedly the Bank Act had a salutary effect in restraining issues in times of speculation.

CHAPTER XVII

The Gold Reserves of the Country

THE questions as to what should be the proportion between the reserves and liabilities, both of the Bank of England and of all the other banks of the United Kingdom, and as to how the banking gold reserves of the country can be strengthened permanently, are questions of vital importance and interest.

" The banking deposits," wrote Mr Bagehot in 1873, " are a symbol of an indefinite liability; by means of them, as we see, an amount of money, so great that it is impossible to assign a limit to it, might be abstracted from the Bank of England. As the Bank of England lends money to keep up the bankers' balances at their usual amount, whatever sum foreigners can get credit for may be taken from us, it is not possible to assign a superior limit (to use the scientific word) to the demands which, by means of the bankers' balances, may be made upon the Bank of England. The result comes round to the simple point on which this book is a commentary; the Bank of England, by the effect of a long history, holds the ultimate cash reserve of the country; whatever cash the country has to pay comes out of that reserve, and, therefore, the Bank of England has to pay it, for it is by being so that it becomes the keeper of the final cash reserve. . . .

" No certain or fixed proportion of its liabilities can, in the present time, be laid down as that which the Bank ought to keep in reserve. The old notion that one-third, or any other such fraction is, in all cases enough, must be abandoned. The probable demands on the Bank are so various in amount, and so little disclosed by the figures of the account, that no simple and easy calculation is a sufficient guide. A definite proportion of the liabilities might often be too small for the

reserve, and sometimes too great. The forces of the enemy being variable, those of the defence cannot always be the same. A more distinct view of the abstract principle must be taken before we can fix on the amount of the reserve which the Bank of England ought to keep. Why should a bank keep any reserve? Because it may be called upon to pay certain liabilities at once and in a moment. Why does any bank publish an account? In order to satisfy the public that it possesses cash, or available securities, enough to meet its liabilities. The object of publishing the account of the Banking Department of the Bank of England is to let the nation see how the national reserve of cash stands, to assure the public that there is enough, and more than enough, to meet, not only all probable calls but all calls of which there can be a chance of reasonable apprehension. And there is no doubt that the publication of the Bank account gives more stability to the money market than any other kind of precaution would give. . . .

"At every moment there is a certain minimum which I will call the 'apprehension minimum,' below which the reserve cannot fall without great risk of diffused fear; and by this I do not mean absolute panic, but only a vague fright and timorousness which spreads itself instantly, and as if by magic, over the public mind. Such seasons of incipient alarm are exceedingly dangerous, because they beget the calamities they dread.

"What is most feared at such moments of susceptibility is the destruction of credit; and if a grave failure or bad event happens at such moments, the public fancy seizes on it, there is a general run and credit is suspended. The Bank reserve then ought never to be diminished below the 'apprehension point.' And this is as much as to say that it never ought very closely to approach that point, since if it gets very near some accident may easily bring it down to that point and cause the evil that is feared. There is no royal road to the amount of the apprehension minimum, no abstract argument and no mathematical computation will teach it to

us. And we cannot expect that they should. Credit is an opinion generated by circumstances and varying with those circumstances. The state of credit at any particular time is a matter of fact only to be ascertained like other matters of fact; it can only be known by trial and inquiry. And in the same way nothing but experience can tell us what amount of reserve will create a diffused confidence; on such a subject there is no way of arriving at a just conclusion, except by incessantly watching the public mind and seeing at each juncture how it is affected. Of course, in such a matter the cardinal rule to be observed is that errors of excess are innocuous, but errors of defect are destructive. Too much reserve only means a small loss of profit, but too small a reserve may mean ruin. Credit may be at once shaken, and if some terrifying accident happen to intervene, there may be a run on the Banking Department that may be too much for it, as in 1857 and 1866, and may make it unable to pay its way without assistance—as it was in those years. And the observance of this maxim is the more necessary, because the 'apprehension minimum' is not always the same. On the contrary, when the public has recently seen the Bank of England exposed to remarkable demands, it is likely to expect that such demands may come again. Conspicuous and recent events educate it, so to speak; it expects that much will be demanded where much has of late been demanded often, and that little will be so when in general but little has been so. A bank like the Bank of England must always therefore be on the watch for a rise, if I may so express it, in the 'apprehension minimum'; it must provide an adequate fund, not only to allay the misgivings of to-day, but also to allay what may be the still greater misgivings of to-morrow. And the only practical mode of obtaining this object is to keep the actual reserve always in advance of the 'minimum apprehension' reserve. And this involves something much more. As the actual reserve is never to be less, and is always, if possible, to exceed by a reasonable amount the 'minimum apprehension' reserve, it must, when the

Bank is quiet and taking no precautions, considerably exceed that minimum. All the precautions of the Bank take time to operate. The principal precaution is a rise in the rate of discount, and such a rise certainly does attract money from the Continent and from all the world much faster than could have been anticipated. But it does not act instantaneously; even the right rate, even the ultimately attractive rate, requires an interval for its action, and before the money can come here. And the right rate is often not discovered for some time. It requires several moves, as the phrase goes, several augmentations of the rate of discount by the Bank, before the really effectual rate is reached, and in the meantime bullion is ebbing away and all the reserve is diminishing. Unless, therefore, in times when the Bank is taking no precautions the actual reserve exceeds the apprehension minimum by at least the amount which may be taken away in the inevitable interval, and before the available precautions begin to operate, the rule prescribed will be infringed, and the actual reserve will be less than the 'apprehension minimum.' In time the precautions may attract gold and raise the reserve to the needful amount, but in the interval the evils may happen against which the rule was devised, diffused apprehensions may arise and then any unhappy accident may cause many calamities. I may be asked, 'What does all this reasoning come to? At the present moment, how much reserve do you say the Bank of England should keep? state your recommendation clearly if you wish to have it attended to.' And I will answer the question plainly, though in so doing there is a great risk that the principles I advocate may be in some degree injured through some mistake I may make in applying them. I should say that at the present time the mind of the monetary world would become feverish and fearful if the reserve in the Banking Department of the Bank of England went below £10,000,000. Estimated by the idea of old times, by the idea even of ten years ago, that sum, I know, sounds extremely large. My own nerves were educated to smaller figures, because I was trained in

times when the demands on us were less, when neither was so much reserve wanted, nor did the public expect so much. But I judge from such observations as I can make of the present state of men's minds, that in fact, and whether justifiably or not, the important and intelligent part of the public which watches the Bank reserve, becomes anxious and dissatisfied if that reserve falls below £10,000,000. That sum, therefore, I call the 'apprehension minimum' for the present times. Circumstances may change, and make it less or more, but according to the most careful estimate I can make that is what I should call it now." Mr Bagehot made this estimate of what the apprehension minimum should be, in the year 1873, but circumstances have changed since then. Mr F. Johnstone, writing in 1899, says, "The apprehension minimum must now be placed at a much higher figure. The Bank's own liabilities have increased, and the demands to which it is exposed have also become much greater. Of late years the reserve has never been suffered to fall lower than from 18 to 20 millions, and it has seldom been so low. It may be said, therefore, that the Bank is now expected to take precautions before the reserve gets below £20,000,000."

The average ratio of the Bank's reserve at the present time is about 45%, but that is only the ratio to the Bank's own liabilities, the proportion of the Bank's reserve to the total liabilities to the public in the form of deposits of all the banks of the kingdom which publish accounts, was in 1901 only 2·71%, for, according to *The Bankers' Magazine*, as quoted by Mr R. H. Inglis Palgrave in his *Bank Rate and the Money Market*, the average reserve was in that year £24,046,000, and the deposits, current accounts and circulation of the banks which publish acounts, was £888,100,000. The latter figure, however, may be somewhat in excess of the actual true aggregate of liabilities to the public, for "a good deal of money is counted twice or three times over. Part of the deposits of the provincial banks appears again in the figures of the London institutions, with which the country balances are kept, and similarly a considerable portion of the balances of

the London banks figure again in the deposits of the Bank of England " (*v. Economist*, October 21, 1905).

The so-called reserves of the other banks consist of till money and a credit balance at the Bank of England,* the total of these reserves averaging about 15% of the liabilities to the public in the case of each bank; but the till money is a provision to meet the ordinary everyday requirements, and the credit balance at the Bank is generally supposed to be not much more than the minimum amount required for clearing purposes.

The fact that such an enormous fabric of credit rests on so slender a metallic basis is, of course, largely due to the system which exempts the banks from keeping their own reserves, as well as to the extensive system of clearing, which by economizing the use of the metal, enables the transaction of business on a far smaller quantity of gold than is required by other countries, and increases the danger of financial crises (*v.* p. 84).

There is a general opinion that the present quantity of gold reserves (i.e., of " unused capital ") should be raised, but the solution of the difficulties in the way of doing so has not yet been found. An undue proportion of credit in the form of notes has been prevented by setting a limit to the note issues, and thereby curtailing the profits of the issuers, but no limit has been fixed by law in the case of " deposits "; if means were, however, to be adopted to secure a larger proportion of cash to " deposits," some one would have to bear a loss similar to that involved by the limitation of note issues, and the question as to who that some one should be would have to be determined. As to whether the cost should be borne by the Bank of England or by the other banks, various opinions have been expressed.

Some assert that the burden should fall on the banks, because it is due to their action that the reserves require increasing. The banks have caused the mischief, it is said, by

* All the London banks keep an account at the Bank of England, in order to settle their balances at the clearing house (*v.* p. 79).

unduly beating down rates, by shifting their responsibility on to the Bank of England instead of keeping their own reserves, by economizing the use of gold by the clearing and branch bank systems, and by facilitating foreign drains of gold by financing foreign speculations on the Stock Exchange (*v.* p. 83).

The Economist of July 14, 1906, in an article on bank reserves, says: "The larger reserves are needed to put the banking system, as a whole, upon a more stable basis, and all the banks ought to contribute in some due measure to the cost. Besides, the liabilities of the London banks are, over a series of years, rapidly increasing. The deposits of all the metropolitan banks amounted, at the end of 1895, to £277,000,000, and at the end of 1905 they had increased to £409,000,000. Of course the constitution of a number of the banks had altered a good deal during the interval, as the result of absorptions and amalgamations, so that the increase in deposits was in part apparent only, resulting, as it did, merely through the bringing in to the London record of funds previously held by country banks. We have no means, however, of dissecting the figures and, taking them as they stand, they show an increase during the decade of £132,000,000. The deposits of the Bank of England show no corresponding expansion. The tendency of these is rather to diminish than to increase. They were about £2,000,000 smaller at the end of 1905 than at the close of 1895, though they fluctuate so much from time to time that too much weight must not be attached to this movement. Broadly, however, the position is this, that the London banks are constantly adding very largely to their liabilities, and that increase calls, of course, for proportionately larger reserves, while, on the other hand, the resources of the Bank of England are inexpansive or, at any rate, comparatively so. If then the duty and cost of keeping the larger reserves required to accord with the expansion of banking liabilities are to be thrown upon the Bank of England, that institution would have to lock up, year by year, a larger proportion of its

resources, until in the end these were practically all hypothecated for the purpose. That it could not be expected to do, and could not do if it was to remain a live bank. The banks that assume the liabilities must take their full share in the creating and maintaining of the reserve requisite for them, and the idea that the Bank of England is to relieve them of that obligation is unreasonable and impracticable.

" Nor is the alternative that the Government should bear the cost one that can be reasonably entertained. In this connexion, it is nothing to the point to say, as did Lord Goschen, that ' the question is not only a banking question, it is a national question.' The insufficiency of the banking reserves of the country is certainly a national danger. But it will hardly be argued that because an important branch of the business of the nation is being so conducted as to threaten serious trouble in the event of an emergency, that is a reason why it should be subsidized by the State. The Government may, very rightly, be asked to act as the Chancellor of the Exchequer would have the banks do, and keep an adequate reserve against its savings bank liabilities, and the money market would be put on a better footing if the amount of the Government floating debt were reduced, and the banking funds, which are absorbed in financing it, were set free. But that public funds should be used to relieve the bank shareholders of any portion of the cost of keeping the adequate reserves against their liabilities is out of the question. And Government co-operation of that kind would be about as bad a thing for the banks themselves as it were possible to imagine. If the Government were to assume financial responsibilities with regard to their business, it would have to be given a voice in the conduct of their affairs, while it might also claim a share in their profits, and such Government intermeddling could not fail to prove mischievous."

Another view on the question of banking reserves is that put forward by Mr W. R. Lawson in *The Financial Times*, July, 1904, from which we quote the following extract:

"Domestic banking and foreign banking have become much more differentiated in the past twenty years than they used to be. To a large extent they are now carried on separately, though they still overlap at many points. But, obvious as their differences are, our banking theory takes very little note of them. It is still assumed that the two can be worked together, and, strangest delusion of all, one form of reserve is expected to serve equally well for both. With all deference for the banking authorities of the day, it seems to me that the majority of their discussions on bank reserves are stultified at the outset by taking for granted that two distinct kinds of banking can be carried on with one kind of reserve. The Bank of England reserve has to face two ways—inward and outward—and has to be always prepared for a storm from either quarter.

"This would be unreasonable enough if the Bank directors had a free hand to deal with either class of emergency as it arose. But they have very little freedom of action in the regulation of their reserves. These actually originate, not in the Banking, but in the Issue Department. They are formed mainly by the overflow of new-made notes into the Banking Department—an overflow which may increase or decrease from accidental causes, having little or no connexion with the banking or commercial conditions of the time. Gold may be largely offered at the Bank when trade is dull and the demand for money very slack. As it cannot be legally refused if offered at the statutory price of 77s. 9d. per ounce, notes have to be issued in exchange for it. They may never leave the Bank, or they may be out only for an hour or two. The bulk of them return rapidly, and join the note reserve of the Banking Department, which thus represents, not the deliberate opinion of the Bank directors as to the amount of reserve necessary at a given date, but the extent to which gold has been over-bought and notes over-issued against it at that particular date.

"The fact of the over-issue is indisputable. Evidence of it appears in every weekly return of the Bank of England. Mr

Seyd tabulated for a period of twenty-seven years—January 1, 1845, to December 31, 1871—the amount of notes in the hands of the public in excess of the gold held in the Issue Department, in order to show how seldom any material part of the 'fixed,' or non-metallic, issue had ever got into actual circulation. Only in one week out of 1,409 had it been fully absorbed. In six weeks out of the 1,409 it had been nearly all used. In 305 weeks out of 1,409 more than one-half of it had been required. During the remaining 1,104 weeks, equal to two-thirds of the time, the note circulation had dwindled down to only a few millions in excess of the gold held. That is to say, there was little or no call on the 'fixed' issue to eke out the metallic issue.

"Thus all along the issue department of the Bank of England has been an object lesson in wasted energy. Little more than one-half of the notes it issues get into *bona fide* circulation. In Mr Seyd's time the nominal issues averaged forty millions sterling, of which twenty-five millions sterling was active and the other fifteen millions dormant. To-day the nominal total has risen to fifty millions sterling, and the active issue has increased by only three millions, while the dormant issue is larger by seven millions. In other words, the latter has gained 50%, and the former only 12½%.

"The theorists who devised the automatic gold buying and gold note issuing scheme miscalculated as to both of its fundamental principles. They soon found that they could not control either the gold purchases or the note issues made against them. It required longer experience to discover the fallacy of their other idea—the fixed uniform price of gold imposed on the Bank of England—but that, too, is also coming under suspicion. It is due to the theorists to admit that they foresaw difficulties in the way of enforcing the fixed price. But they boldly resolved that, if the market would not come to them voluntarily, it must be brought by force. When gold had to be got and holders would not sell it to the Bank at its own price of £3 17s. 9d. per ounce, something must be done to break the market and force it down to

the £3 17s. 9d. level. In banking phraseology the 'foreign exchanges had to be operated on,' which meant that the Bank must raise its rate of interest high enough to attract foreign capital to London. It was assumed that the foreign capital, or at least part of it, would come in the form of gold, and that the Bank reserves would thereby be replenished.

"This roundabout device was considered the keystone of the most scientific monetary system ever invented. Two generations of London bankers have lived and flourished on the belief that 'operating on the foreign exchanges' is the natural and proper way to obtain gold. They will probably admit that for the public it is a most expensive and unsatisfactory way, but from their own point of view its absurdity is redeemed by some solid compensations. As a business operation it is the most illogical and wasteful that can be conceived. In order to avoid paying 3d. per ounce extra for, say, half a million ounces of gold, the Bank rate is put up a half per cent to begin with, and so much more interest has to be paid over for every Bank advance and every bill discounted. Estimate the latter at only 500,000,000 sterling, and one-half per cent additional interest will cost the borrowers two-and-a-half millions a year. Very probably the first half per cent rise does not prove effective, and two or three more turns may have to be given to the screw. Each of them will mean another two-and-a-half millions per annum of a fresh burden on the trading capital of the country.

"So long as adequate gold reserves are the recognized corner stone of our banking system, the cheapest and most direct means of maintaining them should be employed. It is equally patent that the cheapest and most direct way to get gold is to buy it in the market at the market price of the day. Why go bidding for money all over Europe, when it is not commercial money you want, but only yellow metal? Why upset all the international exchanges as well as your domestic banking and commerce for the sake of a few millions sterling which might be obtained with a much less disturbance in some other way. Whenever gold reserves are

mentioned in an assembly of London bankers an atmosphere of fiction and artificiality arises. It is at once discovered that the subject 'bristles with controversial matter,' most of which the bankers have either created for themselves or had foisted on them by the legislature.

"Possibly the difficulties attending our bank reserves would diminish if those responsible for them were to give up talking and do something. A single wise move might clear away clouds of 'controversial matter.' One resolute step might explode some of the fictions which have hitherto paralysed action. Various suggestions have been made in banking discussions, any one of which would be worth trying if some one would only try it. Mr Schuster, for instance, in his paper on 'Foreign Trade and the Money Market,' remarked on the significant fact that 'London bankers hardly ever invest in bills on foreign centres.' Whether or not he approved of their abstinence we were left in doubt, but the wisdom of it is, at least, questionable. Another banking authority has asked why London banks never condescend to hold any foreign Government securities in their reserves. There is another question that is becoming practical. Considering our immense liabilities abroad and the sudden claims that may be made upon us in connexion with them, the insular indifference with which our bankers treat all classes of foreign securities is in the best style of the typical John Bull. They have but one fixed idea as to meeting the ultimate balance of their foreign liabilities, and it is gold. What cannot be paid for in any other way must be cashed in sovereigns. They are the *ultima ratio* of the Bank Act, the almost exclusive constituent of our banking reserves, and the prized object for which we are always ready to 'operate on the foreign exchanges' at unknown and incalculable cost to ourselves.

"If our bankers could see their way to a more elastic type of bank reserve, something not all yellow, but with a little variety in it, they might deliver themselves from a rather undignified dilemma and at the same time render a great

service to the commercial public. Suppose the Bank of England were to break the ice by admitting some of the best foreign Government securities among the investments forming its second reserve, and the leading joint stock banks were to follow its example; a new fund would soon be formed, which would be very useful in international exchange operations. If not quite as mobile as gold, it would fidget the money and stock markets a good deal less. Nor is there any serious reason, apart from the extra work involved, why our banks should not occasionally 'invest in bills on foreign centres.' That is part of their business, as understood and practised in all other countries.

"London bankers have hitherto been too insular, partly because of the narrow view they have always taken of their functions, and partly because of their hereditary belief in the Bank rate as a force pump for raising the foreign exchanges. Ought they not, as bankers, to begin to feel a little ashamed of this force pump method? The foreign exchanges may be operated on in many other ways than by forcing up the Bank rate at every sign of weakness in the reserves. International business is now too large for any nation to be able to trust entirely to gold for the settlement of its current differences. Foreign bills, foreign securities, foreign paper of every available kind may in such settlement be quite as useful as gold, and more economical.* Why the country

*The assets of the Reichsbank always include a large number of bills on England and other foreign places. "As a rule, not less than 80 per cent of the foreign bills held by the bank are bills drawn on England."—(Inglis Palgrave.)

A similar policy is adopted by the Bank of Holland. "The law of August 7, 1888, allowed the Bank to buy bills payable abroad. This power has been used, though not to a very large extent. These bills are sold when the foreign exchanges become unfavourable to Holland, and when this occurs are as useful to the bank as the possession of gold."—(Inglis Palgrave.)

Again, speaking of the Bank of Belgium, Mr Inglis Palgrave says, "In the balance-sheet of December 31, 1901, the bills discounted stood at £19,100,000; of this sum the foreign bills held amounted to £6,500,000.

"Through holding these drafts on other countries the council of the bank has the means of operating in any direction when the ex-

which has by far the largest foreign liabilities should take the least trouble to utilize every possible means of liquidation is a paradox too wild to survive much longer.

"Sooner or later our London banks will have to accept the new international conditions and get into line with their Continental and American competitors. They will have to take business as it comes, both foreign and domestic. This will necessitate businesslike ways of "operating on the foreign exchanges" in place of the force pump. It may also lead to broader views of bank reserves. Less veneration will be felt for the existing primary reserves, which, after all, are but heaps of yellow metal. And greater attention will be given to secondary reserves, in the choice of which the capable banker will find scope for all his skill and judgement. Their first requisite will be international validity. By agreement among the great national banks a special class of values might be formed—Government stocks, Treasury bills, Bank paper and gilt-edged securities of the highest class—which would pass as freely as gold in all commercial countries. For banking reserves they would be as good as gold, and for regulating the exchanges they would be far more serviceable.

"One reason why the problem of strengthening our bank reserves hangs fire, in spite of its admitted urgency, may be that it is too exclusively regarded as a gold question.

"Another reason may be that its international bearings have not been thoroughly grasped. Until the international part of the problem has been suitably solved the local part will hang in the air."

changes are unfavourable to Belgium . . . ." "The bonds of foreign governments may be said to hold much the same place in England for these purposes that commercial bills on England do abroad, and often serve the purpose of making a remittance. When this occurs, it tends to check a demand for gold for export which would probably otherwise have arisen. The holding of these bonds in this country is thus a service to us by preventing a drain on our bullion reserves, which might have been very inconvenient."

With a view to ending the present international strife for gold, it has been proposed that an international conference of treasuries and leading banks shall consider the advisability of establishing a permanent commission for international gold circulation and a mutual rate for loans of the yellow metal.

CHAPTER XVIII

Is Money Wealth?

HAVING examined the several classes of money, their relation one to another and their respective influences on the value of the whole money of the world, let us inquire whether or not money is " wealth."

We have seen that commodity money performs three functions, defined by Professor Walker as a medium of exchange, a common denominator of value and a standard of deferred payments.

Commodity money is always regarded as a permanent equivalent of the thing exchanged for; it costs labour to produce it, but its value is not determined by the amount of that labour, its value depends on the laws of supply and demand. It is never extinguished, like credit, by the producer, but it can be destroyed by wear and tear and thereby involve a loss to its possessor in the same way that a loss is incurred by the holder of destroyed credit. Fiduciary money in some of its forms is, like commodity money, regarded as a permanent equivalent, in others as only a temporary equivalent in exchange.

Since it never has a natural cost of production, its value is in no way dependent on labour.

Inconvertible paper, carrying promise of redemption, is regarded as only a temporary equivalent as between the holder and the Government which issues it; but as between one holder and another it is considered to be a permanent equivalent.

Fiduciary money, whether it be a permanent or a temporary equivalent, is given the same name as commodity money; but whether its purchasing power is the same as that of commodity money depends on the power of the law

or the will of the people. To the extent that it *takes the place* of commodity money, to the extent, that is to say, that it is used as a substitute for commodity money, its purchasing power is equal to that of the latter; if it does not take the place of commodity money, its ratio to commodity money falls and it loses purchasing power.

Commercial instruments of credit are always regarded as temporary equivalents. Bank-notes, as between the issuer and holder, are similarly regarded, but between one holder and another they are considered to be permanent equivalents. Bank " deposits " and book debts of all sorts are temporary equivalents.

Credit, like fiduciary money, has no cost of production and is given the same name as commodity money. Whether or not its ratio of exchange or purchasing power is equal to that of commodity money, depends on the will of the people who use it, and the latter naturally take into consideration what are the probabilities of its ultimate proper extinction.

When fiduciary and credit money are used as substitutes for commodity money, they have the same effect on the value of the whole mass of money as would an increase in the production of commodity money. An increase of their quantity has the tendency to lower the value of the world's money, and a decrease of their quantity has the tendency to raise the value of the world's money.

When fiduciary money does not take the place of commodity money, but is depreciated, it is only the value of the fiduciary money that is lowered. The duration of the influence of an increase of money on the value of money depends upon the length of time for which the increased supply remains in existence. Commodity money, e.g., is very durable, and is only subject to slow destruction by wear and tear. Fiduciary money may be absolutely permanent, as in the case of inconvertible paper, which is never redeemed, and which, when spoilt or worn out, may be replaced by the issuer without cost. Fiduciary money, based on lands or

taxes, may remain alive for varying periods, as also may that which is redeemable in money at indefinite dates.

Credit is similarly kept in existence for varying periods, but in a country where there is a certain quantity of it in constant use, that quantity exercises a permanent influence on the value of the world's money.

Thus the creators of fiduciary money and credit, which displace commodity money, are competitors of the producers of the precious metals; and the fiduciary money and credit itself is, in its influence on the value of money generally, equivalent to an increased production of the precious metals.

The question then arises, is money, in any or all of its forms, wealth?

The answer to this question depends on the definition we give to the word " wealth." If wealth is made to include all articles of value, irrespective of the manner in which the value arises, then unquestionably money in all its forms is wealth, whether it be commodity, fiduciary, token or credit, for it is an article of value, i.e., an article having an exchange ratio. But there are obvious objections to calling money wealth, even if we accept this definition of the word.

In spite of the fact that all forms of money figure in a business man's balance-sheet as assets, and in spite of the fact that all money has an exchangeable value, which is subject to the laws of supply and demand, there is one great difference between money and all other articles of value.

In the case of money there is always a demand for more if more is produced, in spite of there being no use in increasing the supply. Although the increased supply may be useless, it is, by common consent or by law, forced to be used; it is given a ratio of exchange where, if it were not money, it would have none. For example, although the supply of commodity money (gold and silver) is said to be limited by cost of production, it will nevertheless continue to be produced so long as the cost of its production can be diminished; the more that can be produced for the same cost of production the greater will be the production, and no matter how great

the increase of production on these conditions may be, all that is produced will be used as money (provided, of course, that gold and silver serve no other but the money purpose); if, as is the case, gold and silver are used also in the arts, a portion of the increased supplies will be used in the arts, and a portion will have to serve as money. The value falls certainly with every increase of supply, but none the less it always has a value, a ratio, it always has a demand, in spite of there being no natural use for it, in spite of its not contributing to the necessaries, comforts or luxuries of mankind.

The case of other commodities is different. The moment that an article of value ceases to be a necessary, comfort or luxury, it ceases to be an article of value, it ceases to have a ratio of exchange; whether it cost labour or not to produce it, it will not be exchanged, and is therefore obviously not wealth. Hence, although increased supplies of money must be called an increase of wealth under the given definition of that word, yet it is an increase of wealth which does not profit mankind as would an increased production of other forms of wealth. So, if we call commodity money wealth, we are liable to lose sight of this great distinction between the commodity money and other commodities.

Again, take the case of fiduciary money in the form of inconvertible paper, the cost of whose production is, comparatively speaking, *nil*. If the supply could be regulated, and if it were used by all countries as the sole form of money in the world, such money would perform all the functions of commodity money equally as well or ill as commodity money does, and it would be every whit as much entitled to be called wealth as is commodity money. But let the supply be increased to an extent sufficient to lower its value, the increase, so far from profiting mankind, might do immense injury; the increase would be as much an increase of wealth as a similar increase of commodity money, and just as undesirable.

Surely it cannot be said that an increase of commodity money, which has the effect of raising prices to the gain of

the producers and the loss of others, is any more an increase of wealth than an increase of inconvertible paper which has the same results. It cannot be said that the one is wealth because it cost labour, and the other is not wealth because it has no cost of production, for an article may cost labour and yet not be an article of value at all, i.e., may not be wealth.

Now, let us look at the claims of credit to be called wealth.

Credit has just as much or just as little right to be called wealth as commodity money, according to the definition given to wealth.

Mr Norman denies that credit is wealth on the following grounds: "There are 25,000 frs' worth of goods being sold over the counter which have passed through the hands of numerous owners in the stages of manufacture, from their raw to their finished state.

"It is within the experience of present business that credit instruments for more than 50,000 frs are in circulation based on the goods which are being sold over the counter.

"In this instance of the sale of goods over the counter for 25,000 frs and the credit instruments for 50,000 frs in circulation founded on the honest use of credit, the basis of which is the wealth in the goods; can the portion of the world's wealth, embodied in the credit instrument, be more than the cost of the paper and printing the promise to pay money? The charge that C makes on A for the use of his credit, and the interest that D makes by discounting bills, are means for promoting individual and national wealth, so long as bankruptcy does not occur to prevent the liquidation of such instruments. Is it not a monstrous delusion to assert that until these 50,000 frs of credit, or pieces of paper of no intrinsic worth, are liquidated, they are wealth? and upon liquidation or destruction of them the wealth has gone?"

But why should it be any more of a monstrous delusion to call credit money wealth than to call an undesirable increase of commodity money wealth? Let us compare credit with the other forms of money.

Credit money has, by law or common consent, been en-

dowed with only a *temporary* value, although, like fiduciary money, it costs no labour to produce. Instead of having a *permanent* value, or ratio, like commodity and fiduciary money, it is obliged to be extinguished by the producers, either on demand or at a fixed future date. The creation of credit money is as costless as the production of increased quantities of commodity money which do not involve a corresponding additional cost of production, as facile as the issue of inconvertible paper, and it has as much right to be called wealth as either of those other forms of money.

What, then, shall we say of the extinction of credit? It is similar to the extinction of inconvertible paper based on land or taxes or redeemed by money, like the notes which helped to give birth to the Guernsey market. It is as much an extinction of wealth as the redemption of the inconvertible paper. If the law enforced the producer of commodity money to extinguish all amounts of money which he could produce without an additional cost of production, the extinction of commodity money would be a facsimile of the redemption of credit; there would be no loss either to the producer or to anyone else. Again, as regards the destruction of credit. Wherein does a destruction of credit, which leaves the creator as the gainer at the expense of some one else, differ from a production of commodity money on a diminished cost of production? In both cases the producer gains, and some one else loses, value. And the same thing results from a destruction of commodity money by wear and tear.

Hence, I say, that if the production, extinction or destruction of commodity money is a production, extinction or destruction of wealth, the same must be said of credit.

Now what is meant when credit is said to be *based* on goods? The same expression is used when inconvertible paper is said to be *based* on taxes or land. In the latter case it means that it can be exchanged by the holder for taxes or land, and then cancelled so as to avoid loss to anyone; in the case of credit it means that the credit will, for certain, be

exchanged for one or other of the four forms of *money* on demand or at a fixed future date, and then be cancelled, without loss to anyone.

What, then, is commodity money *based* on? On an indefinite quantity of other commodities, and this without guarantee that it will be cancelled; on the contrary, it is expected and desired that it will not be destroyed except by wear and tear, and the result is that a fall in its value causes the very loss which the proper extinction of credit avoids.

Has commodity money, then, the right to be called wealth any more than fiduciary money or credit? No more and no less.

Money, in all its forms, must, under the given definition of wealth, be called wealth, but we must remember that it is only a representative of other articles of wealth, and a representative, moreover, which, by itself, fails to indicate whether the production of those other articles is, at any given time, on the increase or the decrease.

EVERY MAN HIS OWN FINANCIER

PART THE SECOND

CHAPTER I

THE "Foreign Exchanges" is the term used to express the means by which international indebtedness is discharged.

In calculating the rates of exchange between foreign moneys it should be remembered that if prices of commodities were in every country reckoned in nothing but weights of the pure metal, either gold or silver, there would be no difficulty in ascertaining the rates of exchange between them. For with the exception of a small percentage cost for transmission of the metal from one country to another, a given weight in the one country would be equal in value to the same weight in the other. As we have seen, however, prices are not always reckoned in weights of metal, for out of the six different price lists in the world, enumerated on p. 61, four are due to the use of varying amounts of fiduciary money, the which has the effect of altering the rates of exchange from what they would otherwise be.

We will commence by considering the exchange between countries whose price lists are reckoned in pure commodity money of the same metal, as well as those whose price lists are reckoned in pure metal plus a coinage charge (*v.* pp. 31 and 164). Between such countries a given weight of pure metal in the one is equal in value to the same weight in the other.

Since, however, that weight of metal is indicated by different monetary signs and different names of weights in the different countries, we have to take those factors into our calculations, and the equation between the two monetary signs which we ultimately find out to represent the same weight of pure metal in any two countries is called the *fixed par of exchange* between those countries. In other words, the theoretical mint price (*v.* pp. 22, 34) of a given weight of metal in one country and the theoretical mint price of the same weight in the other country, put together in the form

of an equation, signify the *fixed par of exchange between the two countries.*

Two Ways of Expressing a Foreign Rate of Exchange

The first thing to note is that between any two countries the rate of exchange is capable of being expressed in two ways, e.g., between England and France we may express the rate as so much English money equals the French *money of account* (i.e., the franc), or as so much French money equals the English *money of account* (i.e., the £); these two equations merely represent two different weights of metal. In the first case, the equation gives the English and French *monetary signs* for the weight of pure gold contained in a franc; in the second, the equation gives the English and French *monetary signs* for the weight of pure gold contained in a sovereign; hence, both equations represent the same fixed par of exchange; the French sign is the *parity price* of the English, and the English sign is the *parity price* of the French.

In England the precious metals are weighed by troy weight; in most foreign countries the metric weights are used. The following table of troy weights and metric weights, and three or four equivalents between them, will be found all that is necessary to enable us to make the necessary calculations of weights of metal as between foreign countries:

Metric Table of Weights

10 milligrammes	=	1 centigramme
10 centigrammes	=	1 decigramme
10 decigrammes	=	1 gramme
10 grammes	=	1 decagramme
10 decagrammes	=	1 hectogramme
10 hectogrammes	=	1 kilogramme
10 kilogrammes	=	1 myriagramme

English Troy Weights

24 grains	=	1 dwt.
20 dwt.	=	1 oz.
12 oz.	=	1 lb.

Therefore 1 lb.	=	5,760 grains
and 1 oz.	=	480 grains

Equivalents between Metric and Troy Weights

1 gramme	=	15·43235 grains
1 grain	=	·064798 grammes = ·64798 decigrammes
1 oz.	=	31·10 grammes
2·6789 lb.	=	1 kilogramme

The weights of metal (expressed in grains and grammes), which are contained in any country's money of account, are worked in the following manner, which shows us how to ascertain the weight of metal in the English money of account (i.e., in the sovereign), expressed in either troy weight or metric weight, i.e., in either grains or decigrammes.

English *standard gold* (i.e., the mixture of which English gold coins are made) consists of 22 parts of pure gold and 2 parts of alloy; in other words, a mixture which weighs 24 carats, contains by law 22 carats pure gold and 2 carats alloy (*v.* pp. 34-8). Hence, English standard gold is said to be $\frac{22}{24}$ or $\frac{11}{12}$ or $\frac{916 \cdot 667}{1000}$ "fine"; "fineness" signifying the proportion of pure metal contained in standard metal. The fineness of gold is expressed in thousandths (the millesimal system), and pure gold is therefore $\frac{1000}{1000}$.

The *theoretical mint price of standard gold*, or 22 carat gold as it may be called, i.e., the number of coins into which a given weight of the standard gold is manufactured, is 934½ sovereigns for 20 lb.; or, since there are 240 oz. in 20 lb., 934½ sovereigns ÷ 240, which is £3 17s. 10½d. for 1 oz. of standard gold.

Hence, since £3 17s. 10½d. weighs 1 oz. standard gold, the money of account (viz., 1 sovereign) weighs 123·274478 grains of *standard* gold, or $\frac{11}{12}$ of 123·274478, which is 113·001605 grains of *pure* gold; or again, since 15·43235 grains = 1 gramme, 113·001605 ÷ 15·43235 = 7·3224 grammes = 73·224 decigrammes of pure gold.

The fineness of standard gold metal differs in different countries, being:

$\frac{900}{1{,}000}$ in Japan, U.S.A., Germany, Denmark, France, Austria, Holland, Belgium, Finland, Greece, Italy, Persia, the Russian $7\frac{1}{2}$ rouble, Servia, Switzerland, Spain, Argentina and Chili.

$\frac{916{\cdot}667}{1{,}000}$ in England, Portugal, the Russian old half-Imperial, Turkey, Brazil, the Indian Mohur and the Newfoundland 2 dollars.

$\frac{875}{1{,}000}$ in Egypt and the Philippine Islands.

$\frac{917}{1{,}000}$ the Uruguay 5 pesos.

$\frac{986\frac{1}{9}}{1{,}000}$ the Austrian ducat.

Similarly standard silver is of different fineness in different countries, being:

$\frac{900}{1{,}000}$ in Egypt, Uruguay, U.S.A., Argentina, Germany, France, Shanghai Trade dollar, Japan, Philippines, Peru, Austria, Tunis, Morocco, Persia, Venezuela and Zanzibar.

$\frac{925}{1{,}000}$ in England, Newfoundland, the Canadian $\frac{1}{2}$-dollar piece.

$\frac{800}{1{,}000}$ Danish 2 crowns, Japanese 50 sen.

$\frac{945}{1{,}000}$ in Holland.

$\frac{916{\cdot}667}{1{,}000}$ Portuguese 5 testoons, Brazilian 2 milreis, Indian rupee.

$\frac{830}{1{,}000}$ Turkish 20 piastres.

$\frac{9{,}027}{10{,}000}$ Mexican dollar

$\frac{868{\cdot}056}{1{,}000}$ Russian rouble.

The following table gives the weights in grains and decigrammes of the pure metal contained in the money of account of a number of the gold and silver countries of the world, which have been worked out in the same manner as in the example of the British sovereign, just shown.

TABLE A—*Gold Standard*

Name of Country	Money of Account	Equivalent Fractional Currency	Grains of pure metal in the Money of Account	Decigrammes of pure metal in Money of Account
Gt Britain	Sovereign	20 shillings=240 d.	113·001605	73·224
Turkey	Pound	100 piastres=1,000 cents	102·079887	66·146
Egypt	Pound	100 piastres=4,000 paras	114·778088	74·375
Russia	Rouble	100 kopecks	11·946504	7·74
Portugal	Milreis	1,000 reis	25·088524	16·257
U.S. America	Dollar	100 cents	23·22	15·046
Holland	Guilder or Florin	100 cents	9·33348	6·05
Germany	Mark	100 pfenig	5·53134	3·584
India (British)	Rupee	16 anna=64 pice=192 pies	7·53344	4·88
Austria-Hungary	Crown or Krone	100 heller	4·704986	3·049
Scandinavia	Crown or Krone	100 ore	6·222742	4·03
Argentina	Peso	100 centavos	22·401743	14·516
Paraguay	Peso	100 centavos	22·401743	14·516
Columbia, U.S	Peso	100 centavos	23·22	15·046
Bolivia	Peso	100 centesimos	22·401743	14·516
Uruguay	Peso	100 centavos	24·015034	15·56
Peru	Sol	100 centavos	11·30166	7·3224
Mexico*	Dollar	100 centavos	11·61	7·523
Brazil	Milreis	1,000 reis	12·681957	8·218
Japan	Yen	100 sen=1,000 rin	11·574266	7·5
Chili	Peso	100 centavos	·549	·36
France	Franc	100 centimes	4·480359	2·903
Venezuela	Bolivar	100 cents	4·480359	2·903
Bulgaria	Leva	100 stotinki	4·480359	2·903
Finland	Mark	100 penni	4·480359	2·903
Greece	Drachma	100 lepta	4·480359	2·903
Italy	Lira	100 centesimi	4·480359	2·903
Roumania	Leu	100 bani	4·480359	2·903
Servia	Dinar	100 paras	4·480359	2·903
Spain	Peseta	100 centenos	4·480359	2·903
Belgium	Franc	100 centimes	4·480359	2·903
Switzerland	Franc	100 centimes	4·480359	2·903

*Mexico adopted the gold standard in January, 1906.

Silver Standard

Name of Country	Money of Account	Equivalent Fractional Currency	Grains of pure metal in the Money of Account	Decigrammes of pure metal in Money of Account
Hong-Kong	Mexican silver dol.	100 centavos	377·18098 *	244·41*
Shanghai and Canton	Currency tael	1,000 cash	520·84†	337·48†
Java	Rix dollar	250 cents	364·58925	236·65
Persia	Kran	20 shahis=1,000 dinars	71·04	41·43
Philippine Islands	Dollar	100 cents	360·5627	233·65
Siam	Tical	32 phainungs	226·3009	146·64
Parts of the East	British Dollar	- - - - - - -	374·4	242·6076

Other gold standard countries of the world are W. Africa, S. Africa, Australia, Tasmania, N. Zealand, Canada, Costa Rica, Dutch East Indies, Tunis, the West Indies, Zanzibar, Newfoundland and Ecuador.

Other silver countries are, Borneo, Ceylon, Honduras, Korea, Labuan, Mauritius, Nicaragua, Salvador, Tripoli, Straits Settlements and Morocco.

Remedy Allowance

Slight variations from the exact legal fineness, as well as from the exact legal weights, of coins, are allowed by the coinage laws of different countries. These variations are called " remedy " allowances. The British Coinage Act of 1891 allows a " remedy " in the fineness of gold to the extent of two parts in a thousand, while in the weight of a sovereign the allowance is $\frac{2}{10}$ of a grain, and in that of half a sovereign $\frac{2}{20}$ of a grain. The weight of a sovereign is grains 123·27447, and if its weight is less than 122·5 grains it ceases to be legal tender. The weight of a silver shilling is 87·272 grains, and the weight remedy is ·578 grains. Continental mints are generally permitted a remedy of 2‰ (2 per mille, millesimal system) in weight and 1‰ in fineness of gold coins,

*This is the legal amount of silver; but the average amount is only 374 grains or 242·3445 decigrammes.

†This is the amount of pure silver contained in one tael of Mexican dollars of 374 grains pure silver.

and from 2°/₀₀ to 3°/₀₀ in fineness or 3°/₀₀ to 10°/₀₀ in weight of silver coins.

In working out the pars of exchange the use of Table A saves us the trouble of making the calculations by which that table was compiled, and of which we have given an example in the case of the British sovereign.

The pars of exchange are ascertained by the employment of the data furnished by Table A in a chain rule sum.

Chain Rule

A chain rule sum is a series of equations, of which each equation in the chain is related in some respect to those which stand next to it. The equation signs are not necessarily signs of equality, but merely denote that there is a relation between the terms—that the one term corresponds in some manner to the other.

To take a simple case:

If two pounds of sugar cost 4d., and if 9½d. equals 1 franc, what is the cost of 86 oz. of sugar in francs? The answer must be in terms of francs, so that the first term of the first equation and the second term of the last equation in the sum must be francs. The first equation is, therefore:

Francs ?=86 oz. sugar.

The first term of the next equation must be of the same nature as the second of the preceding one, viz., ounces, hence the next equation is:

16 oz.=1 lb.

Similarly the first term of the next equation must be connected with the last term of the preceding, viz., lbs., hence:

2 lb.=4d.

And again, the first term of the next equation must be in pence:

9½d.=1 franc,

the last term of the last equation being in francs, the same as the first term of the first equation.

The whole sum is written as follows:

Francs? = 86 oz. sugar
16 = 1 lb.
2 = 4 pence
$9\frac{1}{2}$ = 1 franc

Finally, all the figures of the second terms of the equations are multiplied together and divided by all the figures of the first terms multiplied together, thus:

$$\frac{86 \times 1 \times 4 \times 1}{16 \times 2 \times 9\frac{1}{2}} \quad \textit{Ans.}\ 1{\cdot}13 \text{ francs}$$

In more complicated sums, where there is any doubt as to which of the two terms should be placed first in an equation, the best thing is to consider whether the result will be increased or decreased; if the smaller amount is placed in the first term the amount of the answer will be increased, if the larger amount is placed in the first term the answer will be decreased.

CHAPTER II

WE can now calculate the fixed pars of exchange between countries which use the same metal as their standard.

Fixed Par between England and Germany

How much English money is equivalent to the German mark (money of account)?

How much German money is equivalent to the English pound (money of account)?

By chain rule—using *grains:*

English pence?=1 German mark
(*v.* Table A) 1=5·53134 grs pure gold
(*v.* Table A) 113·0016 =£1
1=240d.

$$\frac{5{\cdot}53134 \times 240}{113{\cdot}0016} \quad \textit{Ans.}\ \underline{11{\cdot}75\text{d.}}$$

Or by means of *decigrammes:*

English pence?=1 German mark
(*v.* Table A) 1=3·584 dec. gold
(*v.* Table A) 73·224=240d.

$$\frac{3{\cdot}584 \times 240}{73{\cdot}224} \quad \textit{Ans.}\ \underline{11{\cdot}75\text{d.}}$$

German marks?=£1
(*v.* Table A) 1=113·0016 grs pure gold
(*v.* Table A) 5·53134=1 mark

$$\frac{113{\cdot}0016}{5{\cdot}53134} \quad \textit{Ans.}\ \underline{20{\cdot}43 \text{ marks}}$$

Or by means of decigrammes:

German marks?=£1
(*v.* Table A) 1=73·224 decigrammes
(*v.* Table A) 3·584=1 mark

$$\frac{73{\cdot}224}{3{\cdot}584} \quad \textit{Ans.}\ \underline{20{\cdot}43 \text{ marks}}$$

England and U.S.A.

pence?=1 dollar
1=23·22 grs pure gold
113·0016=£1
1=240d.

$$\frac{23{\cdot}22 \times 240}{113{\cdot}0016}$$ *Ans.* 49·316d.

dollars?=£1
1=113·0016 grs pure gold
23·22=1 dollar

$$\frac{113{\cdot}0016}{23{\cdot}22}$$ *Ans.* 4·8666 dollars

Without the aid of our Table A of weights and monetary signs we could have worked the latter as follows: Knowing that U.S. standard gold is $\frac{900}{1000}$ fine, and that 258 grains of that fineness are coined into a ten-dollar gold piece, called an eagle, i.e., given the theoretical mint price.

dollars?=£1
1=123·274 grs standard gold (English)
12=11 pure gold
900=1,000 standard gold (American)
258=10 dollars

$$\frac{123{\cdot}274 \times 11 \times 1{,}000 \times 10}{12 \times 900 \times 258}$$ *Ans.* 4·866 dollars

England versus France, Belgium and Switzerland

pence?=1 franc
1=4·480359 grs gold
113·0016=£1
1=240d.

$$\frac{4{\cdot}480359 \times 240}{113{\cdot}0016}$$ *Ans.* 9·515d.

francs?=£1
1=113·0016 grs gold
4·480359=1 franc

$$\frac{113{\cdot}0016}{4{\cdot}480359}$$ *Ans.* 25·2215 francs

The money of account in Italy is the lira, that of Spain the peseta, and since both the lira and peseta contain the same weight of pure metal as the franc, the par of exchange between England and Italy is:

$$9{\cdot}515\text{d.} = 1 \text{ lira}$$
$$\text{or lire } 25{\cdot}2215 = £1$$

That between England and Spain

$$9{\cdot}515\text{d.} = 1 \text{ peseta}$$
$$\text{peseta } 25{\cdot}2215 = £1$$

So also the moneys of account of Greece, Roumania, Servia, Persia, Bulgaria and Finland, though having other names than the franc, contain the same weight of pure gold, and have the same quantities in their fixed pars of exchange with England as that shown above (*v.* Table A).

England and India

How many pence = 1 rupee?
How many rupees = £1?

India's old gold coin (which is, however, very rarely used) is the "mohur," weighing

1 tola = $\frac{3}{8}$ oz. = 180 grs $\frac{11}{12}$ fine = 165 grs pure gold

But the money of account is the silver token rupee, of which 21·9 = 1 mohur.

pence? = 1 rupee
21·9 = 1 mohur
1 = 165 grains gold
113·0016 = 240d.

$$\frac{165 \times 240}{21{\cdot}9 \times 113{\cdot}0016} \quad \textit{Ans.}\ \underline{16\text{d.}}$$

rupees? = £1
1 = 113·0016 grains gold
165 = 1 mohur
1 = 21·9 rupees

$$\frac{113{\cdot}0016 \times 21{\cdot}9}{165} \quad \textit{Ans.}\ \underline{15 \text{ rupees}}$$

The same result is obtained by taking the gold rupee as containing 7·53344 grains pure gold, as in Table A. The British sovereign was made legal tender in India by an Act of 1898, and the legally fixed ratio between that and the silver rupee is £1 = 15 rupees or 16d. = 1 rupee.

Thus between gold-standard countries we can always calculate the amount of one kind of coin we should receive or give in exchange for any amount of another kind. For example:

How much English money should be given for 78 dollars American money?

£? = 78 dollars
1 = 23·22 grains gold
113·0016 = £1

$$\frac{78 \times 23{\cdot}22}{113{\cdot}0016}$$ *Ans.* £16·02

How much German money should be received for 321 French francs?

marks? = 321 francs
1 = 4·480359 grains gold
5·53134 = 1 mark

$$\frac{321 \times 4{\cdot}480359}{5{\cdot}53134}$$ *Ans.* 260·005 marks

What is the weight of pure gold in grammes indicated by £20 17s. 8d.?

grammes? = £20·883
1 = 73·224 decigrammes
10 = 1 gramme

$$\frac{20{\cdot}883 \times 73{\cdot}224}{10}$$ *Ans.* 152·9136 grammes

What is the British theoretical mint price (*v.* pp. 22, 137) of 31 grains pure gold?

£1? = 31 grains
113·0016 = £1

$$\frac{31}{113{\cdot}0016}$$ *Ans.* ·2743 £ = 5s. 6½d.

CHAPTER III

SIMILARLY we can ascertain fixed pars of exchange between countries which use silver as their standard.

Shanghai and Hong-Kong (Mexican dollar).

How many Shanghai taels = 1 Mexican dollar?
How many Mexican dollars = 1 Shanghai tael?

Shanghai taels ? = 1 Mexican dollar
1 = 242·3445 decigr. silver
337·48 = 1 tael
Ans. ·7181 taels

Mexican dollars? = 1 Shanghai tael
1 = 337·48 decigr. silver
242·3445 = 1 Mexican dollar
Ans. 1·392 dollars

Siam and Java

Siamese ticals? = 1 Javanese rix dollar
1 = 364·58925 grains silver
226·3009 = 1 Siamese tical
Ans. 1·6110 Siamese ticals

What is the theoretical mint price of 488·82 decigrammes of Mexican standard silver, the latter being of full legal fineness, i.e., $\frac{902·778}{1000}$ fine.

peso price ? = 488·82 decigrammes standard silver
1,000 = 902·778 pure silver
244·41 = 1 peso

$$\frac{488·82 \times 902·778}{1,000 \times 244·41}$$ *Ans.* 1·806 pesos

CHAPTER IV

Ratio between Gold and Silver Metal in one Country

In gold-standard countries silver is treated as merchandise, and in silver-standard countries gold is treated as merchandise.

Taking the case of a gold-standard country the gold price of silver fluctuates with the constantly changing ratio between the gold and silver metals.

To-day, June 8, 1907, silver is quoted in London at 30d. per standard ounce. In 1873 it was as high as 54d. per standard ounce. But in spite of this varying ratio between the metals, the token subsidiary silver money of gold-standard countries is forced to maintain a fixed ratio with the standard gold. Let us see how to ascertain the ratio between gold and silver, as represented by the fixed ratio of gold standard money to token silver money.

England

1 lb. of standard silver is a mixture of 11 oz. 2 dwt. of pure silver and 18 dwt. of alloy, i.e., English standard silver is of the fineness of $\frac{11\frac{2}{20}}{12}$ or $\frac{925}{1000}$

The theoretical mint price of this silver (standard) is 66d. per oz., i.e., 1 oz. $\frac{925}{1000}$ fine, or 444 grains pure, are coined into 66d. (*v.* p. 35). What ratio between gold and silver does this represent?

grains silver? = 1 gold

113·0016 grs = £1

1 = 240d.

66d. = 444 grains silver

$$\frac{240 \times 444}{113{\cdot}0016 \times 66}$$ *Ans.* 14·287 : 1

Of all the terms in this chain rule sum, the only one that ever alters is the first one in the last equation, viz., the number of pence per ounce. All the other terms are fixed. If we omit this variable term from the chain the result of the other terms will be 942·9955. Consequently, if we divide these fixed figures by the price of silver, whatever that may be at any time, we obtain the answer with a great saving of labour.*

Proof of the above ratio 14·287 : 1

What theoretical mint price of silver can be established if the ratio between the metals is 14·287 : 1?

d.?=480 grains standard silver
1000=925 grains pure silver
14·287=1 gold
113·0016=240d.

$$\frac{480 \times 925 \times 240}{1{,}000 \times 14{\cdot}287 \times 113{\cdot}0016}$$ *Ans.* 66d. per standard oz.

Now if the gold price of silver (i.e., the practical mint price of silver (*v.* Ch. VII, p. 37) to-day is quoted at 30d. per standard ounce, the seignorage on the silver money is 66—30=36d. per standard ounce, or 120%; the 36d. being fiduciary money.

Proof of this:

If the practical mint price of silver (i.e., the gold price) is 30d. per standard ounce, what is the ratio between the metals?

grains silver?=1 gold
113·0016=240d.
30=444 grains pure silver

$$\frac{240 \times 444}{30 \times 113{\cdot}0016}$$ *Ans.* 31·43

Or, by the fixed figures, 942·9955 ÷ 30=31·43, and 31·43—14·28=17·15, which is 120% of 14·28. What is the gold price

* Similarly the reader can work out for himself the results of the fixed figures of other chain rule sums throughout the book.

of standard silver if the ratio between the metals is 31·43 : 1?

d.?=444 grs pure silver (=1 standard oz.)
31·43=1 gold
113·0016=240d.

$$\frac{444 \times 240}{31{\cdot}43 \times 113{\cdot}0016}$$ *Ans.* 30·d.

What is the real gold value of the silver metal contained in one shilling silver token when the ratio between the metals is 31·43?

d.?=1 shilling
1=12d.
66d.=444 grains pure silver
31·43=1 pure gold
113·0016=240d.

Ans. 5·45d.

India

The British India theoretical mint price of 180 grains British Indian standard silver (which is $\frac{11}{12}$ fine) is 1 rupee.

What ratio between the metals does this give?

grains silver?=1 gold
gold 165 grs=1 mohur
1=21·9 rupees silver
1=165 grains pure silver

Ans. 21·9 : 1

Or again:

grains silver?=1 gold
113·0016=1 sovereign
1=15 rupees silver
1=165 grains silver

Ans. 21·9 : 1

Proof of this:

What theoretical mint price of 180 grains standard silver

can be established by British India, if the ratio between the metals is 21·9 : 1?

rupees? = 180 grains standard silver
12 = 11 pure
21·9 = 1 gold
165 = 1 mo'mur
1 = 21·9 silver rupees

$$\frac{180 \times 11 \times 21{\cdot}9}{12 \times 21{\cdot}9 \times 165}$$ *Ans.* 1 rupee

Now if the English practical mint price (i.e., gold price) of silver to-day is 30d. per English standard ounce, what should be the parity British India practical mint price (i.e., gold price) of 180 grains. India standard silver?

annas? = 180 grs Indian standard silver
12 = 11 pure
925 = 1000 English standard
480 = 30d.
16d. = 1 rupee
1 = 16 annas

Ans. 11·14 annas

Or again:

annas? = 180 grs Indian standard silver
12 = 11 pure silver
31·43 = 1 gold (ratio gold to silver)
7·53344 = 1 rupee gold
1 = 16 annas

Ans. 11·14 nearly

which is, therefore, the true gold value of the silver metal contained in the rupee.

That is to say, the seignorage on the rupee is 16 annas less $\frac{11{\cdot}14}{4{\cdot}86}$ annas

and 4·86 is the fiduciary portion of the rupee, and the seignorage is about 43½%

Proof:

What ratio between the metals is indicated by the British Indian practical mint price of 11·14 annas for 180 grains standard silver?

grains silver?=1 gold
165=1 mohur
1=21·9 silver rupees
1=16 annas
11·14=165 grains pure silver

$$\frac{21{\cdot}9 \times 16 \times 165}{165 \times 11{\cdot}14} \quad \textit{Ans.}\ \underline{31{\cdot}43}$$

which is the same result shown by the English practical mint price of 30d. per standard ounce (*v.* p. 149).

U.S.A.

The theoretical mint silver price of 412·5 grains of silver $\frac{900}{1000}$ fine is 1 silver dollar. What ratio between the metals does this signify?

grains silver?=1 gold grain
23·22 grs=1 dollar gold
1=1 silver dollar
1=412·5 grs U.S. American standard silver
1,000=900 pure

Ans. 15·988 : 1

Proof:

What theoretical mint price of 412·5 grains standard silver can be established if the ratio between the metals is 16 : 1?

dollars?=412·5 grains standard
1,000=900 pure silver
15·988=1 gold
23·22 grs=1 dollar

$$\frac{412{\cdot}5 \times 900}{1{,}000 \times 16 \times 23{\cdot}22} \quad \textit{Ans.}\ \underline{1\ \text{dollar}}$$

Now if the English practical mint (i.e., gold) price of silver to-day is 30d. per English standard ounce, what would be the parity U.S.A. practical mint price (i.e., gold price) of 412·5 grains of silver (standard U.S.A.)?

dollars? 412·5 grs U.S.A. standard silver
1,000=900 pure
925=1,000 English standard
480=30d.
49·316=1 dollar (par of exchange)

Ans. ·509 dollars or 50·9 cents

Or again:

gold dollars?=412·5 grs U.S. standard silver
1,000=900 pure silver
31·43=1 gold (ratio of silver to gold)
23·22=1 gold dollar
50·9 cents

Thus the seignorage on the silver dollar is $1—·509=49·1 cents or 96·5%, and the 49 cents is fiduciary money.

Proof:

What ratio between the metals is indicated by the U.S.A. practical mint price of 50·9 cents for 412·5 grains silver $\frac{900}{1000}$ fine?

parts silver?=1 gold
23·22=1 dollar gold
·509=412·5 grains standard silver
1,000=900 pure silver

Ans. 31.43

31·43—15·988=15·43, which is 96·5%.

France

The silver franc is the theoretical mint price of 60 deci-

grammes of silver $\frac{900}{1000}$ fine, i.e., of 45 decigrammes of pure silver; what ratio between gold and silver does this represent?

decigrammes silver? = 1 gold
2·903 = 1 gold franc
1 = 1 silver franc
silver franc 1 = 45 decigrammes silver

$$\frac{45}{2{\cdot}903} \quad Ans.\ \underline{15{\cdot}5 : 1}$$

In this way we can ascertain the market ratio between the gold and silver metals which is represented by the fixed mint ratio between gold money and silver money in every gold country where the two metals are used concurrently as money, and by a comparison of those fixed mint ratios with the actual ratio of the present day, or by a comparison of the theoretical price of silver with the current practical mint price (i.e., gold price) of silver, we can estimate exactly the amount of fiduciary money there is in a silver token coin.

We have seen that when the ratio between gold and silver is 31·43 : 1:

the seignorage on English silver token money is 120%, owing to the theoretical mint price of silver being 14·287 : 1;
the seignorage on Indian silver token money is 43·50%, owing to the theoretical mint price of silver being 21·9 : 1;
the seignorage on U.S.A. silver token money is 96·5%, owing to the theoretical mint price of silver being 15·988 : 1.

In other words, these silver tokens contain commodity and fiduciary money in the following proportions:

	commodity	fiduciary	total
English silver tokens contain .	45·5%	54·5%	100%
British Indian tokens contain .	69·62%	30·38%	100%
U.S.A.	50%	50%	100%

The proportion of commodity to fiduciary money in the

tokens, alters with every change in the ratio between the metals (*v.* Part I, p. 38); the wider the ratio, which is due to a fall in the value of silver or rise in the value of gold, the greater becomes the fiduciary portion of the silver token and the less the commodity portion, and vice versa in the case of a narrowing market ratio due to a rise in the value of silver or fall in that of gold.

As the fiduciary portion of a silver token has no value outside the country which constitutes it a money, and as the commodity portion varies according to the ratio of the metals, it is clear that the rate at which the silver tokens of one country will exchange for the gold of another varies with the ratio between the metals.

For example, let us ascertain the British value of an Indian silver rupee at the present moment, when the ratio between the metals is 31·43 : 1, and compare it with the British value of the same coin when the ratio between the metals was 14·287 : 1, as was the case for some time prior to 1873.

The British value of the silver rupee when the ratio is 31·43 : 1:

d.?=1 rupee silver
1=165 grains pure silver
ratio 31·43=1 gold
113·0016=240d.

Ans. 11·14d.

We found that 11·14 annas was the British Indian practical mint price of 1 rupee when the ratio was 31·43 : 1, and we found that the gold par between England and British India was 16d.=1 rupee or 16 annas. Hence, as 11·14d.=11·14 annas, we see that the practical mint price (i.e., gold price) of silver in the country using a silver token, is equivalent to the gold price of that token in other gold standard countries.

The British value of the silver rupee, when the ratio was 14·28 : 1, was:

d.?=1 silver rupee
1=165 grains silver
ratio 14·28=1 gold
113·0016=240d.

Ans. 24·54d.

Thus, the British value and the India practical mint price of the silver rupee fall with every rise in the ratio between the metals.

CHAPTER V

Now the exchange between the gold money of gold-standard countries and the silver money of silver-standard countries, is ascertained in the same way as we have just seen is the exchange between the gold money of gold countries and the silver tokens of other gold countries; there cannot be a *fixed* par of exchange between them (*v.* pp. 37,46), and the ratio of exchange varies with the ratio between the metals, so that the par can only be an *arbitrated* one (*v.* p. 160), for it can only be ascertained by the introduction into the chain rule sum of the ratio between the metals at the time of exchange.

Arbitrated pars of Exchange between Silver Countries and Gold Countries

*England and the Mexican Silver Dollar of Hong-Kong**

How many English pence for the Mexican dollar?
How many Mexican dollars for the English pound?
The ratio between gold and silver being 31·43 : 1.

d.?=1 Mexican dollar
1=377·1809 grains silver
ratio silver 31·43=1 gold
113·0016=240d.

Ans. 25·48d.

Mexican dollars=£1
1=113·0016 gold
ratio gold 1 =31·43 silver
377·1809 =1 dollar

Ans. 9·41 dollars

*This is not the exchange between England and Mexico. Mexico is a gold-standard country, and the amount of gold represented by its silver dollar (in the exchange between England and Mexico) is given in Table A, p. 139.

Since, however, the Mexican dollar rarely contains the full legal weight of silver, but on an average contains only 374 grains of pure silver (*v.* p. 140), the value of one dollar works out to only 25·29d. If the price of standard silver is used in the chain in place of the ratio the sum will be:

d.?=1 dollar
1=374 grains silver
444=30d. (price of standard silver)
Ans. 25·29d.

Japan and China (*Shanghai*)

Ratio 31·43 : 1.

Japanese yen?=1 Chinese tael
1=520·79 grains silver
31·43=1 gold
11·5742=1 yen
Ans. 1·44 yen

Chinese taels?=1 Japanese yen
1=11·5742 gold grains
1=31·43 silver
520·791=tael
Ans. ·6985 taels

England and China (*Shanghai*)

Price of English standard silver being 30d. per ounce.

d.?=1 tael currency
1=520·79 grains pure
444=30d.
Ans. 35·19d.

Here the fixed figures (*v.* p. 149) are 1·173, which, if multiplied by the price of silver (30d.) give the same result.

taels currency?=£1
1=240d.
30=444 grains pure silver
520·79=1
Ans. 6·83 taels

We have already illustrated the arbitrated par between India and England, when India was a silver-standard country (*v.* p. 156). When the ratio between the metals was 14·28 : 1, the arbitrated par was

24·54d. = 1 rupee,

and every fall in the value of silver caused a further fall in the rate of exchange.

But as India now professes to have a gold standard, and the silver rupee is no longer coined freely, the gold par is a fixed one, and the silver rupees are tokens.

CHAPTER VI

Now in just the same way that the fiduciary portion of a silver token has no free circulating value outside the country where it is by law established as one of the forms of money, so, too, no other form of fiduciary money has a free circulating value, except in its own country (*vide* p. 53); this applies to seignorage, to debasement and to inconvertible paper.

It will be remembered that price is the agent which distributes the precious metals throughout the world (*v.* p. 17) and that by this means the value of money is equalized in all countries. We must, therefore, consider the rates of foreign exchange as equations which represent the prices of one country which are equivalent to the prices of another country.

If prices are reckoned in nothing but the precious metals, the rates of exchange will not vary from the fixed or arbitrated pars which we have just been examining, except by the cost of transmission of the metal from one country to another and a small commission to the dealer. But if prices are reckoned in fiduciary or token money, the foreign rates of exchange will vary whenever the value of the fiduciary money, or the token, varies from the standard of the country where it is used, and we consequently have to calculate an arbitrated par of exchange, e.g.:

Arbitrated par of exchange between standard gold money of one country and depreciated inconvertible paper based on gold of another country.

England and Italy

The fixed par between England and Italy is:

Lire 25·22=£1 (*v.* p. 145)

Let us suppose that Italy's inconvertible paper is depre-

ciated. The actual rate of exchange will then represent the amount of English gold that is equivalent in England to an amount of inconvertible paper in Italy.

In expressing the relation between depreciated paper money and a gold money of the same country, we may either say that the paper is at a discount, or the gold is at a premium, e.g.:

Suppose the paper lire is at a discount of 7% as compared with the gold lire, we may say that the gold is at a premium of 7·52%, worked as follows:

A discount of 7% means that 93 gold = 100 paper.

	gold	paper		gold	paper
hence as	93	: 100	: :	100	: x

$$x = \frac{100 \times 100}{93} = 107{\cdot}52, \text{ i.e., a premium of } 7{\cdot}52\%$$

And vice versa.

A premium of 7·52% means that 107·52 paper = 100 gold.

	paper	gold		paper	gold
hence as	107·52	: 100	::	100	: x

$$x = \frac{100 \times 100,}{107{\cdot}52} \text{ or } 93, \text{ i.e., a discount of } 7\%$$

Let us assume then that the paper lira is at a discount of 7%, or in other words, that gold in Italy is at a premium of 7·52%, what will be the arbitrated par between England and Italy?

paper lire? = £1
1 = 73·224 decigrammes gold
2·903 = 1 gold lira
100 = 107·52 paper
Ans. 27·12 paper lire

Thus the rate 27·12 is 7·52% higher than the fixed par rate 25·22, and since that rate is higher than the cost of transmitting gold from Italy to England (*v.* p. 160) we can at

once see that the Italian currency contains a depreciated fiduciary money.

England and Argentine

The fixed par of exchange between England and Argentine is:

d.?=1 peso
1=14·516 decigrammes gold
73·224=240d.

Ans. 47·577d.=1 peso

or,

pesos?=£1
1=73·224 decigrammes gold
14·516=1 peso

Ans. 5·044 pesos=£1

Now suppose we are told that gold in Argentina is at a premium of 127%, what will the arbitrated par be? (*v.* p. 188).

d.?=1 paper peso
paper 227=100 gold
1=47·577d. (fixed par).

Ans. 20·96d.

or,

paper pesos?=£1
1=5·044 gold pesos
100=227 paper

Ans. 11·45 paper pesos

The premium on gold of 127% is a discount on the paper of 55·95%.

Thus 227 : 100 :: 100 : x

$$x=\frac{10{,}000}{227}=44\cdot05$$

and 100—44·05=55·95%

And given the arbitrated par we can find the premium on gold, or the discount on paper, e.g.:

Given that 20·96d. = 1 paper peso
or 11·45 paper pesos = £1
paper pesos? = 100 gold pesos
5·044 = £1 (fixed par)
£1 = 11·45 paper pesos
Ans. 227 paper pesos

or,

paper pesos? = 100 gold pesos
5·044 = £1 (fixed par)
1 = 240d.
20·96 = 1 paper pesos
Ans. 227 paper pesos

In the same way, if the silver rupees of India were to become depreciated, we should have to calculate the premium on gold in terms of the silver rupees, in order to ascertain the arbitrated par between India and other gold-standard countries (*v* p. 40).

CHAPTER VII

Arbitrated Par of Exchange between Standard Gold Money of one Country and Gold plus a Coinage Charge Principal Money of Another

PRICES in France are reckoned not in pure gold money alone, but in gold plus a coinage charge. Hence, the rate of exchange between France and England is an equation which represents the amount of gold money in England which is equivalent to an amount of gold money plus a coinage charge in France.

We have seen that the theoretical mint par between England and France is:

$$25{\cdot}2215 \text{ fr.} = £1$$

or

$$9{\cdot}515\text{d.} = 1 \text{ fr.}$$

But since the French mint makes a coinage charge, the practical mint price of gold is different from the theoretical mint price. The theoretical mint price of 1 kilogramme gold $\frac{9}{10}$ fine is 3100 francs, and hence of 1 kilogramme pure gold it is $3100 \times \frac{9}{10}$, or 3444·444 frs.

The coinage charge of 1 kilogramme of gold $\frac{9}{10}$ fine is 6·70 frs.* Hence the practical mint price of 1 kilogramme gold $\frac{9}{10}$ fine is 3100—6·70=3093·30 frs, and the practical mint price of 1 kilogramme pure gold is:

$$\frac{3093{\cdot}30}{1} \times \frac{10}{9} = 3437 \text{ francs}$$

and this is the price at which the French mint buys foreign coins.

* The German mint charges 6 marks for coining 1 kilogramme of gold.

Hence, the practical par of exchange between England and France is:

francs?=£1
1=7·3224 grammes
1,000=3437 francs

$$\frac{7{\cdot}3224 \times 3437}{1{,}000} = 25{\cdot}167 \text{ francs}$$

The coinage charge of 73·224 decigrammes (the gold contained in £1, or francs 25·22) of gold is therefore 25·22—25·16=·06 francs.

If this coinage charge has, in France, the value of the gold contained in ·06 francs, the purchasing power of 25·16 francs in France would be the same as that of £1 in England, and the coinage charge would be equivalent to a fiduciary money taking the place of gold, 25·167 being the arbitrated par of exchange; but if the coinage charge loses its purchasing power, it must be regarded as a depreciated fiduciary money, and 25·22 francs would have the same purchasing power as £1, i.e., the theoretical par would become the actual rate of exchange (*v.* Part 1, p. 31).

CHAPTER VIII

Arbitrated Par of Exchange between a Pure Gold-Standard Money and a Debased one

SUPPOSE the bulk of the British gold coins in circulation were so debased by clipping, sweating or wear and tear, that the sovereigns, instead of containing 113·0016 grains pure gold (the theoretical mint price) contained only 100 grains, and that they had as much purchasing power in England as sovereigns containing 113·0016 grains pure, prices would be reckoned in gold coins of 100 grains, plus a fiduciary money which represented 13·0016 grains, the 100 grains commodity money and the 13·0016 fiduciary money together making up £1.

So long as the purchasing power of these debased sovereigns remained equal to that of sovereigns containing 113·0016 grains, the actual rate of exchange between England and, say, America would be $4·8666=£1 the fixed par (*v.* p. 144, and Part I, p. 25). But if the general level of prices were to rise, the excess of gold would not be exported until the purchasing power of the debased sovereigns fell to that point when a debased sovereign was of less value in England than 4·8666 was in the U.S.A.

Calculating as follows:

$$\begin{aligned} \$?&=£1 \\ 1&=100 \text{ grains} \\ 23{\cdot}22&=\$1 \\ \hline & \textit{Ans.}\ \underline{\$4{\cdot}30} \end{aligned}$$

we find that the debased coins would not be exported until the purchasing power of £1 in England had fallen to be less than the purchasing power of only $4·30 in the U.S.A., or, in other words, instead of 49·316d. representing in England a price equal to $1 in the U.S.A., 55·82d. would represent that price (d.240 ÷ 4·30 = 55·82) (*v.* p. 27).

CHAPTER IX

Arbitrated Par of Exchange between Countries whose chief Money in circulation is Inconvertible Paper based on Gold.

Argentina and Columbia, U.S.

THE Columbian monetary unit is the gold peso or dollar (*v.* Table A). But there is a large national bank-note currency of forced circulation which is greatly depreciated. The national junta of amortisation, however, periodically destroys a certain quantity of these depreciated notes and maintains an official rate of exchange between the paper and gold at 10,000 to 100. The paper is, therefore, at a discount of 99% and the gold at a premium of 9,900%.

Suppose then, that the paper premium on gold in Columbia, U.S., is 9,900%, and that in Argentina 127%, what is the equivalent in Argentina of 10,000 Columbian paper pesos?

Argentina paper $? = 10,000 Columbian paper $
10,000 = 100 gold Columbian $
1 = 15·046 decig. gold
14·516 = 1 gold Argentina $
100 = 227 Argentina paper $

Ans. 235·28

CHAPTER X

Nominal and Real Exchange

BUT the actual rates of exchange which are quoted in the daily newspapers are not by any means necessarily either the fixed or the arbitrated rates (known as the *nominal exchange*) which we have been examining. The actual rates (called the *real exchange*) may fluctuate from the fixed and arbitrated rates within certain ascertainable limits.

We must now examine the causes and limits of these fluctuations.

Debts between countries are generally settled by means of credit in the form of *foreign bills of exchange*, instead of by the remittance of coin and bullion, and only those debts which cannot be settled by bills of exchange are paid in commodity money. (For foreign bills of exchange *vide* Appendix A, p. 293.)

This system of settling international debts by interchanging foreign bills of exchange is precisely the same as that whereby debts arising in the course of domestic trade are settled by the interchange of cheques in the clearing house (*v.* pp. 73–83).

Let us illustrate the manner in which foreign bills of exchange are employed.

An Exporter may get Paid by means of Drawing a Bill

Suppose a wheat merchant, Tom Jones in New York, exports wheat to a firm, John Brown in London. There are two ways in which Tom Jones in New York can get paid for the wheat. (1) He may *draw a foreign bill* on John Brown, i.e., a bill expressed in English money. This bill he can sell for U.S. American money to some one who has imported goods into New York from England and wishes to pay for

them; for the New York importer will send the bill, endorsed, to his London creditor, and the latter will present it and receive payment for it from John Brown in London.

How the Real Rate is Determined

The rate at which Tom Jones sells this bill is called the rate of New York on London, and that rate is settled by the demand and supply in New York of bills drawn by American exporters and others, who wish to obtain money from England.

If no bills on London are drawn and offered for sale in New York, there will be no real rate of New York on London. If the amount of bills offered for sale in New York by those to whom money is owing from England exceeds the demand, bill-sellers will have to be content to take less American money (in exchange for the English amount written on the bill) than the fixed par, i.e., less American money than the fixed par will be equivalent to the English money of account, or, more English money than the fixed par will be equivalent to the American money of account, and this may be expressed in two ways, just as we have seen the fixed par may be expressed (*v.* pp. 136, 144).

Two Ways of Expressing the Real Exchange

The fluctuating real rate may be expressed as, say, either:

$$\$4{\cdot}830 = £1$$
$$\text{or } (240 \div 4{\cdot}830) \text{ i.e., } d.49{\cdot}68 = \$1$$

the same fluctuation being thus regarded from two points of view, viz., the American and the English; for in the equation which expresses the rate, one of the quantities, viz., that which expresses the money of account, never varies, it is a fixed quantity; while the other one is a variable quantity. The country which has the fixed quantity is said to *receive* the variable quantity, and the country which has the variable quantity is said to *give* the variable quantity; thus

in the present example—in the first form of quoting the rate between England and America, England has the fixed quantity, viz., the money of account—one pound—and *receives* the variable quantity, viz., $4·830, which has varied from the fixed par, from America; while in the alternative form of quotation, America has the fixed quantity, the money of account, viz., the dollar, and England *gives* the variable quantity of pence to America, viz., 49·68d., which has varied from the fixed par.

It does not matter which of these two quotations is given us, for from the one we can find the other without difficulty, e.g., given that $4·830=£1, we can find the other mode of quotation by dividing £1 (=240d.) by $4·830, which gives d.49·68= $1, or given that d.49·68= $1, we can find the other mode of quotation by dividing £1 (=240d.) by $49·68, which gives $4·830=£1.

"Favourable" Exchange

When, as in the above instance, the supply of bills exceeds the demand, it is concluded that more money is owed to the country where the bills are bought and sold than is owed by it. The cause may be due to an excess of exports of commodities over imports of commodities, or to various other causes which determine the *balance of trade* (*vide* pp. 18, 177) and which we shall examine as we proceed; but whatever be the reason for it, the rate of exchange so brought about, is said to be "favourable to" or "for" or "in favour of" that country (in this case, New York), because "cheap" money is considered to be advantageous to trade. Thus we see that when the rate is favourable to a country, the buyers of the bills reap the benefit at the expense of the sellers.

If the demand for bills on London, on the other hand, exceeds the supply, buyers will have to pay more American money for the English amount written on the bill than the fixed par, i.e., more American money will have to be given for the fixed English money of account, and the fluctuated

rate may be expressed, as before, in either of the following ways, say:

$4·89=£1
or d.49·08=$1

from which we see that the fluctuation shows that either a larger amount of American money than the fixed par is equivalent to the British money of account, or a smaller amount of English money than the fixed par is equivalent to the American money of account.

"Unfavourable" Exchange

When, as in the latter case, the demand for bills thus exceeds the supply, it is concluded that, owing to an excess of imports over exports, and other items of indebtedness which determine the balance of trade (*v.* p. 18) more money is due *by* the country where the bills are bought and sold than is due *to* it; and the rate of exchange is said to be "against," or "unfavourable to" that country (in this case New York), because dear money is supposed to be disadvantageous to trade. In such case the sellers of bills reap the advantage at the expense of buyers.

For how much Foreign Money must a Bill be Drawn?

Now supposing the wheat cost Tom Jones $10,000, and he drew a bill* in English money, he would want to know the equivalent value of the wheat in English money—the English "parity price" (*v.* p. 136).

If the rate of exchange determined in New York were at par, the equivalent value of the wheat would be:

£?=$10,000
4·8666=£1
Ans. £2,054·82

in this case, if he drew a bill for £2,054·82, he would sell it at par for $10,000; and if the selling price of the wheat in England were greater than £2,054·82, the English importer would,

*We are neglecting the question of discount on the bill for simplicity's sake; that will be explained later.

after paying the bill drawn on him, make a profit. The difference—also called "margin"—between the two prices would give rise to purchasers of wheat in the cheaper market, viz., New York, and sales in the dearer, viz., Liverpool, with the result that the price of wheat would rise in the former and fall in the latter, and ultimately the prices would show but little difference or even become equal. This purchase in one market and sale in another is called "arbitrage," though that term is usually applied to only a certain few classes of goods (*v.* p. 201).

But suppose the rate of exchange were favourable to New York and quoted:

$4·830=£1
or d.49·689=$1

the equivalent English prices of the wheat would be calculated:

£?=$10,000
4·830=£1
Ans. £2,070·39

Hence if Tom Jones drew a sight bill for £2,070·39 and sold it at the current rate of exchange, he would realize the full cost of his wheat, thus:

$?=£2,070·39
1=$4·830
Ans. $10,000

Suppose, on the other hand, the rate were unfavourable to the U.S.A., e.g.:

$4·89=£1
or d.49·079=$1

the equivalent English price of the wheat would be:

£?=$10,000
4·89=£1
Ans. 2,044·99

Hence, if Tom Jones drew a bill for £2,044·99, and sold it

at the current rate of exchange, he would realize the full cost of his wheat, thus:

$?=£2,044·99
1=$4·89

Ans. $10,000

Exporters may get Paid by Receiving Bills from Abroad

(2) The other way in which Tom Jones might get paid for his export of wheat to London is by receiving from John Brown a bill in American money.

This bill was bought by John Brown in London from a British exporter, who drew it on America, in American money,* and Tom Jones will present it to the drawee in New York and receive payment for it to the exact amount of dollars written on the bill. Tom Jones would, if he wished to be paid in this manner, have to consider the rate of exchange which is determined in London, bearing in mind that whatever that rate may be, he wished to obtain $10,000 in New York.

If the rate in London is at par, viz.:

$4·8666=£1
or d.49·316=$1

the cost in London of a bill for $10,000 will be £2,054·82, as in the first example already given.

If the rate in London is favourable to New York and unfavourable to London, viz.:

$4·830=£1
or d.49·689=$1

*There is, it should be mentioned, though not here illustrated, a practice which is peculiar to England, and which is sometimes adopted of drawing bills on foreign countries in *English money*, instead of in the foreign currency; in this case the buyer of the bill in England states on the bill in his endorsement the rate at which the bill is to be paid and the equivalent amount of foreign currency, so that after the first endorsement the bill is treated exactly as if it was drawn in foreign currency. The advantage of this practice is that the drawer need not trouble about calculating the rate of exchange at all.

Tom Jones must raise the English price of his wheat from £2,054·82 to £2,070·39, as that is the cost of a bill for $10,000 on New York (*v.* the second example above).

If the rate in London is unfavourable to New York and favourable to London, viz.:

$4·89=£1
or d.49·079=$1

Tom Jones can lower the English price of his wheat to £2,044·98, as that is the cost of a bill for $10,000 on New York (*v.* third example above).

We will now view the transaction from the point of view of John Brown, the London importer who, having to remit money to New York, may either be drawn upon by Tom Jones, or may buy a bill and remit it.

If he prefers to be drawn upon by Tom Jones he has to consider the rate of exchange which is determined in New York. If that rate is at a par, the wheat will cost him £2,054·82 (*v.* ex. 1) that being the amount of the bill he would have to pay. If the rate is favourable to New York the wheat will cost him £2,070·39 (*v.* ex. 2), as that will be the amount of the bill drawn on him by Tom Jones. If the rate is unfavourable to New York, the wheat will cost him £2,044·98 (*v.* ex. 3).

If, on the other hand, he buys a bill on New York and remits it, the rate of exchange which he has to consider is the rate of London on New York, for the bill is bought and sold in London.

He has to remit $10,000 to Tom Jones. If the rate is at par, i.e.:

$4·8666=£1
or d.49·316=$1

the bill will be bought at par and will cost him:

£?=$10,000
$4·8666=£1

Ans. £2,054·882

If the rate of exchange is unfavourable to London and is quoted:

$4·830=£1
or d.49·689=$1

the bill will cost him

£?=$10,000
4·830=£1

Ans. 2,070·39

If the rate of London on New York is favourable to London, say:

$4·89=£1
d.49·08=$1

the bill will cost

£?=$10,000
4·89=£1

Ans. £2,044·99

In actual practice if Tom Jones drew on John Brown for, let us say, £2,054, he would sell it to the bank in New York which offered him the best price for it, and the bank would either sell it at a profit to some one who wished to remit to England, or it might adopt the following course. It would make Tom Jones endorse over to it the bill of lading and assign it the policy of insurance, so that it would have both these documents as *collateral security* for the payment of the bill. It would then forward the three documents to its London agent. On the maturity of the bill Tom Brown would pay it and the three documents would be endorsed over to him by the bank, after which he would be entitled to take the wheat on payment of freight. The bank of New York has thus paid, in New York, a certain sum of American money for the right to a certain sum of English money to be paid to its nominee in England at a given date. Thus the bank of New York possesses funds in England, which it has created by depleting its funds in New York. In the event, therefore, of there being at any time insufficient

trade bills of exchange to meet the demands of those who wish to remit to England, the bank of New York can itself draw bills on its London agent and sell them to the remitters. These bills are called *bank drafts*. If the bank were to draw such bills to an amount which in the aggregate exceeded the £2,054 trade bills, it would be said to have drawn the excess *without cover* on London or to have drawn *blank credits*. In order to provide that cover it might buy drafts from some other bank and remit them to its London agent. Or (as explained in Chapter XV), it might buy bills on some other country (say Germany or Italy) and remit them to its German or Italian correspondents, who, after obtaining payment of the bills, would with the proceeds buy bills on London and remit them to the New York's London agent, the latter being thus put in funds to meet the overdraft of the bank of New York. If at any time the bank were unable to provide cover to meet its overdrafts, it would be obliged to remit bullion and coin. This would not occur, however, until the fluctuation in rate of exchange had reached its utmost limit (*v.* p. 180).

Only one of the two Countries draws

From this sketch of the use of bills of exchange it will be observed that if two countries were equally indebted to each other, and if in order to receive payment each one were to draw bills on the other, there would be no one in either country who wished to buy the bills. Hence it is neither necessary nor customary for two countries to draw on each other.

The custom is for the exporters of country A to draw bills on the importers of country B, and to sell them to the importers of country A: the bills are then remitted to country B, where the importers extinguish them by payment to the exporters.

Thus:

Country A	*Country B*
C. Exporter of Wheat	E. Importer of Wheat
D. Importer of Cloth	F. Exporter of Cloth

C draws on E, sells the bill to D, who sends it to F, who receives payment of it from E.

Balance of Trade

When the total payments to be made by country A to country B equal the total payments to be made by country B to country A, the rate of exchange will theoretically be at par (*v.* p. 135). Fluctuations from that par are due to variations in the relative amount of indebtedness between the two countries, i.e., to the balance of trade (*v.* p. 170). The balance of trade between countries is determined not only by the visible exports and imports, but also by many *invisible* international transactions, of which no records are kept, and of which, therefore, the extent cannot be gauged by reference to the customs statistics of imports and exports of merchandise, specie and bullion. Among the many unrecorded transactions which give rise to international indebtedness we may enumerate the following:*

(1) Importation and exportation of international securities (*v.* pp. 277, 282).

(2) Transmission of interest on Government securities from debtor to creditor countries (*v.* p. 207).

(3) Expense of foreign travel (*v.* p. 213).

(4) Cost of maintaining fleets abroad.

(5) Payments of war indemnities (*v.* p. 207).

(6) Cost of freight, insurance and commission.

(7) Blank credits and documentary credits (*v.* pp. 206, 213).

(8) Arbitrage operations (*v.* pp. 211, 277).

We shall consider the influence of these several factors on the exchanges as we proceed.

England discharges her indebtedness principally by being

* Of these unrecorded transactions those which give rise to a debt due to us are "invisible exports"; hence it must always be remembered that although our customs statistics show an ever-increasingly large excess of imports over exports, we must not draw any conclusions from those statistics without making some allowance for the "invisible exports" which have to be deducted from the recorded imports in order to arrive at the true balance.

drawn upon by other countries;* the trade bills thus drawn pay the foreigner for his exports to England, and are remitted to England in payment for her exports abroad.

India Council Bills

To this general rule, however, the mode of settlement of debts between England and India is an exception. The Indian Government incurs many debts to England, such as the interest on her public debt, the upkeep of the India office in London, pensions to retired soldiers and civil servants, and materials and stores of all descriptions.

At the same time there are many merchants in England who have to pay India for produce imported by them into England.

The India Government pays her debts to England by being drawn upon by the India Council in London, and the latter offers the bills so drawn for sale to the London importers of India produce through the medium of the banks. The price at which the banks buy the bills depends on the supply and demand for them, the banks offering such price as they think the India Council will accept, which price may consequently fluctuate from par (par being 16d.=1 rupee, *v.* p. 145). For example, we read in the newspaper: "Remittances on India for 90 lacs of rupees were offered to-day for tender by the India Council. Applications amounting to Rs 8,76,15,000 were received at prices varying from 1s. $4\frac{1}{32}$d. to 1s. $4\frac{3}{32}$d. The following amounts were allotted, viz., in bills Rs 57,91,000 on Calcutta, Rs 9000 on Bombay, and Rs 20,40,000 on Madras at an average of 1s. $4\frac{1}{16}$d.; and in telegraphic transfers (*v.* p. 187) Rs 11,60,000 on Calcutta, and Rs 10,000 on Bombay at an average of 1s. $4\frac{3}{32}$d."

In explanation of this: 1 lac=Rs 100,000, which is also written Rs 1,00,000. The applications, i.e., the demand for the bills and transfers, was more than nine times the supply, and the rate of exchange was in favour of India."

If the price offered by the tenderers is not high enough, as

* Bills drawn on London are called *Sterling Bills*.

is sometimes the case, the India Council refuses to sell until a higher price is offered, and the paper may announce that "later the Council sold bills on Calcutta at 1s. $4\frac{1}{8}$d."

Before the par rate of exchange was fixed at 16d. = 1 rupee, the price of bills on India fluctuated with every change in the value of silver, because India's standard was a silver one (*v.* p. 159), and if the merchants had not bought bills they would have had to buy and ship silver at the current market price.

When the ratio between the metals was 14·28 : 1, the price of bills on India was about 24·54d. = 1 rupee, but when the ratio fell to 31·43 : 1, the price fell to about 11·14d. = 1 rupee (*v.* p. 155).

CHAPTER XI

"Specie Points"

WHAT are the limits to those fluctuations in the rate of exchange from the fixed and arbitrated pars, which are due to alterations in the demand and supply of bills, i.e., due to changes in the balance of trade?

The limits are determined by the cost of transmission of bullion and coin from one country to another, interest, freight, insurance and commission being taken into account, e.g., suppose that the rate between England and France is favourable to England, owing to competition by buyers in France for bills on London. If a debtor in Paris has to remit £1,000 to his London creditor he will have to pay more for a bill on London than the par rate, i.e., he will have to pay more francs than 25·22 for £1, or to receive fewer pence than 9·515 for a franc. But he will not, as a general rule, pay more than the cost of shipping coin. The cost of freight and insurance and loss of interest on the 25·22 francs, being put at 11 centimes, he could ship gold at the rate of 25·22 + ·11 = 25·33 francs per £1, and he will, therefore, not pay more for a bill than at the rate of 25·33 francs = £1, or receive less than at the rate of 9·474d. = 1 franc.

Hence, when the rate of Paris on London becomes 25·33 francs = £1, and the indebtedness of France to England continues to exceed that of England to France, French debtors would commence to export bullion to England unless some special means were taken to prevent such an export (*v.* note, p. 182). The rate 25·33 francs = £1 is therefore called "import specie point," because it signifies that gold is on the point of being imported into England. On the other hand, suppose the exchange is unfavourable to London. As the indebtedness of England to France is

greater than that of France to England, an English debtor to France, if he wished to buy a bill on France, would be willing to pay more than the par rate for a bill on Paris, i.e., more pence than 9·515d.=1 franc, or to receive less francs than 25·22=£1. But he will not, as a general rule, pay more than the cost of shipping coin. The cost of freight and insurance and loss of interest on 9·515d. being put at ·042d., he could ship coin at the rate of d.9·515 + ·042d. =9·557d. per franc, and he will therefore not pay more for a bill than at the rate of

9·557d.=fr. 1

or receive less than at the rate of

fr. 25·11=£1

Hence when the rate of London on Paris becomes

fr. 25·11=£1
or 9·557d.=1 franc

and the indebtedness of England to France continues unliquidated, English debtors will commence to export bullion to France. The rate francs 25·11=£1 is therefore called "export specie point," because it signifies that gold is on the point of being exported from England.

The specie points of the exchange between London and Berlin and London and New York, are as follows:

Berlin

Par	M.20·43=£1
Import specie point	20·55=£1
Export specie point	20·31=£1

New York

Par	$4·866=£1
Import specie point*	4·89=£1
Export specie point	4·83=£1

*During the American crisis in October and November, 1907, although the rate reached import specie point, gold was being exported to, instead of imported from, New York; this phenomenon was due to the existence of a 3% premium on gold in New York.

Specie points of exchange between countries are thus found by adding to, or deducting from, the fixed and arbitrated pars of exchange the costs of shipping metal from one country to another. Since those costs may vary, as for example, in consequence of variations in the quantity of bullion shipped, and since artificial means may be taken to hinder an export of the metal,* the specie points cannot be absolutely fixed, even in those cases where there is a fixed par of exchange; while in those cases where the pars of exchange are arbitrated the specie points must of necessity vary with the arbitrated pars.

*The Bank of France charges a premium on gold which is withdrawn for export, but if this caused the rate to rise much above specie point (say 25·40) bullion dealers would be able to collect the gold in circulation and export it at a profit (*v.* p. 239). The Bank of France has also another means of arresting an export of gold. As it has the right to pay its notes and other liabilities payable on demand in silver, it can keep its gold reserves intact. The Reichsbank, or Imperial Bank of Germany, also takes steps to hinder an export of gold.

CHAPTER XII

Foreign Rates of Exchange on London

EVERY country in which foreign bills are bought and sold establishes a price list of bills as a result of its sales and purchases; this price list is nothing more or less than a list of exchange rates.

Moreover, while every country publishes its own list of exchange rates on all other countries, it also receives from those other countries, by telegraph or cable, their rates of exchange on itself.

The following is a specimen of the rates of exchange telegraphed or cabled from other countries to London; columns number 4 and 5 have here been added for the sake of explanation.

FOREIGN RATES OF EXCHANGE ON LONDON

Country	Usance*	Rates of Exchange	Meaning of Rates	Equivalent of other currency
Paris	cheque	25·32	francs & centimes	£1
Brussels	cheque	25·32	francs & centimes	£1
Amsterdam	sight	12·09⅜	florins & cents	£1
Berlin	sight	20·49½	marks & pfennig	£1
Berlin	8 days	20·47½	marks & pfennig	£1
Vienna	sight	24·	krone & heller	£1
St Petersburg	3 months	93·75	roubles & kopecks	£10
New York	Cable transfer	4·83¾	dollars & cents	£1
Lisbon	sight	36½	pence	1 milreis
Madrid	sight	35	pesetas	£1
Italy	sight	25·18	lire & centesimi	£1
Rio Janeiro	90 days' sight	1s.3d.	shillings & pence	1 milreis
Valparaiso	90 days' sight	11 11/16	pence	1 peso

*v. pp. 189, 295.

RATES OF EXCHANGE—*continued*

Country	Usance	Rates of Exchange	Meaning of Rates	Equivalent of other currency
Buenos Ayres	90 days' sight	$48\frac{7}{16}$	pence	1 peso
Buenos Ayres	Prem. on gold	127·27½%		
MonteVideo	90 days' sight	$51\frac{7}{8}$	pence	1 peso
Calcutta	T.T.	$1/3\frac{15}{16}$	shillings & pence	1 rupee
Bombay	T.T.	$1/3\frac{15}{16}$	shillings & pence	1 rupee
Hong-Kong	T.T.	$2/1\frac{7}{8}$	shillings & pence	1 Mexican dollr
Shanghai	T.T.	$2/11\frac{1}{4}$	shillings & pence	1 cu'ency tael
Yokohama	4 months	$2/0_{16}^{9}$	shillings & pence	1 yen

In this list each rate is quoted by merely stating the currency on one country instead of two. Thus, in the case of the rate of Paris on London, instead of

25·32 francs=£1

the quotation is simply 25·32 francs. These single quotations represent the *varying amount* of one country's currency which will purchase the fixed *unquoted money of account* of the other.

All the *European* countries, except Portugal, are quoted in the varying amount of foreign money which is given for the British money of account, the sovereign.* Portugal, and all the other countries, quote the varying amount of the English money (pence, or shillings and pence) which can be received for the foreign moneys of account.

Let us examine a few of these quotations.

Paris Cheque 25·32

This means that bills payable at sight drawn by Paris on London, cost in Paris 25 fr. 32 c. per British sovereign. It might also be expressed as d.9·439=1 fr. (*v.* p. 170).

*In the case of St Petersburg, the rate expresses the varying amount of Russian money which is given for ten instead of one English sovereigns.

As the par is 25·22=£1, or 9·515d.=1 fr., the rate here quoted is unfavourable to France, who has to give more French money for the £1 or receive less English money for the franc. The quoted rate is almost at the specie point when gold should be exported from France to England.

Let us suppose that the quotation of Paris on England was given as 23·80 instead of 25·32 (i.e., very favourable to Paris instead of unfavourable), and that part of this fluctuation from the fixed par was due to a given depreciation of English coin, we could find the extent of the fluctuation which was due to the balance of trade exhibited by the demand and supply of bills, as follows:

If the depreciation were such that £1 of depreciated coins were only worth 19s. full-weighted ones, then the arbitrated par would be:

frs?=20s. depreciated coins
20=19 full-weighted coins
20=25·22

Ans. 23·95 frs*

The difference between 23·95 and 23·80 viz., ·15, is due to the balance of trade and is against England.

If the depreciation were such that £1 of depreciated coins were only worth 18·8s. of full-weighted coins, the arbitrated par would be:

frs?=20s. depreciated coins
20=18·8 full-weighted coins
20=25·22

Ans. 23·69 frs

Hence the difference between the actual rate 23·80 and 23·69, viz., ·11, would be due to the balance of trade being in favour of England.

In the same way we can ascertain the extent of the fluctuation which is due to the balance of trade in the case of rates between gold and silver countries, by first ascertaining the

*v. Part I, p. 24; Part II, p. 166.

arbitrated rate based on the ratio between the metals (*v.* p. 157).

St Petersburg, 3 months, 93·75

This means that time bills of three months, drawn by St Petersburg on London, cost in St Petersburg 93·75 roubles per 10 British sovereigns.

It might also be expresed:

d.25·60=1 rouble (*v.* p. 170).

As the par is 94·58 roubles=£10

or d.25·372=1 rouble, the quoted rate appears to be favourable to Russia, who gives less Russian money for the British sovereign, or receives more English money for the rouble, but here there enters the question of discount on the bill, which is a three months' one. As will be explained in Chapter XIII, p. 193, in detail:

A three months' bill, costing 93·75 roubles, is equal to a sight bill of 94·45 roubles (taking the London rate of discount at 3% p.a.), so that the extent to which the rate is favourable to Russia is 94·58 minus 94·45, or ·13 roubles, and not 94·58 minus 93·75 or ·83 roubles.

Lisbon Sight, 36½d.

This means that sight bills, drawn by Lisbon on London, cost in Lisbon at the rate of 1 milreis for 36½d.

This might also be expressed as:

6·57 milreis=£1 (*v.* p. 170).

As the par is 4·504 milreis=£1

or 53·288d.=1 milreis

the quoted rate is unfavourable to Lisbon, who receives fewer pence for the milreis, or has to give more milreis for the sovereign.

Here, the difference between the par and quoted rate exceeds specie point, and must to some extent be due to a depreciated currency.

Thus (*v.* p. 163):

paper milreis? = 100 milreis gold
4·5 = £1 (fixed par)
1 = d.240
36·5 = 1 paper milreis
Ans. 146·12

which shows a premium of 46⅛% on gold; but a portion of this percentage may be due to the balance of trade, and not to paper depreciation (*v.* p. 185).

Bombay T.T. 1s. 3 1/32d.

This means a telegraphic transfer on London costs in Bombay 1 rupee per 1s. 3 1/32d.

A telegraphic transfer is a means of effecting an international payment by telegraphic messages, ordering a debit to be made to one account and a credit to another. The remitter of such a transfer has, of course, a balance in his favour with his foreign agent.

This might also be expressed as (d.240 ÷ 15·9375) 15·05 rupees = £1.

As the fixed par is 15 rupees = £1

or 16d. = 1 rupee,

the quoted rate is unfavourable to India, who receives less pence for the rupee or has to give more rupees for the sovereign.

Rio de Janeiro 1s. 3d. 90 days' sight

This means that a 90 days' bill on London cost in Rio de Janeiro 1 milreis per 15d.

This may also be expressed as:

16 milreis = £1 (d.240 ÷ d.15).

As the par between England and Brazil is:

8·910 milreis = £1
or 26·934d. = 1 milreis,

the quoted rate is adverse to Rio, who has to give more milreis for the sovereign, or receive fewer pence for the milreis.

The premium on gold in paper would be, if we presume that none of the fluctuation from par is due to a change in the balance of trade, and if we neglect the difference which is due to the bill being a 90 days one,

paper milreis? = 100 gold
milreis 8·910 = £1 (fixed par)
1 = d.240
15 = 1 paper milreis

Ans. 179·57, i.e., a prem. of 79·57%

If we take into consideration the discount on the bill which is not payable for 110 days, the premium on gold will be found to be greater, as we shall now explain, in the case of Buenos Ayres.

Buenos Ayres $48\frac{7}{16}$d.

Gold premium $127{\cdot}27\frac{1}{2}$

This means that a 90 days' bill on London costs in Argentina 1 peso per $48\frac{7}{16}$d.

or 4·95 pesos = £1

As the par is 5·044 pesos = £1

or 47·578d. = 1 peso

the rate quoted appears to be favourable to Buenos Ayres, who has to give fewer pesos for the sovereign, or receive more pence for the peso. But the premium on gold is said to be $127{\cdot}27\frac{1}{2}$, which would give the following arbitrated par of exchange:

d.? = 1 paper dollar
227·275 = 100 gold dollars
5·044 = d.240

Ans. d.20·93 for the paper dollar

The rate quoted $48\frac{7}{16}$d. must, therefore, be for *gold* dollars.

As the bills are for 90 days, and are not paid till after 115 days, the *sight* rate of exchange will not be;

48 7/16d. for one gold dollar
or 20·93d. for one paper dollar

it will be these amounts, less interest, at the current London discount rate for 115 days,* which is, putting London discount at 3%, thus:

48·44 less ·45 (interest for 115 days at 3% on 48·44) which is 47·99
and 20·93 less ·20 (interest on 20·93), which is 20·73

Thus the rate is favourable to Buenos Ayres from the point of view of balance of trade, not to the extent of 48·44 minus 47·578 = ·862d., as would appear from the quotation, but to the extent of 47·99 minus 47·578 = ·412d. Owing to a depreciated currency, however, the rate is in reality adverse to Buenos Ayres, being only 20·73d.

Valparaiso 11 1/16d., 90 days, and Montevideo 51 7/8, 90 days

Bills drawn by Valparaiso are only payable after 134 days, owing to the length of voyage and three days of grace; those drawn by Montevideo are not payable for 114 days.

Hong-Kong and Shanghai have been explained on pp. 157, 158.

The length of time the bills have run, it will be noticed, varies.

Every country establishes a customary "usance," as it is called (*v.* p. 295) for its bills, that is the length of time for which the bills are drawn, e.g., the usance for bills drawn on London;

By Germany and Holland is 1 month
By Paris . . . . . is 30 days
By Spain and Portugal . is 2 months
By South America . . is 90 days' sight
By New York . . . . is 60 days' sight or 75 days' date
By China, Japan and India is 4 or 6 months' sight

*This will be clearly understood after reading Chapter XIII.

The following is a specimen of the London course of exchange *on* foreign countries.

LONDON COURSE OF EXCHANGE

October 18, 1907

Amsterdam and Rotterdam, short	12·1	to 12·1¼*
Amsterdam and Rotterdam, 3 months	12·4½	to 12·5
Antwerp and Brussels, 3 months	25·51¼	to 25·56¼
Hamburg, 3 months	20·75	to 20·79
Berlin and German Bank Places, 3 months	20·75	to 20·79
Paris cheques	25·12½	to 25·15
Paris, 3 months	25·37½	to 25·42½
Marseilles, 3 months	25·37½	to 25·42½
Switzerland, 3 months	25·47½	to 25·52½
Austria, 3 months	24·40	to 24·44
St Petersburg, 3 months	24⅝	to 24¾
Moscow, 3 months	24⅞	to 24¾
Italian Bank Places, 3 months	25·42½	to 25·47½
New York, 60 days	48 1/16	to 48 1/8
Madrid and Spanish Bank Places, 3 months	41¾	to 42
Lisbon and Oporto Bank Places, 3 months	49 13/16	to 50 1/16
Copenhagen Bank Places, 3 months	18·53	to 18·57
Christiana Bank Places, 3 months	18·54	to 18·58
Stockholm Bank Places, 3 months	18·54	to 18·58
Calcutta and Bombay, 30 days' sight	1s. 4½d.	

With the assistance of the explanatory tables in Appendix D, and the following remarks, the reading of the "London course" should become clear.

It will be seen that the rates of exchange on most of the European countries are quoted in the varying amount of foreign money which can be exchanged for £1. This is the same method of quotation as that which is adopted by the European countries on London which we have just examined. This plan has the advantage of showing at a glance the exact difference between the London rate on the foreign country and the foreign rate on London, because both quotations show the same foreign currency for the £. Similarly as the rates on non-European countries and on Portugal are

*The varying amount of Dutch money here exchangeable for the £1 is florins and stivers, whereas Holland quotes London in florins and cents (*v.* p. 183). As 20 stivers equal 100 cents, we can convert stivers into cents by dividing the number of stivers by 20, thus 12·1 (12 florins 1 stiver) = 12·05 (12 florins 5 cents).

quoted in varying English money, which is equivalent to the foreign moneys of account, we can compare them at a glance with the foreign non-European countries and Portugal on London, which we have just seen are likewise quoted in the varying English money. But the rates on three countries, viz., Spain, Russia and the U.S.A., are not quoted in the same currencies as are their rates on London; they are quoted in the variable English currency (pence) for a fixed amount of foreign money,* while the rates of those countries on London are quoted in the variable foreign currencies for a fixed amount of British money.

The next thing to notice is that the time which all the "long" bills have to run from the date when they are bought and sold is always three months, except Calcutta, which is 30 days' sight, and New York, which is 60 days'. The rates for bills having more than 10 days to run are called "long exchange," those for bills payable at "sight," and for cheques as well as drafts having up to 10 days to run (the latter being called "demand") are known as "short exchange."

"Long" and "Short" double quotations

The last thing to observe in the specimen course is that both the long exchange and the short exchange have each of them two quotations; the two long exchange quotations refer to bank bills and trade bills respectively, the quotation which shows the higher price to the purchaser of the bills is the bank bill quotation, the other is the trade bill quotation; hence where the long quotations are in foreign money the lower quotation is the price of bank bills, as the purchaser gets less foreign money for the fixed English money of account and thus pays the higher price; where the long quotations are in English money the higher quotation is the price of bank bills, as the purchaser pays more English

*The fixed amounts of foreign currency are the Spanish 5 pesetas, the Russian rouble and the American dollar.

money for the fixed foreign money of account and so pays the higher price.

The two short rate quotations refer to sight bills or cheques on the one hand, and to " demand " bills on the other. The sight bill, or cheque quotations, naturally show a higher price to the purchaser than the " demand " quotations, because the cheque is payable at once and the demand bill is not.

Hence, where the short quotations are in foreign money, and they are all in foreign money, the lower one is the price for sight drafts.

CHAPTER XIII

LET us examine the *relation between long and short rates, bank bills and trade bills.*

Suppose a London merchant has to pay a debt to Paris of 2,522 frs, which he wishes to defray by buying and remitting a bill on Paris. If the sight rate is at par (viz., 25·22 =£1) and the merchant buys a sight draft for 2,522 frs, it will cost him £100; on receipt of the draft the Paris creditor will cash the draft and credit the merchant for 2,522 frs, and the whole debt is paid.

To find the Long Bank Bill Rate

What would we expect the long bank bill rate to be? It would not be the same as the sight bill (viz., 25·22), for the following reasons:

If the merchant bought a *long bank* bill at three months at the rate of 25·22 he would get for his £100 a long bill of 2,522 frs, but on remitting it to his creditor, the latter would not credit him with 2,522 frs, because the bill is not payable for three months, and he has therefore to discount it at the current *French open market rate** of discount, which we will assume to be 3%.

3% for three months on 2,522 frs is 18·915 frs. This, deducted from 2,522 frs leaves 2503·085 frs. But the Paris creditor would not even credit the London merchant with 2503·085 frs, he would further deduct ½‰ for a bill stamp† (i.e., 1·261 frs) and another ½‰ for the liability incurred on the endorsement during the coming three months (i.e., 1·261 frs); 2503·085 less (1·261 plus 1·261)=2500·563 frs.

* For "open market" and "bank" rates of discount see Chapter XVII, pp. 216, 218, 219.

† The charges for bill stamps in foreign countries vary according to the foreign laws of the countries concerned.

Thus the London merchant would, if he bought a long bill, require to get more than 2,522 frs for the pound; otherwise he could buy a cheque at that rate and discharge his debt in full.

The rate he would demand for a long bank bill would be more than the sight rate to the extent of three months interest at 3% (foreign open market rate) plus ½‰ for bill stamp plus ½‰ allowance for risk, and this would be calculated as follows:

	25·22	sight rate
plus	·189	3% for three months
plus	·012	½‰ for bill stamp
plus	·012	½‰ for risk
	25·434	long bank bill rate

This may be worked by the chain rule method, as follows:

Given London on Paris, sight rate 25·22 frs=£1, and Paris market rate discount 3%, find the long bank bill rate.

frs payable in three months ?=£1 cash

1=25·22 cash (sight rate)

cash 100=100·75 payable in 3 months (3% int.)

100=100·10 charges (1‰)

Ans. 25·434

Tel Quel Rates

Suppose the merchant bought a bank bill which had only *two* months to run instead of three months, the three months' rate being 25·43 (as we have just ascertained), and the Paris open market rate of discount being 3%, what would the two months' rate be?

From the three months' rate we must *deduct* one month's interest @ 3%

	25·43	
less	·0636	1 month's interest @ 3%
	25·3664	the required rate.

This is called a " tel quel " rate, the price being a net one including the interest.

Proof

What would be the cost of a two months' bill for frs 2536·64 at the three months' rate of 25·43?

This can be done in two ways:

(1) Add one month's interest @ 3% to frs 2536·64 and divide by the long rate 25·43.

2536·64
plus 6·3416 3% for a month
2542·9816 ÷ 25·43 = £100

(2) A bill for frs 2536·64 @ 25·43 costs £99 15 0
Add one month's interest @ 3% 5 0
£100 0 0

Suppose the merchant bought a bank bill which had *four* months to run instead of three months, the three months' rate of exchange being 25·43 (as before), the Paris open market rate of discount being 3%, what would the four months' rate be?

In this case we must *add* one month's interest @ 3%*

25·43 + ·0636 = 25·4936 = the required " tel quel " rate.

Proof

What would be the cost of a bill for frs 2549·36, payable in four months, at the three months' rate of 25·43?

(1) Deduct one month's interest from frs 2549·36 and divide by the long rate 25·43.

2549·36
less 6·3734
2542·9866 ÷ 25·43 = £100

* In practice the rate would be the foreign *bank* rate which is higher than the market rate (*v.* p. 219), the reason being that bills over three months are usually discounted at a higher rate.

(2) A bill for 2549·36 frs at 25·43 costs £100 5 0
Deduct one month's interest at 3% 5 0
£100 0 0

How to find the Long Trade Bill Rate

Now what would we expect the *long trade* bill rate on Paris to be? It would not be the same as the long *bank* bill, because when discounted in France the discount charged will be higher than for a bank draft; trade bills are discounted at the bank rate of discount, bank bills at the open market rate, and the bank rate is generally higher than the market rate (*v.* Chapter XVII, pp. 216-219).

Hence if the London merchant bought a long trade bill he would require to get more francs than if he bought a long bank draft, i.e., more than 25·43 frs for the £1, otherwise he would buy a long bank bill.

Suppose the Paris bank rate to be 4%, the rate for long trade bills would be more than sight rate to the extent of three months' interest at 4% (bank rate) plus ½‰ bill stamp plus ½‰ for risk,* and this would be 25·22 plus ·252 (interest) plus ·012 (bill stamp) plus ·012 (risk) = 25·497; or by chain rule:

frs 3 months ?=£1 cash
1=25·22 cash
100=101, discount 4%
100=100·1 charges
Ans. 25·497 frs 3 months

Hence a sight rate of 25·22 is equivalent to a long bank rate of 25·434, or a long trade rate of 25·497; but if the French discount rates change, the long bank and trade rates must change too.

We can now see that the "specie points," of which we

* The charge for risk varies according to the circumstances of the case.

spoke on p. 180 are sight rates; and that long rates, though depending on sight rates, are also determined by discount rates, and may far exceed specie point.

In the examples we have just taken of long rates we supposed that the purchaser of the bill was receiving the variable foreign currency in exchange for his own country's fixed money of account; in such a case he has to receive more than the sight, and the long rate, therefore, is greater than the sight rate, to the extent of the discount in the foreign country, plus stamp and risk charges.

If the purchaser of the bill gives the variable amount of his native currency for the fixed foreign money of account, the long rates equal the sight rate *minus* discount in the foreign country and *minus* stamp and risk charges, e.g.:

Suppose the London merchant has to pay 1,000 roubles to Russia, and the sight rate is quoted 25d. per rouble, a sight bill for 1,000 roubles would cost him d.25,000, and the debt would be extinguished.

What would he expect the long *trade* rate to be? It would not be the same as the sight rate for the following reasons:

If the merchant bought a long trade bill at 25d. he would get for his d.25,000 a long bill of 1,000 roubles, but after his creditor had discounted it at, say, 3% *bank* rate in Russia and deducted stamp and risk charges, the merchant would be credited with less than 1,000 roubles.

Hence for his 25d. he would expect to get more than 1 rouble payable in three months, or in other words, he would give less than 25d. for one rouble payable in three months, e.g.:

	d25·00		
		·1875	(discount 3% for 3 months Russian bank rate)
less	·2125	·025	1‰ charges
	24·7875		

or by chain rule

pence cash? = 1 rouble payable in 3 months
100 = 99·25 cash roubles (3 months' discount at 3%)
1 = 25d.
100 = 99·9 (charges 1‰)
Ans. d.24·7876

Is Long or Short Rate the Cheaper mode of Remitting?

It follows that if the actually quoted long rate and short rate on any country do not bear this exact relation to each other, i.e., if they differ by more than the discount and charges, one of the two rates will be a cheaper mode of remitting money than the other one, e.g.,

Long London on Russia is quoted 25d.
Short London on Russia is quoted 25·30d.*
Discount in Russia 4½%.

What is the short rate that would be equivalent to the long 25d. (neglecting charges)? Such an equivalent short rate is called the *cash value* of the long rate.
It is long 25d. plus ·28 (discount in Russia @ 4½%) = 25·28d., or by chain rule:

pence cash? = 1 rouble cash
cash 100 = 101·12 (3 months @ 4½%)
1 = 25d.
Ans. 25·28d.

and this is *cheaper* than the quoted short rate 25·30; it would, therefore, be cheaper to buy "long Russia," for remitting a bill to Russia.

Again:

Long London on Paris is quoted 25·40
Cheque London on Paris is quoted 25·28.
Discount in Paris 3%

*Short London on Russia is not quoted in the papers, but we will assume it to be for illustration's sake.

What is the short rate that would be equivalent to the long 25·40? i.e., what is the cash value of 25·40?

It is 25·40 long rate
minus ·19 (3 months' discount in Paris @ 3%)
25·21 francs

or by chain rule

francs cash? = £1 cash
100 = 99·25 (3 months @ 3%)
1 = 25·40

Ans. 25·21 francs

And this is *dearer* than the quoted cheque rate frs 25·28; it would, therefore, be cheaper to buy a "cheque Paris."

Thus, in order to compare a long rate with a short, we must reduce the long rate to its equivalent short rate form, i.e., find the cash value, so as to make a comparison on the basis of short rates, and to do this we must know the foreign discount rates.

List of Foreign Discount Rates

The foreign "bank" and "open market" rates of discount are quoted in the newspaper (*vide* p. 219) from time to time.

The following is a specimen of the discount quotations current in the chief Continental cities.

	Bank Rate %	Open Market %
Paris	3	$2\frac{1}{4}$
Berlin	$4\frac{1}{2}$	$3\frac{1}{2}$
Hamburg	$4\frac{1}{2}$	$3\frac{1}{2}$
Frankfurt	$4\frac{1}{2}$	$3\frac{9}{16}$
Amsterdam	$4\frac{1}{2}$	$4\frac{1}{4}$
Brussels	$3\frac{1}{2}$	$3\frac{1}{4}$
Vienna	4	$3\frac{7}{8}$
Rome	5	4

	Bank Rate %	Open Market %
Turin	5	4
Genoa	5	4
Geneva	4½	3 15/16
St Petersburg	6½	*
Madrid	4½	4
Lisbon	5½	5
Stockholm	5	4½
Christiana	5	5
Copenhagen	5	4½

*Nominal.

CHAPTER XIV

Comparison of two Sight Rates

LET us now compare the sight rate of one country on another with the sight rate of the latter on the former.

As there is no question here of different rates of discount, we should expect these two sight rates to be the same. If they should ever exhibit much difference, they would very soon be levelled again by the action of *arbitrage operators*,* who, if the difference is sufficiently great, would immediately make a profit therefrom, e.g.:

Suppose the sight quotations were:

London on Paris 25·18
Paris on London 25·29

A banker in London could, in such a case, wire his Paris agent to draw on him for, say, £1,000, and sell the draft (@ 25·29) for 25,290 francs. At the same time the banker in London could draw on his Paris agent for 25,290 francs and sell it for 25,290 ÷ 25·18 = £1004·36. The Paris agent would, with the proceeds of 25,290 francs, pay the bill for that amount which was drawn by the banker in London, and the latter would, out of the proceeds of £1004·36, pay the £1,000 bill drawn by the Paris agent. The Paris agent's account would be closed without a balance, and the account of the banker in London would show a profit of £1,004·36 less £1,000 = £4·36.

*Arbitrage is a term applied to the sale and purchase of bills (as well as bullion and coins, stocks and shares) in different markets. The difference in price that at any time exists between different countries represents a profit to the arbitrage broker (*v.* p. 279). It also applies, strictly speaking, to dealings in wholesale commodities and freights, but its usage is generally confined to those articles only which are dealt in by bankers and financiers (*vide* p. 172).

Or the operation might take another form:

The banker in London could draw on Paris for 25,180 frs and sell it (@ 25·18) for £1,000, with which he would pay a draft for £1,000 drawn by his Paris correspondent and sold in Paris (@25·29) for 25,290 frs, thus making a profit of 110 frs.

In both these cases the sale of London on Paris would tend to raise the London quotation, and the sale of Paris on London would tend to lower the Paris quotation.

Cheaper of two Sight Rates for Remittance and Return

Moreover, such a divergence between the sight rates of London and Paris as this would cause one mode of remittance to be cheaper than the other, for example:

For *remitting* money from London to Paris the cheaper plan would be to be drawn on by Paris, as that would secure the most French money.

For *returning* money from Paris to London the cheaper plan would be to draw on Paris, as that would secure the most English money. Remittances to London from abroad are called *returns*.

Comparison of two Long Rates

Now let us compare the long rate of one country on another with the long rate of the latter on the former.

When the rates of discount in the two countries are the same, we should expect the long rates to be the same. But when the rates of discount are different the long rates will of course be different also, and we have to find, by taking the rate of discount into our calculation, what is the long rate of the one that *corresponds* to the long rate of the other, e.g.:

Given London on Berlin—long,	20·70 marks
and Berlin on London—long,	20·28 marks
Discount in London	3½%
Discount in Berlin	3%

Find the London on Berlin (long) which *corresponds to* the quoted Berlin on London (long).

This is done by first finding the cash value of 20·28.

	20·28	
plus	·1774	(discount 3½ in London 3 months)
plus	·0101	½‰ bill stamp
	20·4675	= required cash value of Berlin on London

20·4675 is also the *corresponding* cash value London on Berlin, hence:

	20·4675	
plus	·1535	discount 3% in Berlin 3 months
plus	·0102	½‰ bill stamp
	20·6312	which is the required "long Berlin" that corresponds to the "long London" 20·28.

The difference between 20·6312 and the actual "long Berlin" 20·70 is over ¼%, and affords a profit to the arbitrage operator, e.g.:

Profit on Arbitrage due to Difference between two Long Rates

A banker can invest £1,000 in the purchase of long bills on Berlin for 20,700 marks, and remit them to his correspondent, who, on receipt thereof, will discount them for M.20,534·40—thus:

	20,700	
		155·25 (3 months' discount @ 3%)
less	165·60	10·35 (Bill stamp)
	20,534·40	

The Berlin correspondent will purchase a three months' bill on London and remit it to London, where it will be discounted for £1,000.

The amount of the latter bill will be £1,009 6s. 8d., from which will be deducted three months' discount @ 3½% = £8 16s. 7d. and 10s. 1d. bill stamp.

The cost of this bill at 20·28 is M.20,469·22, which being deducted from M.20,534·40, leaves a profit of M.65·18.

Cheaper of two long Rates for Remittance and Return

It will also be observed that the difference between the actual long Berlin 20·70 and the *corresponding* long Berlin 20·6312 causes one mode of remittance to be cheaper than the other, e.g.:

For *Remittances* from London to Berlin the cheaper plan would be to buy a long Berlin and remit it, because more German money would be secured (20·70) than by being drawn on from Berlin; the latter course would only secure M.20·6312.

For *Returns* from Berlin to London the cheaper plan would be to get our correspondent in Berlin to buy "long London" and remit to us, as that would secure more English money or less foreign money than would be obtained by drawing on Berlin.

The following example, worked by chain rule, should make this point clear:

Given London on Russia, long, d.25·15=1 rouble
Given Russia on London, long, r. 93·80=£10
Discount in London, 3½%
Discount in Russia, 4%

Find the corresponding Russia on London (long).

roubles cash?=£10 payable in 3 months
£100=£99·125 cash (3½% discount)
£1=d.240 cash
25·15=1 rouble payable in 3 months
100=99 roubles cash (4% discount)
93·646

In this case, for remittances from London to Russia, the cheaper mode is to be drawn on, because it secures more Russian money (93·80) than buying and remitting (93·646).

For returns from Russia to London the cheaper plan would be to draw on Russia because it costs less Russian money (93·646) than getting our correspondent to buy long London and remit to us (93·80), or in other words, to draw on Russia secures the most English money.

CHAPTER XV

Uses of " Indirect Exchange "

UP to this point we have been illustrating bill operations between two countries which are conducted without the intervention of a third country; these exchanges are called *direct.* We have now to illustrate the *indirect* exchanges, or operations between two countries by means of one or more other countries. In addition to its employment by bankers as a means of providing cover against drafts (*v.* p. 176), the " indirect " means of exchange is used in " liquidating debts between two places which are not in permanent relation with each other, through the medium of a third place which has a bill connexion with both." A New York importer of goods from Australia, for example, instead of getting the exporter to draw on him, opens a " reimbursement " credit or " documentary credit " with a banker in London in favour of the shipper, for sterling bills on London are extensively used as international debt settlers, and London is the " International Clearing-house."

" In America and the East," says Mr Clare (*A.B.C. of the Foreign Exchanges*), " bills on London will at all times command a better price than bills drawn on Continental banks, because there is more demand for them; so that if Germany orders cotton, for instance, it pays better to let the sender draw on London for German account than to have him draw direct. The effect of such transactions is to incline the Eastern and American Exchanges against us and the German for us." The Indirect Exchanges are also used between two countries whose direct communication is for some reason or other interrupted; and again, when very large remittances are being made, as, for example, when one

country raises a loan (*v.* p. 245) on behalf of another. When, in such cases, the borrowing country draws direct on the lending country the large supply of bills thereby created on the latter turns the rate of exchange against the lending country and in favour of the borrowing country, and some other channel of remittance has to be resorted to; in this way the rates are steadied. Poor countries not infrequently borrow from others in order to render the rates of exchange favourable to themselves. An instance of how the use of the indirect method of exchange prevents any unusual disturbance of the rates which would arise if the direct exchange alone were used for making exceptionally large remittances, is afforded by a study of the payment of the French indemnity of 5,000,000,000 of francs to Germany after the Franco-Prussian War in 1871 and 1872 (*v.* p. 177).

When much bill business is done in foreign markets the rates quoted on any particular country by each of the other countries are liable to differ sufficiently to render the choice of this or that indirect route more advantageous than the direct one for remittance or return; and so it is necessary to ascertain the parities of the different prices that are quoted in order to establish a comparison between them. If, for example, it is desired to transfer money between London and Paris, it is not sufficient to merely find the cheapest mode of " direct " exchange. Since Paris quotes rates on many other countries, and each one of the latter quotes its own rate on London, we have but to find the parities of the Paris quotations, and compare them with the " direct " exchange. Let us compare one or two " indirect " exchanges between London and Paris with the " direct." Take the " direct " first:

London on Paris, cheques	25·22
London on Paris, 3 months	25·40
Paris on London, cheques	25·19
London open market rate	3%
Paris open market rate	2½%

The cash value of " long Paris " is

	25·40	
less	·16	(2½% for 3 months)
	25·24	

Hence of the three modes of transferring money between London and Paris, viz.:

(1) by way of a Paris cheque	25·22
(2) by way of a " long Paris "	25·24
(3) by way of a London cheque	25·19

the cheapest remittance from London to Paris would be the purchase in London of a " long Paris," and the cheapest returns from Paris to London the purchase in Paris of a cheque London.

Now take the Indirect Exchange; we shall only take three out of the many possible examples that exist.

In order to understand the Paris and Berlin quotations of rates on other countries a few explanatory remarks relating thereto are necessary.

The Paris Mode of quoting Foreign Rates

Paris quotes all its rates on foreign countries in francs. Its quotations are divided into groups. Group A consists of rates on Germany, Holland, Austria, Russia, Spain and Portugal. The rates on these countries are for three months, and, to get the short rate, a fixed rate of 4% has always to be added, (*v.* 209) so that if the foreign rate of interest exceeds 4% the short rate, which is quoted, is a little greater than the long rate, and if the foreign rate of interest is less than 4% the quoted short rate is a little less than the long. The amounts of foreign currencies, which are purchasable with the quoted francs, are always 100 units (e.g., M. 100, 100 florins, and so on) except in the case of Spain, which is 500 pesetas.

Group B comprises rates on London, Belgium, Switzerland, Italy, Stockholm and New York. The rates on these countries are quoted at the sight-exchange rates, and since the

buyer will pay less for long bills, the long rates are found by deducting the foreign bank rate of discount. The amounts of foreign currencies of this second group of countries which are purchasable by the quoted number of francs are the single monetary units in the case of London and New York, i.e., the pound and dollar; in the other cases it is 100 units, and the quotations of Belgium, Italy and Switzerland are given simply in the form of a premium or discount as those countries have the same currency system as France.

Berlin Mode of quoting Foreign Rates

Berlin quotes the foreign rates in marks for 100 monetary units of the foreign currencies, with the exception of London and Lisbon, which are quoted in marks for the pound and the milreis.

The usance is eight days' or two months' date, except in the following three cases, namely, London, eight days' and three months' date: Lisbon, fourteen days' and three months' date: and St Petersburg, eight days' and three months' date.

Now, suppose Paris quotes Berlin short as 122·50 + 4%.

This equals 122·50
plus 1·22 (3 months @ 4%)
123·72 francs for 100 marks.

and suppose the Berlin rate on London sight is 20·46. What is the parity price of the Paris on Berlin?

francs?=£1
1=20·46 marks
100=123·72 francs
25·313 francs

This means that a remittance from London to Paris could be effected as follows: if Paris were to draw on Berlin for M.20·46 and sell the draft, the yield would be 25·313 francs, while if Berlin were to draw on London for £1 and sell the draft the yield would be M.20·46, with which Berlin would pay the bill drawn on her by Paris.

Ultimately, when London pays the £1 bill drawn on her by Berlin, the net result will be that London has remitted to Paris by this indirect route more francs (25·313) for £1 than could have been remitted by the cheapest direct plan, viz., "long Paris" 25·24 (*v.* p. 208). Hence this would be cheaper for remittances from London to Paris, but on the other hand dearer for "returns" from Paris to London, than the direct method.

Take another example:

Suppose Paris quotes cheque on New York 5·19¼ and the New York demand on London is 4·84¼. What is the parity price of Paris on New York?

francs?=£1
1=$4·8425
1=5·1925 francs
francs 25·145

This means that a return from Paris to London could be effected as follows:

If Paris bought a cheque on New York for $4·84¼ and remitted it to New York, it would cost 25·145 francs; while if New York bought a demand bill on London for £1, it would cost $4·84¼, which she would get from the cheque for that amount which was remitted by Paris.

When ultimately London has received the bill from New York, the net result is that France has remitted £1 to London by this indirect route at a cost of less French money (25·145) than she could have remitted by the cheapest "direct" (viz., 25·19). Hence, the indirect would be cheaper for returns, but dearer for remittances than the direct.

We have only made two comparisons for the sake of illustration; but, of course, it would be necessary in practice, when contemplating a transfer of money between London and Paris, to calculate also the parities of the Paris quotations on the several other foreign countries, as some other route might be found to be cheaper than those we have just examined.

But we have still another step to go. In order to find the cheapest indirect transfer between London and Paris, it is not sufficient to merely calculate the parities of the Paris quotations on other countries with the aid of the rates of those countries on London, as we have just been doing; we must also ascertain the parities of the quotations of the other countries on Paris, with the aid of the rates of those countries on London, e.g.:

Suppose Berlin quotes Paris eight days 81·10 marks, this is equivalent (Paris discount being 3%) to 81·15 marks for 100 francs cash.

The Berlin on London sight is, as we have seen, M.20·46.

Find the parity of Berlin on Paris

francs?=£1
1=20·46 marks
81·15=100 francs

25·212

This means that a remittance from London to Paris could be effected as follows:

Berlin can draw on London for £1, sell the draft for M.20·46, and purchase therewith and remit to Paris a draft for 25·212 francs.

A " return " could be effected by Berlin drawing on Paris for 25·212 francs, and selling it for M.20·46 and purchasing therewith and remitting to London a draft for £1.

On comparing this parity price with the direct rates and with the other indirect rates already examined, we see that this route offers no advantage for either remittance or return.

Arbitrage Profit on Indirect Exchange

The following example illustrates the way in which the arbitrageur derives a profit out of the "Indirect" Exchange rates:

Suppose London quotes Italy 3 months	lire 25·55
Paris on Italy, cheque*, being	½ premium
Paris on London cheque, being	25·12
Discount in Rome	4%

*Called " versement "—money order.

First find the parity of Paris on Italy.

Lire payable in 3 months ?=£1

1=25·12 francs

(½ premium) 100·5=100 lire cash (Paris on Italy)

100=101 lire in 3 months (4%)

25·24

This means that London can buy L.25·55 (3 months) for £1, and sell them at the rate of L.25·24 (3 months) for £1, making a profit of L.25·55 − 25·24 = ·31, or 1·21% of 25·55.

The expenses in the form of brokerage, commissions and bill stamps would, however reduce this profit.

The operation may be exemplified as follows:

Suppose we lay out £1,000 in the purchase of "long" Italy L.25,550.

This bill is sent to Italy and there discounted, yielding L.25,550,

	255·50	3 months disc. @ 4%
	25·55	1‰ bill stamp
	19·17	¾‰ commission
minus 300·22	300·22	
L.25,249·78		

The amount thus obtained, viz., L.25,249·78, would be employed in Italy in paying a cheque for that amount drawn by Paris and sold (at the rate of 100·5) for 25,376·02 francs, from which, however, must be deducted brokerage and commission, thus:

Francs	25,376·02		
		31·72	(⅛% brokerage)
		25.37	(1‰ commission)
less	57·09	57·09	
francs	25,318·93		

Finally, the latter sum (25,318·93 francs) is employed in the purchase of cheque London (at the rate of 25·12) for £1,007·91, showing a net profit of £7 18s. 4d., or ·79%.

CHAPTER XVI

Fluctuations of the Exchange arising from Travel and Blank Credits

A FURTHER very strong influence on the foreign exchanges is exercised by the transmission of money from one country to another by travellers who carry their money in the form of letters of credit (*v.* Appendix A). Take, e.g., the effect produced on the exchanges by the annual visit of Americans to Europe. Before starting on their journey they purchase letters of credit in America. These letters are cashed for them by the banks of the various European cities which they visit, and the European banks reimburse themselves by drawing bills on America. The increased supply of bills on America thus drawn in Europe tends to render the European exchanges on the U.S.A. unfavourable to that country. The following is a newspaper cutting of July 2, 1906:

" $80,000,000 spent out of America.

"(Laffan's Agency),

" New York. July 2 (Monday).

" Mr Barton Hepburn, formerly Controller of the U.S. Treasury, declares that American tourists and Americans who keep up establishments in England and France are spending at least $80,000,000 a year in Europe, thereby offsetting the trade balance and causing the present unfavourable condition in the money market."

Blank Credits

Mr Clare, (*A.B.C. of the Foreign Exchanges*), explains the influence on the Foreign Exchanges exercised by blank credits, under three distinct heads, viz., those credits which are given to the merchants, bankers and exporters, respectively:

"As regards the former," he says, "London accepting bankers are in the habit of granting accommodation (*v.* p. 217, and Part I, p. 83, and Appendix A, p. 295) to merchants abroad, who are of good standing and reputation, and who are able to make advantageous use of additional capital in the conduct of their business. Such transactions, however, only act upon the exchange when the credit is first opened, or when it is withdrawn, as on each occasion of ordinary renewal the merchant buys a remittance in cover, and simultaneously issues a redraft, so that the one operation cancels the effect of the other.

"Owing to the wealth and high position of most of the accepting houses, bills of this class rank with the best, though, strictly speaking, they are nothing but accommodation paper.

"Bills drawn in blank by bankers admit of a different explanation. These are created in connexion with exchange operations. In all agricultural countries, the great bulk of the export business is concentrated on the harvest season. At this time of the year, therefore, bills on London are plentiful and cheap, while during the remainder of the twelvemonth they are more or less scarce and dear. Under these circumstances the local banks can earn a safe and legitimate profit by 'bearing' (*v.* p. 264) London paper in the dear season and by reversing the operation in the cheap season; that is to say, when the price is high they draw heavily on London and run up a big debit-balance (*v.* p. 176) over here, and when the price is low, they buy enough to pay off their debt and leave a balance on the opposite side of the account.

"Exporters' credits are of the same nature. Instead of drawing against his shipment when the market is full of paper, the exporter arranges, if possible, to draw a month or two in advance, in order to take advantage of the high rates ruling before the harvest (*v.* p. 311).

"As a matter of course, the item of 'Credits' also appears under the head of demand, because the money drawn from us in this shape has nearly all to be paid back."

CHAPTER XVII

Influences of the Rate of Discount on the Foreign Exchanges

IN order to explain the influences on the foreign exchanges exercised by the value of money which is indicated by the rate of discount we must give a brief description of the money market in which the value of money is determined.

The Money Market

" The term market," says Prof. F. A. Walker, " has reference, first to a species of commodity; secondly to a group of exchangers. In this view there is no market indistinguishably for all or for several commodities, as for tea, iron, cotton and wheat; but there is a market for each commodity, by turns, as a market for tea, in which tea is bought and sold; a market for iron, in which iron is bought and sold. Thus there are as many markets as there are separate commodities.

" Secondly, a market embraces all those who contribute to the supply of, or the demand for, a given commodity in any place. Hence, all those who are ready to buy of or sell to each other, belong to the same market, no matter where they live."

The London money market consists of all the large dealers in money, bankers, bill brokers, etc., who, by lending and borrowing money, settle the rates of interest and discount on borrowable capital in London.

Prof. F. A. Walker goes on to explain that " all those persons who contribute to the general demand for any commodity, as felt in any place, or to the supply of that commodity there available for purchase, and who hence serve as buyers or as sellers to affect the price of that commodity in that place, belong to the same market."

Hence any foreign dealer in money, who, owing to the rate of interest in the London market being at any time higher than in his own country, lends his money in London, so as to obtain the best profit he can, belongs, for the time being and to the extent of his loans, to the London money market (*v.* p. 231). The article dealt in on the money market is loanable capital (*v.* pp. 67, 69) and the loans are granted for short periods.

The value of loanable capital from day to day, as expressed by the rates of interest and discount, resulting from the transactions effected by the dealers in the money market are called the *open market rates* and are published daily in the newspapers.

The *open market deposit rates* are the rates at which the banks and discount houses borrow money. The *open market discount rates* are those at which they lend money on bills by discounting them, and the *open market loan rates* are those at which they lend money on security, i.e., make advances.

The banks form the principal factor in the money market.

The several functions of Banking are:

(1) Financing the Government (*v.* origin of the Bank of England, p. 93, Part 1).

(2) The formation of a standard of comparison for debased coins (e.g., Bank of Amsterdam, *v.* pp. 87, 88).

(3) Economizing use of coin in cancelling debts (*v.* Compensation, Novation and Clearing system, *v.* pp. 71-83).

(4) Remitting money or conducting exchanges (*v.* Ch. X-XV).

(5) Issue of Bank-notes* (*v.* Index).

(6) Receipt of deposits (*v.* pp. 67-69).

(7) Discounting bills (*v.* p. 68 and Appendix B).

(8) Making temporary advances (*v.* p. 217).

The *Liabilities* of the Banks, in the form of Deposits, represent the savings of the people, the *loanable capital* of the country, and their assets show the manner in which all that loanable capital is employed.

* Banks which issue notes are known as "banks of issue."

The *Liabilities* of the banks consist of "Deposits," "Current Account Balances" and "Acceptances and Foreign Bills endorsed "*; and it is on the first of these items that the banks pay the "deposit" rates above mentioned.

These three items, together with "Capital" and "Reserve Funds," form the banks' resources.

The *Assets* of the banks, which show how those resources are employed, may be classed as follows:

(1) "Cash in till" and "Bank Balances"; the latter being the balances which the banks keep at the Bank of England. (*v.* p. 116); these are called the "Cash Reserves."†

(2) Investments in first class securities, such as Consols (*v.* p. 250).

(3) Loans and Advances of three kinds:

(i) On the deposit of first class bills of exchange, or else on the deposit of securities to bearer (*v.* pp. 245, 247) which are called "floaters," such as Consol Certificates, Exchequer Bonds and India Railway Debentures. These loans may be:

(a) Seven-day loans, or,

(b) "Over-night" loans, i.e. from one afternoon until the next morning; called also "day to day" money or "call money," and are largely lent to bill-brokers (*v.* p. 225) who employ them in the discount of bills.

(ii) Loans and advances to the trading community on securities of various descriptions.

(iii) Loans to the London Stock Exchange (*v.* p. 263).

It is on the loans and advances that the banks charge the loan rates above mentioned; the rates for seven day loans are naturally higher than on day to day money.

(4) Discount of Bank Bills and Trade Bills of from two to six months. Bank bills include "best bills" or "fine bills" or "best bank bills," by which terms it is implied that the

**Vide.* The "Acceptances and Foreign Bills Endorsed" are in reality cross entries, since they appear also among the assets under the head of "Discounts, loans and advances" (*v.* p. 214).

†These so-called "Reserves" are quite distinct from the "Reserve Funds" above-mentioned, which figure on the Liability side of the Accounts and which represent the excess of Assets over Liabilities.

bills are endorsed or accepted by well-reputed banks or financial houses, and since there is no risk of such bills not being met at maturity, the rate charged for discounting them is lower than that charged on Trade Bills (*v.* p. 196).

The loan and discount rates are higher than the deposit rates, because the banks have to make a profit on the difference between the deposit rates at which they borrow, and the loan and discount rates at which they lend.

The discounts, loans and advances thus indicate the extent to which the banks are helping the trading community; the other assets represent merely safeguard funds. The English banks maintain a low proportion of discounts, loans and advances to deposits. American banks generally employ the bulk of their deposits in loans and discounts and sometimes even more.

How Market Rates are Determined

The open market rates are determined by the supply of and demand for the available loanable capital already mentioned, which figures in the banks' balance-sheets as " deposits " and amounts to between 1,000 and 1,100 millions of pounds sterling.*

The *Bank Rate* or the *Official Minimum*, as it is often called, is the published Bank of England minimum rate of discount.

For many years prior to 1839 the Bank maintained a fixed rate, which was never higher than 5% or lower than 4%; consequently Bank rate was no guide to the true value of money; whenever the market rate was below Bank rate the Bank of England's discount business fell off, and whenever the open market rate was above the Bank rate the Bank's discount business increased.

In 1844, the year of the Bank Act, the Bank commenced to vary its rate largely in conformity with that of the open market and thereby increased its discount business very considerably. In 1878 the Bank commenced to discount for its regular customers at a lower rate than the advertised

* *Vide* p. 115.

official ore with the result that the open market ceased to regard the official minimum as quite so dependable a guide to the value of money as formerly, although that rate still continues to be a valuable indication of the state of the monetary world.

How Bank Rate is Regulated

Bank rate is regulated mainly according to the proportion which the Bank's reserve bears to its liabilities, and by the state of the foreign exchanges, the reserve being subjected to reduction by both domestic and foreign requirements; hence, if the reserve is low or the foreign exchanges adverse, Bank rate may have to be raised above, and so cease to be an index to the true value of loanable capital which is indicated by the market rate of discount.

The open market deposit rates are usually about 1½% below the Bank rate* unless the latter happens to fall very low, in which case the open market rate may be only 1% below it, or unless the Bank rate is exceptionally high when the open market rate may be more than 1½% lower.

The following is a specimen of the list of money market rates taken from *The Economist:*

	Last Week	Sat.	Mon.	Tues.	Wed.	Thurs.	Friday
	%	%	%	%	%	%	%
Bank rate	3½	3½	3½	3½	3½	3½	3½
Market rates of discount:							
60 days' bankers' drafts	3¼ ⅜	3¼	3¼	3¼ 1⅛	3 5/16 ⅜	3 5/16 ⅜	3⅜ 1⅛
3 months' bankers' drafts	3⅜	3 5/16 ⅜	3⅜	3⅜	3⅜	3 7/16	3 7/16 ½
4 months' bankers' drafts	3 7/16 ½	3 7/16	3 7/16	3½	3 9/16	3 9/16	3⅝ ¾
6 months' bankers' drafts	3⅝	3 9/16 ⅝	3 9/16 ⅝	3⅝	3⅝	3⅝	3⅝ ¾
Loan:—Day to day	1½ 2¾	1½ 2½	1½ 2½	2¼ ½	2¼ ½	2 3¼	2½ 3
Short	2½	2½ ¾	2½ ¾	2¾ 3	2¾ 3	2¾ 3	3
Fortnight† (at last settlement)	3½	3½	3½	4	4	4	4
Deposit allowances:							
Banks	2	2	2	2	2	2	2
Discount houses at call	2	2	2	2	2	2	2
At notice	2¼	2¼	2¼	2¼	2¼	2¼	2¼

* Before 1878 Open Market Deposit rates were generally 1% below Bank rate. †*Vide* p. 260.

As the several influences which affect the rates of both the Bank and the money market may to a great extent be traced in the weekly alterations of the return of the Bank of England's assets and liabilities, which is the barometer of the London money market, we shall consider them in conjunction with that return.

Analysis of Bank Return

The following return was published on August 15, 1906:

Issue Department

Notes issued .	£54,095,865	Government debt	£11,015,100
		Other securities .	7,434,900
		Gold coin and bullion . .	35,645,865
	£54,095,865		£54,095,865

Banking Department

Proprietor's capital . .	£14,553,000	Government securities. .	£15,973,452
Rest. . . .	3,572,754	Other securities	27,955,375
Public deposits.	9,515,111	Notes . . .	24,494,605
Other deposits .	42,106,005	Gold and silver coin . . .	1,387,332
Seven day and other bills .	62,895		
	£69,809,765		£69,809,765

Comparing this statement with the first return published in accordance with the Bank Act of 1844 (*v.*, pp. 100-103) we observe the following differences:

The amount of *Other Securities* in the Issue Department on which the Bank is allowed to base an issue of notes has increased from £2,984,900 to £7,434,900. The increase consists of two-thirds of the note issues of those banks which have ceased issuing notes since the passing of the Act. As we have seen,* the Act provided that the Bank might increase

* Part 1, p. 101.

its issues to that extent, fully expecting that in a few years the note issues of all country banks would lapse and the Bank would then be the sole bank of issue (*v.* p. 216) in the kingdom. This expectation, however, has not been realized, though the total amount of private issues has considerably decreased. The issue of notes based on the total of the Government debt and the other securities in the issue department, viz., £18,450,000, is called the " fiduciary issue."*

Comparing the *Active Circulation* (viz., £29,601,260, which is the difference between notes issued, £54,095,865, and notes in Banking Department, £24,494,605) with that exhibited in the first published statement above referred to, we observe that it has increased by £9,424,990, the figure for September 7, 1844, being £20,176,270.

Such a comparison as this, however, is but a very rough one, since the active circulation varies largely from month to month, that during July to October being usually greater than at other seasons of the year.

Much of this increase in the active circulation is probably due to the replacement of lapsed country issues by Bank of England notes, for the total note circulation of the whole country is now only about two millions greater than it was in 1844, being about £31,000,000. The active circulation is always greater than the amount of notes held in the reserve (*v.* p. 224).

The insignificance of this increase as compared to the increase in the activity of our trade during the last sixty years is largely due to the substitution of cheques for notes in the course of business.

The other item of the Issue Department is *Gold Coin and Bullion.* This item must, as we have seen, always be the balance held against notes issued in excess of £18,450,000, and, therefore, fluctuates automatically with that excess.

The increase in this item over the figures shown in 1844

* This term must not be confounded with the fiduciary money of which we treated in Part I. This " fiduciary issue " is credit, whereas the " fiduciary money " already referred to is distinct from credit (*v.* p. 20).

(which were 14½ millions) is very considerable. The total bullion in the Bank (which includes the £1,387,332 in the Banking Department) represents 44% of the total liabilities (i.e., of notes in circulation plus public deposits, plus other deposits, plus seven day and other bills), while the total bullion in 1844 was 42% of the liabilities of that year. The amount of silver held has not been quoted since 1853, except for a short period in 1860 and 1861.

Banking Department

The first item, viz., *Capital* on which the stockholders draw dividends, has not changed since 1833, having grown to its present dimensions (which are greater than that of any other bank in the world), from £1,200,000, at which it stood when the bank was founded in 1694 (*v.* p. 93).

Rest is the accumulated profits of the bank which have not been distributed among the shareholders (*v.* p. 251). Being the excess of assets over capital and liabilities, it is a reserve fund which, together with the capital, forms the Bank's working capital.

Public Deposits.—These consist of the balances to the credit of the Exchequer, the Commissioners of the National Debt, Savings Bank, Paymaster General, etc., for the British Government keeps its accounts and deposits its money at the Bank of England (*v.* Appendix H, Specimen of Government Account). The revenue collected by the Government is paid into the credit of this account, and the payments made by the Government as dividends on the public debt or for the upkeep of the Army, Navy, and Civil Services are placed to its debit.

This item fluctuates greatly from month to month, so that in order to establish a fair comparison we should have to compare the average figures of the current year with the average for 1844, which would show a considerable increase during the last sixty years, although not nearly so great an increase as that in the next item, viz.:

Other Deposits.—This includes the deposits of the Bank's private customers, and the balances of most of the London banks, as well as of many country banks. The bankers' balances form a very large part of the account, and consist of the sums necessary for clearing purposes and often of additional amounts which form the reserves of the banks (*v.* p. 217).

From 1844 to 1877 a weekly statement was published which showed the amount of the bankers' balances, but this is now no longer continued, and we are left to conjecture what portion of the other deposits belongs to the banks.

The increase in the bankers' balances since 1844 is larger than that of any other item in the return. In all times of monetary pressure it is observed that the bankers' balances at the Bank increase, for the banks at such times place with the Bank of England not only such cash as they are able to call in from borrowers, but also such sums as they can themselves borrow from the central institution. Indeed, on such occasions the bankers' balances alone have sometimes very largely exceeded the Bank's reserve.

It is much to be regretted that the details of the bankers' balances are no longer published, for such information would exhibit the true lower proportion of the Bank's reserve to its liabilities to the public.

This item is frequently called the "market's supply of cash," it is liable to frequent and violent fluctuations, and is five times as large as it was in 1844.

Seven day and other Bills.—Seven day bills are known as bank post bills, which are drafts on the Bank, payable seven or sixty days after sight.

These drafts, for any sum from £10 to £1,000, can be had by payment to the Bank or any of its branches of the amount of the bill required. The Bank makes no charge for issuing and paying them, the interest on the use of the money between the dates of issue and payment being considered sufficient remuneration. This item has dwindled

from over £1,000,000 in 1844 to £62,000 in the return we are examining.

The Assets consist of the reserve and the several forms of securities in which the Bank invests its funds of credit.

Government Securities.—This includes the securities on which the Bank makes advances to the Exchequer, viz., " deficiency bills," or " ways and means," as well as Treasury bills, Consols, Exchequer bonds, etc. (*v.* p. 321).

Other Securities.—These consist of three divisions, viz. (1) fixed securities, (2) securities on which the Bank makes loans and advances to bill-brokers and others, and (3) the Bank's portfolio of discounted bills. This item moves in harmony with " other deposits," and has been greatly increased since 1844.

These three divisions of other securities have not been published separately since 1875. The discount portion (which forms the Bank's most liquid assets) naturally declines when the market rate of discount is below Bank rate. The other two portions are generally supposed to be chiefly composed of Corporation stocks, railway debenture stock and Colonial Government securities, though the Bank does not supply any information on this point. The loans and advances are liable to great fluctuations.

Lastly there is the *Reserve*, which, as already stated, is made up of notes and gold and silver coin (*v.* p. 103). This has increased from £9,000,000 in 1844 to £26,000,000 in the present return, but its proportion to liabilities (i.e., to public and other deposits and seven day and other bills) has decreased from about 60% in 1844 to about 50% in the return under examination, though, of course, the proportion is liable to great fluctuations.

Since the Bank's accounts are kept on the double-entry system of book-keeping, the state of the money market which is reflected by them may often be traced in the alteration of some two different items of the return, but, unfortunately, owing to the paucity of details supplied by the return, those alterations are frequently obscured.

Influence of the State of Trade on the Money Market

When trade is dull the quantity of bills offered for discount falls off, with the result that the proportion of the reserve to liabilities increases, and market rates decline, while " other deposits " rise above the average.

This situation is reversed by an active state of trade or of speculation, which causes ar increase in the demand for capital in order either to take advantage of the general rise in prices of commodities or to maintain those prices at their enhanced level.

Influence of the Bill-brokers and Discount Houses

Bill-brokers act as intermediaries between the merchant and the banker, i.e., between those who want to sell bills and those who want to buy them. " Bill discounting," says Mr Clare,* " is really a trade by itself and a trade that requires extensive knowledge of a very special kind. The discounter must have the financial and moral standing of hundreds of commercial houses at his fingers' ends. He has to find out, if possible, who X is and what his antecedents are, whether he speculates or accepts too much, whether he was involved in the recent failure, or has lost by the fall in copper or silver, and so on; and according to the mental estimate which he thus forms of the state of X's affairs he is guided as to the amount of X's acceptances that it is safe to hold. In a word, he must know men and their means, in order that he may be able to tell a good bill from a bad one. Knowledge of this sort, it is evident, can only be acquired by long experience and the exercise of much judgement; and the broker, to whom it is of vital importance, gives his whole mind to it; but a banker has no time to devote to its intricacies. He has quite enough to do to look after his own customers without having to make inquiries about the acceptor of every bill he holds, and so, for the sake of a fractional difference in the rate, he is only too glad to save

* *Money Market and the Foreign Exchanges.*

trouble by buying from a broker, who takes the risk upon himself and whose wealth guarantees immunity from loss by bad debts. This only applies, however, to the large brokers and to the companies. If the banker buys from the small men, he practically takes the risk himself."

The bill-brokers are the principal borrowers of the "short loan fund" for the purpose of buying up bills, and their profit consists of the difference between the rates at which they borrow from the banks and the rates which they charge the merchant.

The influence of the bill-broker in the money market is described by Mr Inglis Palgrave (*Bank Rate and the Money Market*) as follows:

"When a banker requires a broker to repay him his 'call money,' the only source from which the broker can obtain the requisite supply is from the Bank of England. The broker cannot expect to be able to obtain the sum in the open market, as all available sources there are, as a rule, employed up to the hilt. He, therefore, goes to the Bank of England, pledges what are virtually the banker's own bills, and thus is enabled to repay the banker. These bills may have but a very few days to run, but the broker cannot wait until they have been matured. The banker must have his money and the broker must find it. The broker has no reserve of unemployed money. He cannot afford to keep a reserve, as he allows interest at a higher rate than the banker does on all his deposits. Hence, a demand for a comparatively small sum makes a stir disproportionately large in the money market.

"This arrangement is not favourable to the quiet working of the money market. If the custom generally followed on the Continent prevailed in this country, and bankers laid themselves out to discount freely for their customers, feeling at liberty to rediscount these bills whenever needed with the Bank of England, all the work of intermediaries would be saved and business would be on a sounder foundation. It is the custom of banks in foreign centres, as at

Berlin, to rediscount thus habitually. The arrangement is a good one in many ways; it helps the central bank to keep in touch with the smaller business houses which surround it, and it enables those houses to carry on their business with perfect smoothness. The smaller banks in foreign business centres rediscount as a matter of course with the central bank, which is thus supplied with a large mass of perfectly dependable and rapidly maturing paper; but in London, if it were known that a bank, even of the highest standing, habitually rediscounted with the Bank of England, it would at once be held to be *in extremis*. In times of panic and peril such things, of course, have to be done, but in the ordinary way of business no London banker ever dreams of such a thing. The result is that while some London bankers discount—and to large sums—for their customers, others do not do so, and the customers, many of very high standing, go to the bill-brokers. . . .

"The competition for bills in the discount market is, beyond question, extremely sharp at the present day. There are several large joint stock companies formed for the purpose of carrying on this class of business, and the number of private firms engaged in it seems also to grow. Various circumstances—the increasing supply of money, the power of dealing by means of telegraphic transfers and other business arrangements—have all tended to limit the supply of bills, which is distinctly smaller now in proportion to the supply of money than it was thirty or forty years since, whilst the competiton for those bills which are in the market is closer than ever."

The application here described of the brokers to the Bank for advances is reflected in the Bank return in a rise of "other securities" and a decrease in the proportion of reserve to liabilities. The reverse effect is produced when the banks are subsequently sufficiently supplied with the money to relend to the brokers, who thereupon repay their debts to the Bank.

The Influence of the British Government

The British Government borrows temporarily in the market by means of Treasury and Exchequer bills, and from the Bank of England by means of either Treasury bills or "deficiency bills" or "ways and means" (Appendix H). One of the Government's principal objects for borrowing is to meet the payment of the quarterly dividends on the National Debt. When the banks buy these Treasury bills other deposits are reduced and public deposits are increased, and the reduction of the other deposits is, of course, accompanied by a stiffening of the market rates (*v.* Appendix G). The foreign banks also invest largely in these securities.

The repayment of the Treasury bills out of the revenue collections increases other deposits and decreases public deposits, thereby restoring the market supply and easing the market rates. These movements do not alter the proportion of "reserve" to liabilities, but when the Bank of England purchases the Treasury bills both public deposits and Government securities are increased, and the proportion of the reserve is reduced. Similarly, when the Government borrows from the Bank on "deficiency bills," public deposits and Government securities are increased and the proportion of the reserve falls. When the Government subsequently repays the "deficiency bills" out of the revenue the results on the return are reversed.

The collection of the income-tax causes a transference of capital from the banks to the Bank of England, which is accompanied by a temporary stringency, a reduction of other deposits and an increase of public deposits.

The issue of large loans by corporations or the falling due of "calls" thereon (*v.* p. 253) in the same way temporarily denudes the market of its supply of money and thereby hardens market rates, but when the money thus removed from the market is subsequently released, the banks are again able to lend freely, and market rates become easier.

Influence of the India Council

When the proceeds obtained by the India Council from the sale of India Council bills (*v.* p. 178) are not immediately required by the Council, they are often lent to the market in the same way as loans are made by the banks; this action eases the market rates. The opposite tendency is produced when the Council calls these loans in again.

The Influence of the Stock Exchange on the money market is explained in Chapter XX. The banks make advances (1) to bulls from one fortnight to the next, and (2) to those who make profit out of the difference between the rate of interest they pay on the money which they borrow from the banks and the higher dividends which they receive on the securities which they purchase with the money so borrowed. The rates charged by the banks for loans to the Stock Exchange are usually higher than those charged on other classes of advances owing to the larger element of risk undertaken (*v.* p. 263).

Influence of the "Active Circulation"

When an increase in the "active circulation," which diminishes the Bank's reserve, is only due to one of the several well-known periodical causes which are merely temporary, the Bank rate is not affected by it; but when it is the result of a disturbed state of credit and is a sign that the public are using the note as a substitute for the customary, but now distrusted, cheque, the Bank rate has to be raised to protect the reserve. For, as we have seen (*v.* p. 100), there is a certain limit which the active circulation is not allowed to exceed, viz., £18,500,000, based on securities, plus as much more gold as there is in the Bank, so that an expansion beyond that limit can only be permitted by suspending the law which prohibits it, viz., the Bank Act of 1844.

Withdrawal of Gold from the Bank

A withdrawal of gold from the Bank, when only due to certain well-known temporary domestic demands, although

it diminishes the reserve does not necessarily affect the Bank rate; but when the withdrawal is due to a bad state of credit or to the need for more gold to meet the requirements of an active state of trade at home, or to cover the Scotch note circulation (*v.* p. 107), or to export abroad, the Bank rate is raised to stop the drain.

There is generally a heavy demand on the reserve every autumn, which is known as the autumnal drain. "As a rule, the autumn and early winter months are the times of greatest business activity, which sometimes affects the rates as late as the months of January and February. The demands which the home harvest brings are great, the demand which foreign supplies of all kinds entail are more pressing still. The large amounts of produce then coming forward affect the money market, and a deficient harvest (should there be a short supply) usually manifests itself about the third week in October. The shipments of corn also from America generally commence early in September, and intensify up to the middle of November. These causes and others of a kindred nature, which there is no need to specify, account for the autumnal demand" (Inglis Palgrave, *Bank Rate and the Money Market*).

Mr Palgrave then goes on to explain the causes of demands which occur at other seasons of the year. "In the month of May a corresponding, though slighter, increase of pressure may be observed to that taking place in October, November and December. The opening up of those sources of importation which have been locked up by the severity of the winter probably accounts for a considerable part of the increased demand for money indicated by a rise in its value. Some effect must also be assigned to the periodic increase in the Scotch circulation in the months of May and November."

By a comparison of the published weekly statement of imports and exports of gold with the Bank return, it can readily be ascertained to what extent an alteration in the reserve is due to either a domestic or foreign movement of

gold or to fluctuations in the active circulation (*v.* Appendix G).

Influence of the Rate of Discount on the Rates of Exchange

A rise in the Bank rate of discount is, however, of itself alone, not necessarily effective in arresting an export of gold. Unless the *market rate* is raised above the level of the rate prevailing in the country to which the gold is being or is likely to be exported, there will be no effect on the rate of exchange, and so long as the rate of exchange remains sufficiently adverse the export will continue (*v.* p. 181). We must, therefore, inquire how it is that when the foreign exchanges (quoted in foreign currency) are low, a rise in the London market rate of discount (which can be forced up by a rise in the Bank rate)* above the foreign market rate causes a rise in the sight rate of exchange.

In the first place it is due to a "Continental demand for London paper" (Mr Clare's *A.B.C. of the Foreign Exchanges*). This demand is of a twofold character, viz., investment and speculative.

(1) *An Investment Demand*

Suppose, for example, the Paris cheque on London is 25·16 and both the Paris and the London market rates of discount are 3%, the Paris long on London being 25·16 less ·19 (3 months at 3%) = 24·97. A rise of the London discount rate to 3½% will change the long rate to 25·16 less ·22 (3 months' discount at 3½%)=24·94. The purchaser in Paris of a "long London" at 24·94 will realize, at maturity, a profit at the rate of 3½% per annum *provided the sight rate remains unaltered* at 25·16, thus:

Purchase of long London cost	24·94
Sale of same realizes . . .	25·16
i.e., a profit of. . .	·22 in three months

whereas the rate obtainable in Paris is only 3%.

* The Bank effects this by selling Consols for cash, thereby reducing the market supply of money.

(2) *A Speculative Demand*

'But it does not follow that the sight will, as we have just supposed, remain at 25·16. On the contrary, it may be expected to rise in consequence of the investment demand, and this expectation will induce further purchases for the sake of realizing a higher profit than 3½%—e.g., if the sight rose to, say, 25·25 the profit at maturity would be 25·25 less 24·94 = ·31, which is at the rate of 5% per annum.

In the next place, the rise in the Exchange may be further hastened by a demand from the *foreign bankers established in London,* who are ordered by their continental correspondents to buy up London bills and recoup themselves by drawing on the Continent.

The sale of these latter drafts on Paris has, of course, the same effect on the exchanges as the purchase in Paris of bills on London.

The rise in the Exchanges brought about by these several causes is, however, subjected to opposing influences, which, when the rate approaches specie point, combine to retard its upward progress; but, notwithstanding this opposition, specie point will ultimately be reached if the rate of discount is raised high enough. The opposing influences referred to spring from two sources: (1) a demand in London* for bills on the Continent, in view of a speculative profit arising from an anticipated fall in the exchange. Suppose cheques on Paris are quoted 20·30 and long 20·45, Paris discount being 3%.

The purchase of a long Paris for 2,045 frs at 20·45 costs £100. At maturity the bill would, *if the sight rate remained unchanged* (20·30) realize nearly £100 15s., or a profit of 15s. in three months, i.e., at the rate of 3% per annum. But if the sight rate fell to 20·25 the bill would realize nearly

* The cream of the foreign exchange business has for a long time been in the hands of foreign bankers in London; English bankers for some reason or other have always neglected foreign bills as an investment. But the London banks are now beginning to seriously enter the field; both the London County and the London City and Midland having recently opened foreign exchange departments.

£101, or a profit of £1 in three months, i.e., at the rate of 4% per annum, and a fall may well be expected on account of there being but little room for a further rise. This demand in London for bills on Paris tends to lower the exchange.

(2) Competition of the foreign banks in London to purchase London bank bills with a view to obtain a profit from the resale on an anticipated fall in the rate of discount has the effect of weakening the London rate of discount, and if the latter falls sufficiently the rate of exchange drops also (*vide* after).

The profit derived from the sale of London bills by the foreign banks in London, when the London discount rate falls, may be illustrated as follows:

Suppose the market rate is 5%, the sum invested in £1,000 3 months' bills on London would be £1,000 less £12 10s. (3 months at 5%)=£987 10s. If the rate of discount remained unchanged, the bill would be retired at maturity for £1,000 and the profit would be £12 10s. for 3 months, i.e., at the rate of over 5% per annum. But if the discount rate fell to 4% at the end of, say, one month, the bill would be sold for £1,000 less £6 13s. 4d. (2 months' interest at 4%)=£993 6s. 8d., thereby showing a profit of £993 6s. 8d. less £987 10s.=£5 16s. 8d. for one month, i.e., at the rate of nearly 7% per annum. Moreover, as just now mentioned, a fall in the London market discount rate below the rate prevailing abroad, or a rise of the latter above the London rate, brings about a decline in the exchange. This is due both to the natural cessation of the continental investment demand, and to an all-round selling of London bills in London as well as on the Continent for the purpose of getting the extra profit out of the fall, which we illustrated above.

The Bank Returns of New York, Paris and Berlin

In this way the movements of gold between the four great money markets—London, New York, Paris and Berlin—which depend on the rates of the exchange, are largely influenced by the rates of discount, and it is for this reason

that the returns of the Associated Banks of New York (*v.* p. 310), the Bank of France (*v.* p. 109), and the Imperial Bank of Germany (*v.* p. 106), which are published in the daily papers, are so closely watched by the Bank of England.

The rate of discount in New York generally rises very high in the autumn, owing to the demand for money occasioned by the transportation of the crops from the interior to the coast for export. The amount of "specie and legal tender" shown in the return of the associated banks indicates the extent of the increase or decrease in the United States domestic circulation of coin and legal tender; the "net deposits" are the market's supply of cash and the "loans and discounts" show the extent to which the American banks are lending to the trading community. The movements in these items naturally affect the reserve of the Associated Banks, and if that reserve becomes seriously depleted it has to be replenished by an import of gold from Europe (*v.* Appendix F and pp. 119-125).

The Bank of England's Buying and Selling Price of Gold

There is also another way in which the Bank of England can to some extent arrest an export of gold, and that is by raising its selling price of gold bars and foreign gold coins. Gold is usually imported from the mines by the bullion brokers or gold refiners, and most of it is on arrival deposited with the Bank of England, which acts as a distributing centre for all purchasers and charges a small commission for storage.

The bullion broker sells it to either the Bank of England or to the foreign bankers in London or ships it to the Continent or America.

When the Bank is a buyer, it credits the bullion broker's account and hands the gold over to the Issue Department in exchange for notes, the net result on the return being an increase of "other deposits" and "notes in reserve" and of "notes issued" and "gold coin and bullion."

The minimum price which the Bank pays for bar gold is

77s. 9d. per standard oz. ($\frac{11}{12}$ fine), which price was fixed by the Bank Act of 1844 (*v.* p. 101).

The Bank can then, if it wishes, have the gold minted into coins at the rate of 77s. 10½d. per standard oz., thus receiving 1½d. per oz. as compensation for risk, trouble and delay.

If there is a great demand for gold for export, the importer may be able to sell the gold for a higher price than that offered by the Bank, but in such case the latter institution can, of course, obtain it by bidding higher, a mode of inducing imports which is frequently advocated in preference to the one we have just been discussing (*v.* p. 121).

The price at which the Bank sells gold is usually £3 17s. 10½d. per standard oz., thus making a profit of 1½d. out of the difference between its buying and selling price, but as the selling price is not fixed by law it is sometimes raised to £3 17s. 11d., or even £3 17s. 11½d., in order to arrest an export.

If the rate were to be raised higher than this, it would be cheaper for exporters to withdraw gold sovereigns from the Bank, since they can always demand these at the rate of £3 17s. 10½d. in exchange for notes and have them melted abroad (Cf. p. 182).

The price at which the Bank buys foreign gold coins is quoted at so much per oz., of coins instead of so much per oz. of standard gold; hence, when the foreign coins contain less pure gold than standard gold contains, the price is less than 77s. 9d. per oz., e.g., what is the price of 1 oz. American eagles $\frac{899}{1000}$ fine?

shillings?=480 grs gold eagles
1,000=900 pure gold
916·667 =1,000 English standard
480 =77·75 shillings, bank price of standard gold
Ans. 76·34 shillings=76s. 4d.

The selling price of foreign coins per oz. of coin $\frac{899}{1000}$ fine is usually about 76·60 shillings=76s. 7½d.

Similarly, every foreign mint or national bank has its practical mint price of foreign coins and of bullion (*v.* pp. 22, 237).

Monthly Returns of the Banks

Besides the weekly return of the Bank of England, another guide to the state of the money market is furnished by the monthly returns of the other banks.

A diminution of " deposits " in these returns may either be taken to indicate a decrease in the people's savings, or else it may be to some extent attributed to the competition of other institutions to obtain deposits.

A diminution in the proportion of " reserves " points to an increase in the demand for loanable capital, and an increase in the proportion of " reserves," or a reduction of loans, discounts and advances, coupled with an increase of " investments," may be interpreted to signify a falling off in the demand for loanable capital.

CHAPTER XVIII

THE comparative value of gold as between gold-standard countries is calculated as follows, the current sight rate of exchange and the practical mint prices of coins or bullion being, of course, links in the chain rule sum.

Parity between London and New York

If the cable transfer rate of exchange between London and New York is at par, an oz. of standard gold, which in England costs 77s. 9d., that is 77·75, would in New York be worth

shillings?=1 oz. standard gold
12=11 pure.
900=1,000 New York standard.
43 oz. = $800 New York practical mint price (*v.* p. 236)
4·866=20s. (par of exchange)
Ans. 77s. $10\frac{9}{16}$d., the New York parity.

But if the rate of exchange is unfavourable to England, say $4·83=£1 (export specie point), 1 oz. of standard gold in New York would be worth

shillings?=1 oz. standard gold
12=11 pure
900=1,000 New York standard
43=$800 New York practical mint price
4·83=20s.
Ans. 78s. $5\frac{9}{16}$d.

If we wished to find the New York parity of 1 oz. of standard English *coins* we should have to alter one link in the chain. As the American mint takes English sovereigns not as being $\frac{916 \cdot 5}{1000}$ but as only $\frac{916}{1000}$, the link in the chain, which now stands as 12=11, would have to be altered to 1,000=916, and the answer will be less than 78s. $5\frac{9}{16}$d.

London and Paris

Or, again, if the rate of exchange between England and France is unfavourable to England, say 25·11 (specie point),

shillings?=1 oz. standard gold
12=11 pure
1=31·1 grammes
1,000=3437 frs (practical French mint price, *v.* p. 164)
25·11=20s.

Ans. 78s. 0·48d.

Hence, an oz. of gold which in England is only worth 77s. 10½d. can be sold in Paris for 78s. 0·48d.

But for the coinage charge, the link in this sum, which reads, 1,000=3,437, would be 1,000=3,444·44 (*v.* p. 164), and the answer would be 78s., 2$\frac{1}{16}$d., and if we estimated the expenses of freight, insurance, loss of interest and brokerage at $\frac{1}{16}$%, we should, if we made this another link in the chain as 100·43=100, reduce the answer to 77s. 10½d. (*v.* p. 137)

To find the Paris parity of 1 oz. of English standard gold in the form of sovereigns we should have to alter one link in the chain exactly in the same way as above explained in the case of New York, as the French mint takes sovereigns at $\frac{8}{1000}$ fine.

London and Berlin

Suppose the rate between Berlin and London to be favourable to London, at 20·46 marks=£1 (the fixed par being 20·43 marks=£1), the English equivalent value of an oz. of standard gold in Germany would be :

shillings?=1 oz. standard gold
12=11 pure
1=31·1 grammes pure
1000=2784 marks Reichsbank's practical price (*v.* p. 22
20.46=20s.

Ans. 77s. 7d.†

*Brokerage on bullion and coin varies between $\frac{1}{16}$% and $\frac{1}{4}$%.
†The Reichsbank buys English sovereigns as being $\frac{9}{1000}$ fine.

Showing that gold is worth more in England than in Germany. It would not, however, be profitable to export gold from Germany to England until the rate of exchange rose to above specie point, 20·55 marks. Thus, an unfavourable rate of exchange implies a higher valuation of gold abroad and a sufficient difference will induce exportation of gold, while a favourable rate corresponds to a lower valuation abroad, and a sufficient margin will induce importation.

From the last example above given it will be evident that if a country for some purpose or other orders gold from London, it has to pay more for it when the rate of exchange is against it, and less if the rate is in its favour.

London and India

If the exchange between England and India is at par, what is the Indian parity of 1 oz. standard gold?

s.?=1 oz. standard gold
12=11 pure
$\frac{3}{8}$=23·89 rupees*
1=16d. (telegraphic transfer)
12=1s.

Ans. 77s. 10½d.

Find the parity Indian quotation of 1 oz. standard gold, the exchange being at par.

rupees?=1 tola.
1=$\frac{3}{8}$ oz.
11=12 standard
1=77s. 10½d.
1=12d.
16=1 (telegraphic transfer)

Ans. 23·89.*

The same principles which we have enunciated in respect

*So long as the silver rupee does not become depreciated, this must continue to be the Indian price of gold—$\frac{3}{8}$ × 1 oz.=180 grains; but as the mohur is $\frac{1}{12}$ fine (and weighs 180 grains) the value of the mohur is $\frac{11}{12}$ × 23·89 rupees=21·9 rupees=the ratio between the mohur and the silver rupee (*v.* p. 145).

of the traffic in gold between two gold countries apply to t traffic in silver between two silver countries.

The Comparative Value of Silver between Two Gold Countrie

Paris and London

Suppose cheque London to be 25·20 (i.e., unfavourab to London) and the price of silver quoted in Paris to l 100 frs per kilo pure silver, find the equivalent English price.

pence?=1 oz. standard silver
1,000=925 pure
1=31·10 grammes
1,000=1 kilo
1=100 francs
25·20=240d.

Ans. 27·39d. per standard oz.

Find the equivalent French parity of an English price of 26

francs?=1 kilo pure
1=1,000 grammes
31·10=1 oz. pure
925=1,000 standard
1=26d.
9·5=1

Ans. 95 frs

London and Bombay

Suppose India quotes the price of silver at 66¼ rupee (*v.* p. 242) per 100 tolas of silver $\frac{996}{1000}$ fine, and suppose th rate of exchange is at par, i.e., 16d., find the Englis equivalent.

pence?=1 oz. standard
1,000=925 pure
996=1,000 oz. Indian fineness
$\frac{3}{8}$oz.=1 tola
100=66¼ rupee India price
1=16d.

Ans. 26·25d.

Find the Indian equivalent of an English price which is quoted at $25\frac{7}{16}$ per oz. (*v.* p. 242), the rate of exchange being at par.

rupees?=100 tolas standard
1=$\frac{3}{8}$ oz. standard
1,000=996 pure
925=1,000 English standard
1=$25\frac{7}{16}$ London price
16=1 rupee

Ans. 64·19 rupees

London and New York

Suppose the New York price of silver is 70 cents per oz. pure, and the exchange is at par, find the English equivalent.

d.?=1 oz.
1,000=925 pure
1=·70$ (price, New York)
1=49·316d.

Ans. 31·93d.

Find the New York parity of an English quotation of 30d. per oz., cable transfer being 49·40

$=1 oz. pure
925=1,000 standard English
1=30d. (London price)
49·40=1$

Ans. 65 cents

The same principles which govern the calculations of silver between gold countries apply to gold between silver countries.

English Price of an Ounce of Foreign Silver Coins

When the English price of foreign silver coins is reckoned by the oz. of coins instead of by the oz. of English standard silver, the price of an ounce of coins will, of course, be different from that of an ounce of standard silver, because there is usually less pure metal in the foreign silver coins than there is in English standard silver.

For example:

The daily paper quotes 1 oz. of standard silver as $25\frac{7}{16}$d.

What would we expect to be the quoted price of 1 oz. of Mexican coins if the price of silver is $25\frac{7}{16}$d. per standard oz.?

Mexican coins being about $\frac{900}{1000}$ fine* against English standard silver $\frac{925}{1000}$ fine. Hence, the sum is worked :

d.? = 1 oz. Mexican dollars
1 oz. = 480 grains
1,000 = 900 pure silver
925 = 1,000 English standard
480 = $25\frac{7}{16}$d. (present price of standard silver)

Ans. 24·76d.

On turning to the daily paper, however, we see that the price of 1 oz. Mexican dollars is 27d.

		Price	Change
London	Spot	$25\frac{7}{16}$d.	—
	Forward	$25\frac{5}{16}$d.	—
	Mexican $	27d.	——
Bombay	Spot	$66\frac{3}{4}$d.	$-\frac{1}{4}$
	Next account	$66\frac{3}{16}$d.	$-\frac{1}{4}$
	Account following	$65\frac{1}{2}$d.	$-\frac{3}{16}$
Calcutta	Spot	$66\frac{5}{16}$d.	$-\frac{5}{16}$
	Forward	$65\frac{9}{16}$d.	$-\frac{5}{16}$

*Assuming the Mexican dollar to be full legal weight (*v.* p. 140).

How do we account for this advanced price of Mexican dollars? It is due to the demand for Mexican dollars exceeding the supply, for Mexican dollars are used very extensively on the coast of China, and the demand is created by those who wish to ship them to that country.

CHAPTER XIX

IN order to understand the influence of Stock Exchange transactions on the rates of exchange we must give a brief outline of the Stock Exchange and its business.

The Members of the Stock Exchange

A Stock Exchange or Bourse is a market in which the commodities dealt in are termed stocks and shares or *Securities.** The members of the London Stock Exchange are called stockjobbers and stockbrokers.

A stockbroker acts as an intermediary between the buyers and sellers, i.e., between one jobber and another or between the jobbers and the outside public who are not members of the " House."

The stockjobbers (or " dealers " as they are also called) buy and sell securities both among themselves and with the public (the brokers being their agents in return for a commission of $\frac{1}{8}\%$),† and the prices at which they buy and sell the stocks and shares are called the *Market Prices.*

Stocks are acknowledgements of money borrowed and of the right of the holder to receive interest thereon.

The money lent by the people to the Government or to a corporation or to some of the railway companies and commercial companies which have power to borrow is called stock. The word is, however, frequently used synonymously for shares (*v.* p. 251).

Stock Issued by a Government or Corporation

When a Government requires money to carry on a war or build a railway, or for some other large undertaking, it frequently borrows it either from its own people or from a

*Stocks and shares are also called " convertible securities."

†Brokerage (*v.* Index).

foreign country; it is said to raise a *national loan*, which is called stock. The National Debt of Great Britain is called the *Funds*.

Suppose a government or a city corporation wishes to borrow, say, £5,000,000, and does so by issuing stock in the form of *debentures* or *bonds to bearer*.

It may divide the £5,000,000 into hundreds, and print 50,000 papers or certificates, each one stating that the Government is indebted to the bearer of that piece of paper to the extent of £100,* and promising to pay him a fixed rate of interest, say, 3%, in two half-yearly instalments.

The Government may then offer these bonds for sale to the public in either one of two ways, viz., (1) it may put a *fixed price* on them, say £100, in which case if the value of money in the market were more than 3% no one would buy the bonds, while, on the other hand, if the market rate of interest were less than 3% the bonds would be bought; but if the rate of interest on the fixed price were above the market rate the Government might, perhaps, have done better for itself by fixing a higher price. In order to be sure of getting the most possible money the borrower frequently adopts (2) the *tender system* of sale, e.g.:

An advertisement will be inserted in the papers in the following form: "Tenders are invited by the X Government (or Corporation) for an issue of £5,000,000 3% stock at a minimum price of 97." This means that the lowest price the Government will accept is £97 per £100 stock, but if a higher price is offered, it will, of course, be accepted. Applicants for the stock will then have to use their own judgement as to what price they should offer. £3 on £97 is 3·09% (*v.* p. 250). Those applicants who think the value of money is considerably less than 3·09% may offer well over £97 per £100, say £99 or £100; those who estimate the value of money as only slightly less than 3·09% may offer a price but little over £97, say £97½, and so on. Thus, if the rate

*Or it might be divided into 1,000,000 £5 bonds, or 10,000 £500 bonds, and so on.

of interest offered by the Government is exactly the current market rate, the loan will be floated "at par," i.e., £100 stock will be sold for £100 cash; if it is below the market rate, the loan will be sold "at a discount," £100 stock fetching less than £100 cash; if it is above the market rate, the loan will be raised "at a premium," i.e., £100 will realize more than £100 cash.*

Calculation of Price of Stock paying a Fixed Interest

The manner of calculating what should be the price of stock which pays a fixed rate of interest is as follows: Suppose the market value of money is 3%, what should be the price of $4\frac{1}{2}$% stocks?

$$3 : 4\tfrac{1}{2} :: 100 : x$$

$$x = \frac{4{\cdot}5 \times 100}{3} = £150$$

Again, suppose money is worth 4%, what should be the price of 3% stocks?

$$4 : 3 :: 100 : x$$

$$x = \frac{3 \times 100}{4} = £75$$

Appendix K gives an extract of a public advertisement of the issue of colonial convertible bonds, with detailed explanation of the same.

It will be seen from this advertisement that the whole amount of the purchase money of a bond or other kind of stock is not necessarily payable in a lump sum, a portion must be paid on application, and further instalments on fixed dates until the whole amount has been paid. A *scrip certificate* is given to the purchaser to serve as a proof of his holding until the stock has been fully paid for and the bond issued, or until the holder's name has been inscribed (*v.* p. 247), or registered (*v.* p. 247).

The public, having subscribed to the bearer bonds, may, if they wish to sell them, transfer them by simple delivery from hand to hand like bank-notes. Each *debenture* or

*v. Appendix E. Issue of Treasury bills.

bond has attached to it a sheet of tickets called *coupons*, each coupon represents one half-yearly interest payment and has to be detached from the bond by the bondholder and presented for payment when the time for paying the interest arrives.

But instead of issuing bonds to bearer (i.e., *bearer securities*, also called *scrip stocks*) the Government might issue the stock in either one of two other forms, viz., *Inscribed stock* or *Registered stock*.

The principal difference between bonds to bearer and these latter forms of stock lies in the manner in which they are transferable between holders.

In the case of *inscribed stock* the subscriber's name and address is inscribed in a *register** kept at some public office or bank, and the subscriber has no certificate other than a bank receipt to show that he owns the stock. Hence inscribed stock can only be transferred by the owner or his attorney acknowledging the transfer by signing his name in the register.

In the case of the *registered stock*, the holder is given a certificate which is registered in his name in a transfer register and copied into a ledger, and is only transferable by a stamped *transfer deed* signed by the holder or his attorney. But although the stock itself can only be transferred in this manner, it may have interest coupons payable to bearer. Most of the London Stock Exchange dealings are in this kind of stock.

Stock may be either redeemable or irredeemable.

Irredeemable stock pays the agreed on interest in perpetuity, or until the issuer buys it back in the open market.

Redeemable stock is paid off by what is called *amortisation* in a stated number of years. Most British Corporation stocks are of this nature. A certain sum of money, called an *Annuity*, is laid aside every year, part of which is used

*From this register the particulars are posted to a ledger. The dividends payable on the stock are entered in a dividend register, from which the dividend warrants are prepared, and sent to the stockholders or their bankers.

to pay the interest and the other part, which is called the *Sinking Fund*, to pay off the principal.

To find an Annuity and Sinking Fund

A loan of £50, paying 5% interest, is redeemable in five years. Find the Annuity and Sinking Fund.

The total amount to be paid is the principal (£50) plus compound interest for five years (£13·815), total £63·815.*

We have to find an annuity which will amount to £63·815 in five years.

First find what an annuity of £1 will amount to in five years.

The amount of an annuity of £1 at 5% for five years may be found in either of two ways:

(1) It is the amount of £1 less one, multiplied by 100 and divided by the rate, thus:

The amount of £1 at 5% compound interest in five years is £1·2763.*

Hence $(1{\cdot}2763-1) \times \frac{100}{5} = 5{\cdot}526$.

(2) It is the amount of an annuity of the rate divided by the rate.

Amount of an annuity of the rate is 1·2763—1=·2763,

Hence, ·2763 ÷ ·05=5·526.

*This is most quickly found by logarithms.

Tables, which give the amount of £1 for any number of years, at any rates of compound interest, show at a glance that the log. of £1 for five years at 5% is ·1060. In the absence of these tables, however, a knowledge of logarithms enables us rapidly to find the required log. as follows:

The amount of £1 for 1 year at 5% is £1·05.

Therefore the amount of £1 for 5 years at 5% is £1·055.

and the log. of $1{\cdot}05^5 = 5 \times$ the log. of $1{\cdot}05^5$.

Log. of 1·05 is ·0212 (*vide* Log. Tables),

∴ Log. of $1{\cdot}05^5$ is $5 \times {\cdot}0212 = {\cdot}1060$.

The next step is to find out how many pounds this log. (·1060) represents.

This is again found by reference to Log. Tables, which show it at a glance; but even if the Log. Tables do not give the number represented by the particular log it will give numbers represented by logs

Then:

Amount of Annuity of £1.		Annuity of £1.		Amount of Annuity of x		Annuity required.
£5·526	:	£1	::	63·8150	:	x

x=11·5489=Annuity required.

£11·5489 minus the first year's interest on £50 is the sinking fund, viz., £9·0489.

Uses of Sinking Fund

The sinking fund may be used to redeem the principal in different ways:

It may be invested at compound interest until the date of redemption of the whole stock arrives, at which time the sinking fund will have increased to the exact amount of the stock (*v.* Appendix L).

Or it may be used to pay off certain portions of the stock at par on certain fixed dates, the portions to be repaid being determined by what are known as "*Redemption drawings*," that is, by a process of drawing lots or balloting, the numbers of the lots so drawn being those of the stock which is to be paid off. This is the way in which foreign government and municipal borrowings which are represented by so-called

which are very near to ·1060, and from them we can ascertain the exact number required, e.g.:

Suppose the Tables give:

log. ·1038 represents 1·27
and log. ·1072 represents 1·28

The difference is	·0035	·01

·1060
·1038

·0035 : ·01 :: ·0022 : x

x=·0063

Add ·0063 to 1·27=£1·2763, which is the number represented by the log. ·1060, and is the amount of £1 in 5 years at 5%.

Hence the amount of £50 in 5 years @ 5% is

1·2763 × 50=£63·815

And, of course, the compound interest is

£63·815 minus £50=£13·815

premium bonds or *Government lottery bonds* are amortised. The rate of interest allowed on these bonds is small, ranging from, say, 2% to 3%, but a further sum is set aside by the government or municipality as a separate fund for distribution in the form of *premiums* or *cash prizes*, which are awarded at the periodical drawings. The premiums range from small amounts up to as much as £24,000.

Price of Redeemable Stock

The price of stock which is redeemable at fixed dates is affected by the length of time which elapses before it is redeemed, e.g.,

If a stock is bought to-day at £95 and is redeemable in five years at par, its price will improve each year by $\frac{1}{5}$th of £5, i.e., by £1; if, on the other hand, the present price of the stock is £105, it will decline each year by £1.

To calculate what should be the price of a redeemable stock, proceed as follows:

Victoria 4 per cent stock is redeemable in ten years, and its present price is 104, what price should it be?

First find the rate of interest it yields.

$$104 : 4 :: 100 : x$$

$$x = \frac{4 \times 100}{104} = \underline{£3\ 16s.\ 11\tfrac{1}{13}d.}$$

Since in ten years the stock is to be redeemed at par, the price must decline each year by $\frac{1}{10}$th of £4, i.e., by 8s.

Deduct 8s. from £3 16s. $11\frac{1}{13}$d., and the real rate of interest is £3 8s. $11\frac{1}{13}$d.

Then proceed as in the example shown above (*v.* p. 246) to calculate what the price should be according to the market value of money.

The interest on national loans is usually paid out of taxes.

The principal British Government stock is known by the name of "*Consols*," which is an abbreviation for "*Consolidated Annuities*," the separate loans which have from

time to time been raised by the British Government since the reign of William and Mary (*v.* Part I, p. 92) having been consolidated into one great *Funded National Debt.* When the price of this stock was high above par, portions of it were "converted" (*v.* App. K) and the rate of interest was reduced to $2\frac{3}{4}\%$, those who objected to receiving the reduced rate were entitled to be paid off at par. but the majority of stockholders preferred to take the reduced rate, as it was no lower than the market rate on other first-class securities.

Shares

Suppose a number of persons are of opinion that if £100,000 could be obtained a profit might be earned by the employment of that money in some particular undertaking, such as the purchase of a patent or of some going business which requires more capital; these persons may form themselves into a joint stock limited liability company under the Joint Stock Companies Laws, which are contained in seventeen separate Acts of Parliament passed during the years 1862 to 1908, and every one who contributes towards the required £100,000 becomes a member of the company, i.e., a shareholder. The £100,000 is called the company's *capital,* and may be divided into, say, 10,000 shares of £10 each.

Requirements of the Companies Acts, 1862–1908

The Company Laws prescribe certain formalities.

The minimum number of persons who may form themselves into a company cannot be less than seven; in the case of a joint stock bank the minimum number of persons is ten.

Before the company is *incorporated* a *Memorandum of Association* and *Articles of Association* are prepared. The former document defines the objects of the company, and must be signed by the seven persons who form the company.

The Articles of Association set forth the internal regulation of the company, e.g., calls of shares (*v.* p. 253), forfeiture of shares, borrowing powers, power of directors (*v.* p. 254) to

refuse transfers of shares, power to modify the memorandum of association, alteration of capital, distribution of dividends, etc.

The Memorandum of Association having been signed and everything being in order, the company may be *registered* at Somerset House and granted a *certificate of Incorporation*, on payment of certain duties. The company so formed may be either a private one or a public one. If it is a public one a *Prospectus* must be issued giving particulars of the company's business and anticipated profits. The prospectus is intended to procure subscriptions to capital, i.e., the sale of shares.

A *Private Company* "means a company which by its articles:

"(1) Restricts the rights to transfer its shares, and

"(2) Limits the number of its members (exclusive of persons who are not in the employment of the company) to fifty, and

"(3) Prohibits any invitation to the public to subscribe for any shares or debentures of the company."

Appendix J gives a specimen of a company prospectus.

Shares may be issued in return for property or rights or work done, instead of for cash, but in each case the particulars must be set forth in a duly registered contract before those shares are issued.

Shares are by the Act, 1862, prohibited from being issued at a discount, but a public company may pay a commission to anyone in consideration of his undertaking to place shares, or subscribe them himself or obtain the subscriptions of others, provided the Articles of Association authorize the same and the amount of the commission is stated in the prospectus. The agreement to apply, or find persons to apply, for a certain arranged number of shares is called an *underwriting* contract.

The *underwriters* thereby agree, in consideration of a commission, to guarantee the subscription of the com-

pany's capital. If the public fail to subscribe the required capital, the underwriters are said to be " stuck " with the unsubscribed portion, and are obliged to subscribe it themselves.

Thus underwriting is simply a form of insurance against the contingency of a company failing to recoup itself for the expensive outlays incidental to its formation.

Shares cannot be transferred in parts, but it is not necessary that the whole amount payable for them should be paid in a lump sum, i.e., they need not be *fully paid*. As is seen in the specimen prospectus given in Appendix J, only a portion need be payable when application for the shares is made by the intending subscriber, another portion is payable when he receives the " letter of allotment "* which allots him the shares, and the rest is not paid until the company " calls " (*v.* p. 228) it up, which may be either at specified dates or whenever the company wishes. The form which states when and where such " calls " are to be paid is termed a *call letter*. The object of requiring part payment on application—which must never be less than 5% of the amount of the share—is to prevent persons (who are called *stags*) from applying for shares with the express intention of selling them either immediately after or even before they have been allotted to them, for such sales naturally depress the price of the shares.

No allotment of shares is allowed to be made unless the minimum amount of the subscription which is named in the prospectus has been applied for, and when there is no allotment the application money has to be returned to the public. This provision is a protection to the public, as it prevents a company from receiving insufficient subscriptions and thereby losing the money of the shareholders. This is, of course, impossible when the minimum subscription is underwritten. The minimum subscription on which the

*The letter of allotment temporarily takes the place of the *share certificate*, and is issued to the purchaser provisionally until the calls are all paid (*v.* p. 246).

directors may go to allotment must be exclusive of any shares paid for otherwise than in cash.

From what has just been said, we may notice two principal differences between stocks and shares, viz., stock, unlike shares, can be transferred in any quantity or part (with the exception of bonds and debentures) and must always be " fully paid " by the subscriber.

The reason for not requiring shares to be fully paid is that the whole £100,000 capital may not be wanted when the business is only being started; a portion of it only may be sufficient for immediate requirements, and the payment of the balance may be deferred for a considerable time, often for many years. Moreover, the public are more likely to subscribe to larger quantities of shares if they are not obliged to pay the whole amount at once.

The £100,000 for which our hypothetical company was registered* is called the *Authorized* or *Nominal Capital;* that part of it which is paid for is called the *Paid-up Capital.* The unpaid portion of a share is a liability on the holder, and even if the holder transfers his shares to some one else he continues to be liable for one year from the date of transfer in the event of the transferee failing to pay the " calls " if required to do so by the board of directors.†

Thus, the liability of the members of a limited liability joint stock company is limited to the unpaid portion of their shares in the event of the company being wound up. But a member's liability may also be limited *By Guarantee;* in this case he is liable for the amount of stock which he undertakes to subscribe, by the memorandum of association, in the event of the winding up of the company.

The liability of a shareholder in a bank of issue (*v.* p. 216), however, is not limited in respect to the bank's note issues, which have to be met under all circumstances.

*In accordance with the Companies' Acts, a company must be registered at Somerset House.

†*v.* p. 251. The Board of Directors is a committee which is supposed to be appointed by the shareholders to manage the company's business.

Shares may be either issued "to bearer" or registered, their modes of transfer being similar to those already described in reference to stocks.

The various descriptions and different ranks of stocks and shares are, by Mr C. Duguid (*The Stock Exchange*), divided into classes which he describes as being "dependent, generally speaking, upon the nature and rank of the security." These classes may be enumerated in the following order: Trustee securities, preference or preferred, ordinary, deferred, founders' shares and vendors' shares.

(1) *Trustee Stocks* are those gilt-edged securities in which the Trust Investment Act of 1889* permits trustees to invest moneys held by them on trust. If such investments result in a loss, the trustees are absolved from all liability on that account. Out of a long list of the securities under this head, we may mention a few examples such as the British Government and India stocks, and a number of Colonial Government stocks, debenture stocks of certain Indian railways, and the nominal or inscribed stock of corporations or any municipal or county boroughs having a population which exceeds 50,000, etc.

(2) *Fixed Charge Securities.*—These include, firstly, debenture stocks, then debentures carrying a first right of mortgage, and after these, debentures with subordinate rights of mortgage, such as second, third, etc., in descending order, down to simple debentures which have no right of mortgage at all.

Debentures and debenture stock are not part of a company's capital, but are loans at interest; the holders are the company's creditors who receive interest, as distinct from its shareholders who receive dividends.

For this reason the holders of these securities are secured. "Mortgage debentures are secured by a specific charge on certain properties definitely scheduled; and in case of default in the interest payment, the Court will appoint a receiver in respect of such properties for the protection of

*Re-capitulated in the Trustee Act, 1893.

the mortgage debenture holders. Debentures, which are not mortgage debentures, are secured by a floating charge over the properties and assets of the company, and in the case of its default they rank as ordinary creditors, being entitled to proceed against the company and levy execution" (Charles Duguid).

(3) *Preference Stocks and Shares.*—The holders of these securities are entitled to a fixed rate of profit, if there is any, and have a claim each year to that particular year's earnings prior to that of the *ordinary* shareholders (*vide* below), who are only entitled to profits if there are sufficient to go round after the preference shareholders have been paid.

(4) *Cumulative Preference Shares.*—This means when in any one year the profits have been insufficient to pay a stipulated fixed rate to cumulative shareholders, the deficit is carried on to the next or succeeding years, and the ordinary shareholders are not entitled to any dividends till that deficit has been paid to the cumulative preference shareholders, who, therefore, rank above the non-cumulative preference shareholders of Class 3.

(5) *Ordinary Stocks and Shares.*—Ordinary stocks and shares are not entitled to a stipulated fixed rate of profit or interest. In successful years, the ordinary shareholders may receive far larger dividends than the holders of fixed charge securities; in unsuccessful years they may get nothing, for they are only entitled to the balance of earnings after some prior claims have been satisfied and after the transference of any funds to the reserve, for directors usually have the power to create reserve funds out of the revenue that would otherwise go to holders of ordinary stock.

(6) *Deferred Shares.*—When ordinary shares are divided into preferred and deferred, the latter are only entitled to share in the profits if there are sufficient after the preferred have received a fixed rate of dividend.

(7) *Founders' Shares.*—These are usually granted to promoters when the company is being floated, in return for

services rendered. The financial principle of issuing founders' shares is generally condemned as bad, inasmuch as not only are they usually entitled to an exorbitantly disproportionate share of the profits, but also they have the tendency to prevent the formation of an adequate reserve fund (*v.* 217) and the adoption of other sound financial precautions. This tendency is due to the reluctance of the holders of founders' shares to suffer the reduction in their dividends which would naturally result from writing down assets as a provision for wear and tear or by carrying a portion of the profits to reserve.

(8) *Vendors' Shares.*—These are usually taken by a vendor, instead of cash, in payment or part payment for the business or property which he converts into or sells to a company. When the vendor is satisfied to take a considerable portion of the purchase money in the form of shares instead of in cash it is a sign that he himself has faith in the soundness and interest in the success of the business.

Watered Capital

A company's capital is said to be "watered" when its nominal value is increased without a corresponding receipt by the company of an equivalent value in cash or other property, or without making any further provision for paying profits on the increased portion of capital.

Dividends can only be paid out of net profits, not out of capital, except in special cases where the shares were issued to obtain the cash for construction of works, plant, etc., which cannot be remunerative until after a long period, and so long as there is a debit balance to profit and loss arising out of previous years no dividends may be paid at all. But suppose the company to have had a successful year, the question arises, how are the profits to be distributed? A portion of them is usually put aside as a reserve (*v.* page 217) to meet possible future losses or liabilities, and the balance is distributed in the form of dividends either as so much per share or so much per cent.

In the latter case the percentage is reckoned on the paid-up portion of the share.

The price of shares in well-established companies can, like that of stock (*v.* p. 246), be roughly estimated by taking into consideration the market rate of interest, e.g.,

The market rate of interest being 3%, what should be the price of a £100 share, £10 paid up, on which the annual dividend is 7%?

$$3 : 7 : 10 : x$$

$$x = \frac{7 \times 10}{3} = £23\ 6s.\ 8d.$$

Again, the market value of money being 3%, what should be the price of £30 shares, £20 paid up, on which the annual dividend is 1%?

$$3 : 1 : 20 : x$$

$$x = \frac{20}{3} = £6\ 13s.\ 4d.$$

The price of stocks and shares is also influenced by the date on which the interest or dividend is payable. The nearer the approach to that date the larger is the portion of the *accrued dividend* which must be added to the price of the share.

The moment that date is passed the price falls, because it ceases to include any dividend.

Hence, immediately, or as soon as possible, after it has been announced that a company is about to pay a dividend and to close its transfer books while making preparations for the payment, all dealings in the stock are made at a lower price which is quoted "ex dividend." This may be done some considerable time before the dividend is actually distributed, and since, immediately before the appearance of the announcement the stock was dealt in at the higher price and quoted "cum dividend," it follows that the dividend goes to the seller if the price at the time of the sale was quoted "ex dividend" and to the buyer if the price at the time of the sale was quoted "cum dividend." When,

in the latter case, the transfer of the stock to the buyer has not been registered owing to the company's books being closed, the dividend is paid by the company to the seller, whose name is still on the books, so if the buyer does not deduct the dividend when he pays for the transfer, his broker claims it for him from the selling broker.

"Bearer" securities are quoted "ex dividend" on the day when the dividends are payable.

The real rate of interest represented by dividends on shares which are not fully paid up is calculated as follows:

The market price of a £20 share, £12 paid up, is £16, and the dividend is 5%, what is the rate of interest earned?

$$16 : 5 : 12 : x$$

$$x = \frac{60}{16} = £3\ 15s. \text{ or } 3\tfrac{3}{4}\%$$

Again, the market price of a £10 share, £8 paid up, is £4, and the dividend is 2%, what is the rate of interest?

$$4 : 2 : : 8 : x$$

$$x = \frac{2 \times 8}{4} = £4, \text{ or } 4\%$$

CHAPTER XX

Stock Exchange Transactions

THE stock jobber always quotes two prices to every security, viz., the price at which he will buy and the price at which he will sell; thus Consols 90¼—90⅜ means that a jobber will buy £100 Consol stock at £90 5s. or sell at £90 7s. 6d., the difference between the two prices being the jobber's profit or *turn*.

When a security is largely dealt in, the margin between these prices is small, the jobber being satisfied because he is doing a large quantity of business and so making quick turns. In the case of a security in which the dealings are few, the difference between the two prices will consequently be wide. The various prices at which business is transacted during the day are quoted in the newspapers under the head of *business done*, and the prices ruling during the last hour of business are called *closing prices*. The *middle* price between the buying and selling prices of the dealer is sometimes quoted for short.

The several modes of dealing in securities are called " for money," " for the account," " options " and " cover " respectively.

Transactions for money are purchases and sales for cash payable at the time of the purchase or sale.

Transactions for the account are purchases and sales which are not paid for or " differenced " until the next so-called " settlement." There are two fortnightly " settlements " every month, and four days are devoted to each settlement.

One of the settlements takes place somewhere about the middle of the month, and the other at the end, and at each

settlement all transactions* have to be closed in one or other of three ways, viz.:

(1) Either the stock must be delivered by the sellers, and taken up and paid for by the buyers, or,

(2) In the case of speculative transactions " differences " (*v.* p. 263) must be paid, or,

(3) The transaction must be " carried over " (*v.* p. 263) to the next settlement.

The *first* of these four days is called " Mining Contango Day " because on that day mining shares are carried over.

The *second* day is called *General Contango Day*, or *Making up day*, because on that day brokers make up the accounts which they have kept with the jobbers during the past fortnight in all other securities except mining shares, and those who wish to continue their transactions to the next settlement must make arrangements accordingly.

The *third* day is called *Ticket day* or *Name day*, because the brokers have to pass tickets to the jobbers on which are stated the names and addresses of those clients who have purchased securities during the fortnight as well as the amount and purchasing price of stock; this is done in order that the transfer deeds (*v.* p. 247) for registered stocks may be made out by sellers for the purchasers; tickets need not be passed for " scrip securities " (*v.* p. 247).

The ticket is really a demand for the due delivery of the securities purchased. Now it often happens that the member to whom this ticket is handed is not in possession of the securities he has agreed to deliver, having bought them during the same account from some other member. In this case he endorses his seller's name on the ticket and passes it on. The ticket thus gets handed on from seller to seller until it ultimately reaches the member whose client actually has the securities and intends to deliver them.

This process of passing tickets is greatly facilitated by the

*Except those in Consols and India Government securities, which have a separate settlement to themselves once a month.

" operation of the *Settlement Department* or *Clearing House* (*v.* p. 82). It is not every member of the Stock Exchange who belongs to the clearing house, nor is it every security that enjoys the benefits of its operations.* But in cases where it can be used, this is the process. On contango day each member prepares a 'clearing sheet' for each security in which he has dealt This sheet may, of course, show many sales and many purchases, each to or from a different member, but all that the member who has prepared the sheet has to concern himself about—in so far as the securities are concerned, and it should be noted that the clearing house only clears securities, not money—is the delivery or receipt of the difference between his sales and purchases; the clearing house does the rest. If, for instance, a member's sheet shows that he has bought a total of £6,000 of a certain stock, no matter in how many different bargains with different members, and has sold £5,000, then instead of a separate ticket having to pass through his hands for each separate bargain, the clearing house discovers from the other sheets some member who has sold £1,000 more than he has bought of the particular stock in question. The passing of the stock is then adjusted by bringing these two members together. The way in which all bargains which come within the clearing house are cleared off can be easily grasped when it is recognized that for every bargain there is both a buyer and a seller. But the clearing house has nothing to do with the adjustment of the different prices at which securities are bought and sold. In fact, all bargains dealt with by the clearing house are passed through the accounts at a fixed price, the 'making up price.' "—(*The Stock Exchange*, Charles Duguid.)

The *fourth* day is called *Settling Day*, or *Pay Day*, or the *Account*. On this day either payments must be made by purchasers and the stock delivered by sellers, or else the " differences " between buying and selling prices must be paid by losers to gainers.

*Mining shares do not clear.

Special Settlements are also frequently arranged for newly issued stock and new companies.

Dealings "for the account" are called *time bargains*, and may be either speculative or non-speculative. The price of securities bought "for money" is generally lower than that of securities bought "for the account." Speculators in time bargains are called "bulls" and "bears."

A *bull* buys securities which he does not intend to pay for, in the hope that the price will rise before the next settlement above the price at which he bought so that he can sell at a profit. If the price goes up at any time before next settlement he sells the stock and obtains the *difference* between his buying and selling prices without ever seeing the securities at all. If, on the arrival of contango day, the price has fallen he must either sell at the lower price and pay the *difference* or he may arrange to "carry over" to the next account, the latter procedure being as follows: The old account is closed and a new one opened, in which the price of the stock is entered at the "making up price," i.e., the "middle price" ruling at a certain fixed hour.

If the jobber allows the carry over he may charge a *continuation rate*, called *contango*,* as compensation for having to carry or "lend" the stock for another fortnight instead of delivering it at once and receiving payment. This charge is added to the "making up" price. The jobber, or his broker acting on his behalf, gives the stock to his banker, as collateral security for a fortnight's loan, and on the banker's estimate of the risk that he is running. and on this loan the jobber has to pay a certain rate of interest (*v.* p. 217), which depends on the current value of money.

Hence, when contango rates are low, on account of an easy money market, bulls speculate freely, and the prices of securities consequently rise, and, conversely, high contango rates resulting from dear money discourage bull speculators and cause the prices of securities to drop (*v.* p. 229).

*So much % on the nominal value of stock, or a certain sum on shares.

If the jobber refuse; to carry over and the speculator neither takes up and pays for the stock nor sells it and pays the difference, the jobber may give or.ers for a *selling out*, i.e., for the sale of the security by auction, in which case the bull is charged with the expenses and loss incurred in addition to the "difference."

Example of "Bull" Operation

Suppose that when some particular stock is quoted 130½—130¾, a bull buys £1,000 stock; he undertakes to pay £1,307 10s. for it (neglecting brokerage (*v.* p. 244) and other charges).*

If, by contango day, the price of the stock rises to 132—132¼ the bull can sell his stock for £1,320, thus making a profit consisting of the "difference" between £1,320 and £1,307 10s., viz., £12 10s.

If, by contango day, the stock fell to 130—130⅛ the sale of the stock would only realize £1,300 and the bull would incur a loss, and have to pay a "difference" of £7 10s. (£1,307 10s., less £1,300.)

A *bear* sells securities which he does not possess and does not intend to deliver, in the hope that the price will fall before the next settlement, so that he can buy them back at a profit. If the price falls at any time before next settlement, he buys the stock back and receives the "difference" between his selling and buying prices without ever seeing the securities. If, on the next contango day, the price has gone up, he must either buy at the higher price and pay the difference, or he may arrange, if the jobber allows it, to "carry over to the next account," in which case the old account is closed and a new one opened in which the price of the stock is entered at the "making up price," and

*The other charges consist of Government stamp duty on transfer deeds, ½%, or on bearer securities 1½%, and on the contract notes 1d., on amounts from £5 to £100, and 1s. on amounts over £100. The stamp duty on American and foreign share certificates is ½%. On bonds dated between 1862 and 1885 1¼%, on bonds dated after 1885 1%. There is also a charge of 2s. 6d. made by the company for registering the transfer.

the bear may be charged a continuation rate called *backwardation* * which is deducted from the "making up" price. The backwardation is made to cover the expenses incurred by the jobber of borrowing the stock, i.e., "taking in stock," for a fortnight.

If the jobber refuses to carry over, and the bear neither delivers the stock nor buys it and pays the difference, the jobber may give orders for a *buying in*, i.e., for the stock to be "bought in" at auction, in which case the bear is charged with the loss and expenses incurred in addition to the "difference."

Example of a "Bear" Operation

Suppose, when some particular stock is quoted 110—110½ a bear sells £1,000 stock for £1,100 (neglecting brokerage, *v.* p. 244), if the price falls before contango day to, say, 108½–108¾, the bear buys the stock for £1,087 10s. and claims the difference of £12 10s. without even having seen the securities.

If the price rises to, say, 110½—110¾, the purchase price will be £1,107 10s., and the bear has to pay the difference, £7 10s., and so closes the account at a loss.

"Contango" and "Backwardation"

"When a 'bull' account is being carried over, that is, when there are more buyers than sellers carrying over, 'contango' is charged; and when a 'bear' account, when there are more sellers than buyers carrying over, 'backwardation' is charged.

"Thus:

'1/8 to ¼ contango,'

means that the 'bear' receives 1/8% from the jobber, while the 'bull' pays ¼%;

'1/8 to ¼% back,'

*So much per cent on stock, and a fixed charge per share.

that the 'bull' receives $\frac{1}{16}\%$ from the jobber and the 'bear' pays $\frac{1}{8}\%$;

'$\frac{1}{16}$ contango to $\frac{1}{8}$ back,'

that the 'bull' pays $\frac{1}{16}\%$ and the 'bear' pays $\frac{1}{16}\%$;

'$\frac{1}{16}$ back to $\frac{1}{16}$ contango,'

that the 'bear' pays $\frac{1}{16}\%$ and the bull pays $\frac{1}{16}\%$;

'at even,'

that there is neither contango nor backwardation to pay;

'$\frac{1}{8}$ contango to even,'

that the bull pays $\frac{1}{8}\%$, while the 'bear' carries over even;

'even to $\frac{1}{8}$ contango,'

that the 'bear' carries over even, and the 'bull' pays $\frac{1}{8}\%$;

'$\frac{1}{8}$ back to even,'

that the bear pays $\frac{1}{8}\%$, while the 'bull' carries over even;

'even to $\frac{1}{8}$ back,'

that the 'bull' carries over even, and the 'bear' pays $\frac{1}{8}\%$."
—(W. G. Cordingley's *Guide to the Stock Exchange.*)

Options

A speculator in "Options" purchases by payment of an agreed sum,* the right either to buy or to sell a certain amount of stock or number of shares at a fixed price† on a certain day.

A "call" option is the right to buy securities on these conditions;

A "put" option is the right to sell securities on these conditions;

A "put and call," or "double" option, is the right to buy or sell securities on these conditions.

*So much per cent on the nominal value of stock, or a fixed charge per share.

†Viz., the price which is quoted at the time of purchasing the option.

A "call of more" is an actual purchase of securities, together with the right to buy a further equal quantity on the above conditions and

A "put of more" is an actual sale of securities, together with the right to sell a further equal quantity on the above conditions.

A "Call Option"

A speculator for the rise, a "bull," may buy a "call" option by paying an agreed premium on some stock which he expects will rise in price.

If at any time before the expiration of the arranged optional period,* the price rises by more than the amount paid for the option plus a broker's commission he may decide to sell the stock at the quoted higher price, and on the last day of the optional period to *exercise* the call, that is, to buy at the (lower) optional price, thereby securing a profit.

If, on the other hand, the price is lower on the last day of the optional period he will abandon the option, and, since he has neither bought nor sold, his *loss is strictly limited* to the amount of the premium paid for the option.

Example of "Call" Option

Paid on December 1, 1% for the "call" of £10,000 "X" stock at the price of 56 up to December 31 account; the option money is thus £100.

On December 10 the quoted price rises to 58 and the operator sells £10,000 stock for £5,800.

On December 31 he claims the optional stock at the contracted price of 56, i.e., for £5,600. As the option money is not returned, the profit is £5,800 less (£5,600 + £100)† = £100.

* Which may be anything between one day and six months hence.

†Neglecting brokerage.

If the price instead of rising were to fall, the option would be abandoned and the buyer would lose his £100 premium only. It will be observed that in the above instance, as the the speculator sold stock on December 10 and will not be able to deliver it until he exercises the call on December 31, he will have to pay the continuation rate at the December 14 settlement. Moreover, if the price were to rise to 59 before December 14, he temporarily pays the "difference" of £100.

In order to safeguard himself against a loss due to the price falling after having purchased a "call" option, a speculator may sell an ordinary "bear," so that if the price falls he can buy in at the lower price, i.e., close the bear, and thus recoup himself for the abandoned option money. And, again, a "call" is sometimes purchased in order to make sure of a profit already earned by having sold a "bear" earlier at a higher price.

A Put Option

A speculator for the fall, a "bear," may buy a "put" option by paying an agreed premium on some stock which he expects is going to fall in price.

If at any time before the expiration of the optional period* the price falls by more than the amount paid for the option plus the broker's commission, he will buy the stock at the quoted lower price, and on the last day of the optional period he will *exercise* the put, i.e., sell at the (higher) optional price, and so make a profit. If, on the other hand, the price is higher on the last day of the optional period he will abandon the option, and, having neither bought nor sold, his loss is limited to the option money.

Example of "Put" Option

Paid on December 1, 1% for the "put" of £10,000 "X" stock at the price of 47 up to January 31, account, the option money is thus £100.

*Which may be anything between one day and six months hence.

On January 27 the quoted price falls to 45 and the operator buys £10,000 stock for £4,500.

On January 31 he applies the put by selling the contracted quantity at 47, i.e., for £4,700. As the option money (£100) is not returned the profit is £4,700 less (£4,500 + £100) = £100.

In order to safeguard himself against a loss arising from a subsequent rise in the price of the stock after having purchased a "put," the speculator may buy an ordinary "bull," so that if the price rises he can sell at the higher price, i.e., close the bull, and so recoup himself for the abandoned option money.

And, again, a "put" may be purchased in order to secure a profit already earned by having previously bought a bull at a lower price.

The "Put and Call"

A speculator may buy a "put and call" by paying about twice as much as the amount paid for a "put" or a "call" singly on some stock whose price is likely to fluctuate unexpectedly either up or down. If at the end of the optional period the price has risen by more than the amount paid for the "put and call" he can secure a profit by exercising the "call" at the contracted price and selling at the advanced price, or if the price has moved sufficiently in the downward direction he can secure a profit by exercising the "put" at the contracted price and buying at the lower quotation. If the price has not moved sufficiently either way to cover the cost of the "put and call" plus brokerage his loss is limited to the latter costs.

Example of "Put and Call"

Suppose on September 1 a speculator buys the "put and call" for £200 in £10,000 "X" stock at the fixed price of £40 for the end of September account.

If on September 30 the price of the stock is £46, the specu-

lator will *sell* at £46 and exercise the "call" at £40, thus making a profit of £400, e.g., adopting Mr C. Castelli's* mode of illustration:

Stock			Cash	
Dr	Cr		Dr	Cr
£	£		£	£
		September 1.—Given 2% for the "put and call" in £10,000 stock end September account at price of 40.		
		September 30.—The stock is now quoted at 46, and £10,000 stock is sold		
	10,000	against the option.		4,600
		September 30.—The right to "call" at 40 is exercised, and £10,000 stock is bought		
10,000		at that price.	4,000	
		September 30.—Paid option money.	200	
		Profit	400	
10,000	10,000		4,600	4,600

If, on the other hand, on September 30 the price of the stock stands at 35 the speculator will buy at 35 and exercise the "put" at 40, thus making a profit of £300, e.g.:

* *Theory of Options in Stocks and Shares.*

Stock			Cash	
Dr	Cr		Dr	Cr
£	£		£	£
		September 1.—Given 2% for the "put and call" in £10,000 stock end September account, price of 40.		
		September 30.—The stock is now quoted at 35, and £10,000 stock is bought		
10,000		against the option.	3,500	
		September 30.—The "put" at 40 is exercised and £10,000 stock is sold at		
	10,000	that price.		4,000
		September 30.—Paid for option.	200	
		Profit	300	
10,000	10,000		4,000	4,000

Example of the "Call of More"

Suppose a speculator on September 1 buys at 1% the "call of more" £10,000 stock at the price of 40 end of September account. Instead of paying option money as such the amount of that option money is *added* on to the price of the stock, thus making the fixed option price 41 instead of 40. £10,000 stock *must* then be brought at 41 and the speculator has the *option* to buy another £10,000 stock at that price if he likes to exercise it.

If the price rises to, say, 43 the speculator will sell £20,000 stock at 43, fulfil his obligation to purchase £10,000 at 41, and exercise the call option in another £10,000 at 41, thus making a profit of £400, e.g.:

Stock			Cash	
Dr	Cr		Dr	Cr
£	£		£	
		September 1.— "Call of more" in £10,000 stock quoted at 40, the stock is		
10,000		bought at 41.	4,100	
		September 22.—The stock rises to 43, and £20,000 is		
	20,000	sold at that price.		8,600
		September 30.—The call of another £10,000 at 41 is		
10,000		exercised.	4,100	
		Profit	400	
20,000	20,000		8,600	8,600

If, on the other hand, the price falls to, say, 39, the speculator abandons the call of the other £10,000 and sells the original £10,000 at 39, thus losing £200, e.g.:

Stock			Cash	
Dr	Cr		Dr	Cr
£	£		£	£
		September 1.—"Call of more" in £10,000 stock quoted at 40, the stock is		
10,000		bought at 41.	4,100	
		September 30.—The stock falls to 39, and £10,000 is sold at that price, the option of calling another		
	10,000	£10,000 being abandoned.		3,900
		Loss		200
10,000	10,000		4,100	4,100

Example of "Put of More"

Suppose a speculator on September 1 buys at 1% the "put of more" £10,000 stock at the price of 45 end of September account. The amount of the option money is *deducted* from the price of the stock in the same way as it was added in the case of the "call of more," thus making the fixed option price 44 instead of 45. The £10,000 stock *must* then be sold at 44, and the speculator has the option of selling a further £10,000 stock at that price.

If the price falls to, say, 40 the speculator will buy £20,000 stock at 40 and exercise the put of another £10,000 at 44, thus making a profit of £800, e.g.:

Stock			Stock	
Dr	Cr		Dr	Cr
£	£		£	£
		September 1.—"Put of more" in £10,000 stock quoted at 45, the stock is		
	10,000	sold at 44.		4,400
		September 22.—The stock falls to 40, and £20,000 is		
20,000		bought at that price.	8,000	
		September 31.—The put of another £10,000 at 44 is		
	10,000	exercised.		4,400
		Profit	800	
20,000	20,000		8,800	8,800

If, on the other hand, the price rises to, say, 46, the speculator abandons the put of another £10,000 and buys the original £10,000 at 46, thus losing £200, e.g.:

Stock			Stock	
Dr	Cr		Dr	Cr
£	£		£	£
		September 1. — "Put of more" in £10,000 stock quoted at 45; the stock is		
	10,000	sold at 44.		4,400
		September 30.—The stock rises, to 46, and £10,000 is		
10,000		bought at that price.	4,600	
		Loss		200
10,000	10,000		4,600	4,600

Of course, the examples which we have here given of option dealing are merely sufficient to explain the meaning of the several terms of options defined at the outset. The different combinations of option dealing with "bull" and "bear" transactions which may be effected are numerous and intricate, and the subject should be studied not only from the point of view of the purchaser of the options, who *gives* for the option in the manner we have been illustrating, but also from that of the seller who *takes* for the option and has to protect himself against loss in the same way as the purchaser.

Cover System of Speculating

Speculation on this plan is principally practised in so-called "bucket shops," i.e., by "outside" brokers, who are not members of the Stock Exchange.

A speculator on the cover system has to make a deposit with the broker, which is called the "cover" or "margin." The "cover" is the limit to the speculator's possible loss, and is at the same time a protection to the broker.

If the speculation proves successful for the operator, the

cover is returned to him in addition to his profit. In some cases the cover is calculated on the market value of the securities, in others on the nominal value.

Example of a "Bull Cover"

Suppose a speculator "bulls" £10,000 of some stock on a 1% cover when the price is 149¾—150. He deposits with the broker 1% of £10,000, i.e., £100, and he controls £10,000 stock, buying it for £15,000.

If at any time the price rises to, say, 151—151¼ he can sell the stock for £15,100 and so make a profit of £100, as he gets back his deposit money plus £100.

If, on the other hand, the stock were to fall, the moment it reached 149—149¼ the broker would sell it because the cover would be exhausted, for the stock would only realize £14,900, showing a loss of £100, which was the amount of the 1% margin.

If the speculator had bought the stock on a 5% cover, i.e., if he had deposited £500 instead of £100, he would have been protected to the extent of a fall of 5 points, and the broker in that case would not have sold the stock (unless instructed by his client) until the price had fallen to 145—145½, when it would have realized £14,500 and shown a loss of the £500 cover.

Example of a "Bear Cover"

Suppose a speculator "bears" £1,000 stock on a 3% cover when the price is quoted 99—99¼.

He deposits £30 and the stock is sold for £990.

If the price falls to, say, 94¼—95, it can be bought for £950 and show a profit of £40. If the price rises to 101¾—102 the cover will have "run off," the stock being bought by the broker for £1,020 and showing a loss of £30.

Of course, if a speculator on "cover" does not close the transaction at the fortnightly settlement he will have to pay continuation rates (*vide* p. 263).

Bull Campaigns and Bear Raids

In his clever little work, entitled *How to Read the Money Article*, Mr Duguid briefly describes the actions of bulls and bears, as expressed in stock market phraseology, as follows:

"Thus we see that a bull is not so much one who has bought as one who is awaiting an opportunity to sell; and that a bear is not so much one who has sold as one who is awaiting an opportunity to buy. As prices rise the bulls come in and sell, and thus depress them; as prices fall the bears come in and buy, and thus support them . . . and we at once understand that apparently contradictory jargon in the money page of the newspaper which tells of the market being depressed by the existence of a big bull account, and of the market being supported by the existence of a big bear account. In the one case a lot of bulls in the market want to sell, in the other case a lot of bears want to buy. . . .

"Of course, it is true that a 'bull campaign,' in which the most favourable views are circulated as to the position of the shares, may succeed in raising their price, and equally true is it that a 'bear raid,' in which all that is unfavourable is disseminated, may depress their price. But the time comes when the 'bull campaign' turns into a 'stale bull account,' that is, when the bulls are anxious to sell, even at a loss, especially when they are 'weak bulls,' people who have purchased far more than they can afford to pay for; and the time comes when the bears find it necessary to 'cover,' that is, to buy back, in fear, the shares they have sold.

"Sometimes, when the shares are scarce, and the market easily manipulated, there is a 'bear corner': the bears are quite unable to obtain the shares, which are run up to enormous prices, the market being what is called 'rigged.'"

CHAPTER XXI

Fluctuations of the Exchange due to Stock Exchange Transactions

THERE are certain stocks, which, being of international reputation, are dealt in on the Stock Exchanges of various countries and are known as "inter-bourse" securities, such, for example, as British, Colonial and foreign Government stocks and bonds, railway stocks, mining companies' shares, insurance companies' shares, telephone and telegraph companies' shares, and so forth.

The international trade in these stocks and shares naturally affects the foreign exchange rates in the same way as does the trade in merchandise, for they are bought in one country and sold in another and paid for by drawing and remitting bills of exchange.

The price of a stock on any particular bourse is determined in the first instance by the interaction of the local supply and demand, and its price as determined in this way in the bourse of one country may at any time be quite different from that which is determined by the dealings on the bourse of another country. This difference of price gives rise to international trading in the stock, just as in the case of any other commodity, inasmuch as it offers a profit to the operators, so when the prices are sufficiently different the operators of one country send orders to buy or sell the same stock in another country.

When a country deals in foreign securities which are expressed in foreign money it has to convert the foreign money into its own currency when it deals in those securities, and for this purpose it adopts a fixed rate of exchange, e.g.:

The London Stock Exchange converts securities expressed:

In American money at	$5	= £1
In French money at	frs 25	
In German money at	mks 20	
In India money at	rs 10	

Take, for instance, the American securities which are quoted on the London Stock Exchange in dollars, but for dealings are converted into English money at the fixed rate of $5=£1.

If the actual rate of exchange (cable transfer) was 5·00 then the London parity of a New York quotation would be the same as the New York quotation, and the New York parity of a London quotation would be the same as the London quotation, but any alteration in the cable transfer would cause a difference in the parities, e.g.:

What would be the London parity of a New York price of Union Pacific Preferred Stock 73¾ if the cable transfer was $5·00?

London $= $100 stock.
$100=73¾ New York quotation
5·00=£1 (cable transfer)
1= $5·00 (fixed rate of conversion in London)

Ans. 73¾

But suppose the cable transfer was 4·86¾, what would the London parity be?

London $= $73¾ New York quotation
4·86¾=£1 (cable transfer)
1= $5 (fixed rate)

Ans. 75·75

i.e., a London quotation of 75¾ would be the English equivalent price of a New York quotation 73¾.

If the actual London quotation was, say, 77⅛ the London price would be said to be above the parity, and provided the difference was great enough there would be scope for

arbitrage dealings, since the stock could be more cheaply bought in New York and sold at a higher price in London. The expenses* of buying in New York must, of course, be added to the New York price, and those of selling in London deducted from the London price. The same results are obtained by calculating the New York parity of the London quotation $77\frac{1}{8}$ (same cable transfer as before), thus:

New York $?=77\frac{1}{8}$ $ London
5=£1 fixed rate
1=4·8675 cable transfer
Ans. 75·08

But the actual New York quotation is $73\frac{3}{4}$, i.e., below parity.

It must also be remarked that the state of the money market is a very important factor in determining the profit to be derived by arbitrage operators when the London prices of American securities are different from the parities. For example, on October 25, 1907, during the American financial crisis, we read in *The Daily Telegraph* that, although American securities on the London Stock Exchange were well above parity, "a curious feature, which few can recall except at the time of the North Pacific corner in 1901, was the cessation of business by the arbitrage dealers, who refused to sell stock here . . . owing to the impossibility of carrying the stock, which in the ordinary course they would buy on the other side against their sales in London."

And, again, we read in *The Economist*, November 2, 1907, "Twice lately has it come to pass that the Stock Exchange firms and others which make a practice of dealing in American shares between the markets of London and New York ceased operations on account of the enormous rates of interest which were charged for daily money in Wall Street. It is all very well to say that in the case of loans contracted for a day at a time the capitalist cares little whether he pays 5% or 50%. Upon £100 the interest does

*Brokerage, duty and stamps.

not certainly work out at much, but Wall Street financiers do not deal in hundreds of pounds, their transactions are on a scale very different from that. Moreover, the mere fact of money being quoted in the vicinity of 100 per cent speaks plainly of the immense difficulty experienced in obtaining supplies at all, and no more forcible way of expressing the need for caution could well be imagined short of actual panic. So far as prices are concerned, the remarkable sight was witnessed of Union Pacifics, for instance, standing in London at $4 above the price which would equal the New York quotation. Arbitrageurs declined to deal at all under such conditions. The disparity itself was paralysing to business. . . . The arbitrage houses let it be known that it did not pay them to trade when their purchases in Wall Street required to be financed with capital for which extortionate rates had to be paid."

Arbitrage between London and Paris

Suppose the fixed rate at which the Paris bourse converts £1 sterling is 25·20 frs=£1, find the London parity of a Paris quotation of consols at 84, when the cheque rate of exchange is 25·20.

£?=£100 stock
100=84 (Paris quotation)
1=25·20 (fixed rate)
25·20=£1 (cheque rate)

Ans. £84

which is the same as the Paris quotation.

But if the cheque rate of exchange is 25·30, the London parity will be less than 84:

£1=£100 stock
100=84
1=25·20
25·30=£1

Ans. 83·66

Find the London parity of a Paris quotation of 4% Hungarians at 93, cheque rate being 25·12.

This stock is expressed in florins (Hungarian), the fixed London parity rate of conversion being 10 florins=£1, the fixed Paris rate being 1 florin=2·50 frs.

£?=£100 stock
100=1,000 florins
100=93 (Paris price)
1=2·50 frs
25·12=£1
Ans. 92·56

Arbitrage between London and Berlin

Canadian Pacific shares are quoted in Berlin minus 4% interest from July 1 and converted at the fixed rate, 4·20 marks=$1.

Find the London parity of a Berlin quotation of 150 end September. Adding 4% of 100 for three months (=1), we read the Berlin quotation as 150+1=151.

If cheque rate is 20·45 the parity will be:

London $=$100 stock
100=151 Berlin quotation
1=4·20 marks (fixed Berlin rate)
20·45=£1 cheque rate
1=$5 (London fixed rate)
Ans. 155·06

These examples will suffice to give the reader some idea of the meaning of parities and arbitrage in stocks and shares.

Arbitrage in Options

As the prices charged by dealers for options depend on the dealer's estimation as to what are the likely future fluctuations of the stock, the length of time for which the option is granted and the state of the market, the prices quoted for this class of dealings in different markets sometimes show

considerable differences and afford good opportunities to the arbitrageur, as, for example, in the case of Canadian Pacifics between London and Berlin and Rio Tintos between London and Paris.

Effect on the Foreign Exchanges

It will now be seen how international operations in stocks and shares affect the foreign exchanges.

Suppose Paris sells Rio Tinto shares in England, that is to say, suppose securities are sold in England for Paris account, bills will be drawn on London against the resulting debt due by London to Paris; this increases the supply of bills on London and tends to turn the Exchange against England in favour of France.

Similarly, if London buys Achisons in New York, that is to say, if securities are bought in New York for London account, bills will be drawn on London against the resulting debt due to New York, and the exchange is influenced against England in favour of New York.

On the other hand, if Paris buys Rio Tintos in London (i.e., if securities are bought in London for Paris account), or if London sells Achison's in New York (i.e., if securities are sold in New York for London account), the demand for bills on London will be increased, and thereby influence the exchanges in favour of London against Paris and New York.

EVERY MAN HIS OWN FINANCIER

APPENDIX

APPENDIX A
FORMS OF CREDIT

THE laws relating to promissory notes, bills of exchange and cheques have been codified in the Bills of Exchange Act, 1882.

Commercial Credit

The word *note* is used of those documents which are promises to pay, and the word *bill* of those which are orders to pay.

In the following description of the different forms of credit the mode of treatment adopted by Mr J. W. Johnson in his *Promissory Notes Drafts and Cheques** has been adopted, notes being treated first, and the differences between bills of exchange and notes, and between cheques and notes being explained afterwards.

Promissory Notes

A promissory note is an unconditional promise in writing made by one person, the debtor, to another person, the creditor, signed by the maker of the promise, engaging to pay either on demand or at a fixed or determinable future time a certain sum in money to, or to the order of, a specified person or to bearer. The following are four specimens of promissory notes.

A Non-negotiable Note

£100 0s. 0d. Manchester, Oct. 26, 1903.

Three months after date I promise to pay to William McCabe *only*, at the City Bank here, the sum of One Hundred Pounds for value received. JOHN SMITH.

*This little book is strongly recommended to the student, especially for its instruction in matters of accounting in connexion with all kinds of bill and cheque transactions.

A Note Negotiable by Indorsement

£387 os. od. Sheffield, Oct. 26, 1903.

Five months after date I promise to pay to the order of W. McCabe the sum of Three Hundred and Eighty-seven pounds, at the London and Counties Bank in Sheffield for value received.

JOHN SMITH.

A Note Negotiable without Indorsement

£50 os. od. Leeds, Oct. 26, 1903.

Thirty days after date I promise to pay to W. McCabe or bearer at my office in Leeds the sum of Fifty Pounds for value received.

JOHN SMITH.

A Note Payable on Demand

£35 os. od. Liverpool, Oct. 26, 1903.

On demand for value received I promise to pay to the order of W. McCabe the sum of Thirty-Five Pounds.

JOHN SMITH.

In each of these examples the person who gives the note is called the *promissor* or *maker*, viz., John Smith; the person in whose favour it is made, viz., W. McCabe, is called the *payee;* if the payee signs his name on the back in order to transfer or guarantee it he becomes the *Indorser*, and the person to whom it is transferred is called the *Indorsee*. Anyone who is in possession of the note may be called the *holder*. When a note is made payable to the payee *or order* the payee must when he transfers it to anyone else indorse it, that is, write his own name on the back of the instrument. Indorsing has two effects* (1) it makes the indorser responsible for payment in the event of the maker failing to pay when the note falls due, i.e., when it *matures* (provided that due and legal notice of non-payment is given the indorser by the holder within twenty-four hours, speaking generally, after the dishonour of the note); in

*J. W. Johnson's *Promissory Notes, Drafts and Cheques.*

other words, if the holder delays giving this notice he loses his legal remedy, and the indorsers are absolved. When the transferor indorses the instrument, he says in effect, "I warrant the payment of the debt, but only if you notify me of its non-payment within 24 hours";* (2) it makes an instrument that is payable " to order " transferable.

There are four forms of indorsement in common use, viz., taking a note payable to the order of W. McCabe as an example:

(1) *Indorsement in Blank,* thus—W. McCabe. This indorsement " has the two effects just described. When a note or bill has been indorsed in blank, any holder may convert the blank indorsement into a special indorsement by writing above the indorser's signature a direction to pay the note or bill to or to the order of either himself or some other person."†

(2) *Indorsement in full, or special indorsement, specifying the indorsee to whose order it is to be payable,* as:

Pay to the order of William Black
W. McCABE.

This " makes the indorser responsible (if legally notified of dishonour), and the instrument will only be negotiable after it has been indorsed by the indorsee, William Black."†

(3) *Qualified Indorsement,* thus:

Without recourse to me
W. McCABE.

This "relieves the indorser of responsibility, and simply makes the instrument transferable"; † but, of course, the indorser will not be able to indorse in this manner unless the indorsee agrees to take the note on such terms.

(4) *Restrictive Indorsement,* thus:

Pay to R. Brown only
W. McCABE.

*H. D. Macleod's *Theory and Practice of Banking.*
†J. W. Johnson's *Promissory Notes, Drafts and Cheques.*

This " makes the indorser responsible (if legally notified of dishonour), but confines the payment to the indorsee."*

When once a note payable to order is endorsed in blank it can be transferred any number of times afterwards without further indorsement. But in actual practice every transferee will probably require the transferor to indorse it, because indorsement is a guarantee of the soundness of the note.

The *order of the liability of indorsers* * is as follows:

If the maker fails to pay the note at maturity the holder must immediately notify all the indorsers, he then has recourse against any one of them as well as against the maker. If the holder, by suing, obtained the debt from the maker, all the indorsers would be discharged of their liability; if the holder recovered from the first indorser, that indorser would have recourse against the maker only, not against subsequent indorsers; if the holder recovered from the second indorser, that indorser would have recourse against both of those who preceded him, viz., the maker and the first indorser. Thus all the indorsers are liable to the holder, but as among themselves each indorser has recourse against all the prior indorsers and is liable to be had recourse against by all subsequent indorsers. If a note is not long enough to hold all the names of indorsers, a slip of paper is attached to it, which is called an *allonge*, so that further indorsements may be made thereon.

Non-negotiable Notes, i.e., notes payable to only one particular individual, can only be transferred by assignment (*v.* p. 63), being assignable instruments only, " they carry with them all offsets and legal defences that may exist between the original parties."*

Notes Negotiable by Indorsement are payable *to order*, and are " thus transferred by the indorsement of the holder (the payee), completed by delivery, the indorser being liable

*J. W. Johnson's *Promissory Notes*.

for payment in the event of the maker failing to pay, provided he (the indorser) has been notified of dishonour by the holder within twenty-four hours."*

Notes Negotiable without indorsement are payable *to bearer*, and are transferable by simple delivery just like a bank-note, which needs no indorsement.

After a note has reached maturity it may still be transferred, but it has ceased to be negotiable because it has lost the attribute of currency; it becomes an assignable instrument, whose transfer follows the law of goods (*v.* p. 63), the assignee taking it "subject to all the equitable rights existing between the parties."*

Notes Payable on Demand

When a note payable on demand has been indorsed it must be presented for payment within a *reasonable time* of the indorsement; if not so presented, the indorser is discharged of liability.

The presentation of a note payable on demand on the day after it has been received is considered to be presentation within a reasonable time.

A Joint and Several Note

£70 0s. 0d. Manchester, Oct. 26, 1903

Six months after date we jointly and severally promise to pay to the order of W. McCabe the sum of Seventy Pounds for value received.

HENRY SMITH
JOHN BROWN
CHARLES LEONARD

The holder of a joint and several note has recourse against all the makers, both individually and collectively, i.e., if any one of the makers fail to pay his due share, the holder can make any one of the others pay the full amount; the party who pays the whole of it has recourse against the others for their portion.†

*J. W. Johnson, F.C.A.

†Unless they have merely signed for his accommodation.

A Joint Note reads, "we jointly," instead of "we jointly and severally." The holder of a joint note cannot sue any one of the makers separately; he is obliged to sue them all.

An Accommodation Note

£150 0s. 0d. Lincoln, Oct. 26, '03.

Three months after date I promise to pay to the order of John Smith the sum of One Hundred and Fifty Pounds for value received.

W. E. BROWN.

This is a note to which a person lends his name as an indorser, without necessarily receiving consideration, so that the maker may borrow money on it, for a bank will not advance on any paper having less than two names upon it. In the specimen here given, "W. E. Brown has obtained John Smith's consent to indorse a note on which he, Brown, purposes to borrow money, or intends to give a creditor who is pressing him for security for a debt. Such a note is not drawn to the order of the lender or creditor, but to that of the indorser, that he may be held as first security after the maker. The payee of a note must be the first indorser."*

An *I.O.U.* differs from a promissory note in that it is only an acknowledgement of a debt, not a promise to pay it. It is not negotiable.

Bills of Exchange

A bill of exchange is an unconditional written order addressed by one person, the creditor, to another person, who is, or appears to be, the debtor, signed by the person giving it, requiring the person to whom it is addressed to pay on demand, or at a fixed or determinable future date, a certain sum of money to, or to the order of, a specified person or bearer.

An *Inland Bill of Exchange* is one which is or on the face of it purports to be (1) both drawn and payable within the

*J. W. Johnson, F.C.A.

United Kingdom, or (2) drawn within the United Kingdom upon some person resident therein.

Any other bill is a Foreign Bill, although a bill drawn on London and payable in London is not spoken of by business men, in London, as a foreign bill.

Most of what has been said of notes applies also to bills (or drafts, as they are often called). There are, however, a number of differences. " A note is a promise to pay, originating with the debtor; a bill of exchange is an order to pay, originating with the creditor and addressed by him to the debtor."*

Inland Bill of Exchange or Draft

£500. London, Jan. 8, '03.

Ten days after sight pay to the order of Tom Jones the sum of Five Hundred Pounds for value received, and charge the same to the account of

To Henry Brown, J. SMITH.
Manchester.

There are three parties to a bill (*v.* specimen): the drawer, the one who draws it, J. Smith; the payee, Tom Jones, the one in whose favour it is drawn; the drawee, Henry Brown, the one on whom it is drawn, who has to " accept " the bill in order to make it binding on him. This he does by writing across the face of the bill, " accepted, January 2, '03." This is called a *general acceptance.* If the drawee refuses to accept it, the bill is said to be dishonoured; but the holder may if he likes take the acceptance of some person other than the drawee, if such a person consents to give it. Such an acceptance is called an *acceptance for honour.*

An acceptance may also be *qualified.* " A qualified acceptance may be (1) conditional, i.e., dependent upon a condition stated in the acceptance; (2) partial, that is, an acceptance to pay a part only of the amount for which the bill is drawn; (3) local, that is, an acceptance to pay at a par-

*J. W. Johnson.

ticular place and there only; (4) qualified as to time, when a bill drawn for three months is accepted for six; (5) an acceptance by some and not by all of the drawees when there are more than one. The holder of a bill may refuse to take a qualified acceptance, and if he does not obtain an unqualified acceptance may treat the bill as dishonoured for non-acceptance."—(H. T. Easton's *Money, Exchange and Banking*.)

An acceptance may be given at any time before the bill becomes due.

" With respect to liability, the acceptor of a bill (Henry Brown, in our specimen) stands in the same position as the maker of a note, and the drawer of a bill (J. Smith) stands in the same position as the first indorser of a note. To hold the drawer responsible for a dishonoured bill, notice of dishonour must be sent to him not later than the next business day. Any drawer or indorser to whom such notice is not given is discharged,"* as in the case of notes.

In the above example, Henry Brown is indebted to John Smith, who desires that he shall pay, at ten days' sight, the amount to Tom Jones, to whom John Smith is indebted. " If the draft were drawn at ten days' date, instead of ten days' sight, there would be no necessity to write the date of acceptance on it. In the latter case the day of maturity would be reckoned from sight, i.e., the day it was presented to the drawee. The drawee of a bill may be both drawer and payee. The acceptor of a bill, by accepting it, engages that he will pay it according to the tenor of his acceptance. His position is the same as that of the maker of a note; he is the primary debtor. The drawer, by drawing it, engages that on due presentment it shall be accepted and paid according to its tenor, and that if it is dishonoured he will compensate the holder or any indorser who is compelled to pay it, provided that the requisite proceedings on dishonour are duly taken. His liability is the same as that of the first indorser of a note. The indorser, by indorsing it,

*J. W. Johnson.

engages that on due presentment it shall be accepted and paid according to its tenor, and that if it is dishonoured he will compensate the holder or subsequent indorser who is compelled to pay it, provided that the requisite proceedings on dishonour are duly taken."*

"There are *three kinds* of bills of exchange, viz., time, sight and demand. *Time bills* are those which are intended to run a certain time after date or after acceptance." The time intervening between the day of drawing and the day of payment may be anything that the drawer wishes from one day upward, and the money cannot be demanded until the bill matures, hence, "like a promissory note, it generally bears interest or, rather, is only bought at such a discount as will enable it to be held to maturity without loss." To gauge the liability of loss, some estimate must be formed of the rate of interest likely to prevail in the meantime, and the value of the bill will thus vary according to a multitude of circumstances (*v.* p. 67). *Demand* and *Sight bills* are, together with those time bills which are within ten days of maturity, called *Short bills.*

Days of Grace

When bills, or notes, are not payable on demand, three days of grace are added to the time of payment as fixed by the bill, or note, and payment cannot be demanded until the third day of grace.

If the third day of grace is a Sunday or public thanksgiving or fast day, the bill is payable on the second day of grace, unless that day is a Bank Holiday, in which case the bill is not payable till the next business day. If the third day of grace is a Bank Holiday, it is payable on the next business day.

Foreign Bills

The law of the country in which any act connected with a foreign bill is done, or is to be done, will govern that par-

* J W. Johnson.

ticular act. Thus, "If a bill drawn in this country is accepted in Germany and made payable in France, English law will govern the drawing, German the acceptance and French the payment."* Foreign bills are generally made out in sets of two or three, as a safeguard against loss in the post. When one of them has been accepted, the other becomes void. If one bill only is drawn, it is called *Sole of Exchange.* The following is a specimen foreign bill of Exchange, drawn in London in a set of three:

First

Exchange for $10,000. London, England,
April 30, 1906.

Three days after sight of this first of exchange (second and third of the same tenor and date unpaid), pay to the order of myself, the sum of Ten Thousand Dollars for value received, and charge the same to the account of

To J. W. Johnson
Belleville,
Canada.

JOHN ROBERTS.

Second

Exchange for $10,000. London, England,
April 20, 1906.

Three days after sight of this second of exchange (first and third of the same tenor and date unpaid), pay, to the order of myself, the sum of Ten Thousand Dollars for value received, and charge the same to the account of

To J. W. Johnson,
Belleville,
Canada.

JOHN ROBERTS.

Third

Exchange for $10,000. London, England,
April 20, 1906.

Three days after sight of this third of exchange (first and second of the same tenor and date unpaid), pay, to the order

*v. Whitfield's *Commercial Series.*

of myself, the sum of Ten Thousand Dollars for value received, and charge the same to the account of

To J. W. Johnson. JOHN ROBERTS.
Belleville,
Canada.

There are three other principal differences between inland and foreign bills, viz.:

(1) " It is a very common thing for a bill to be drawn at one or more ' usances.' The term ' usance ' signifies customary time, that is, the time of payment as fixed by custom, having regard to the place where the bill is drawn and the place where it is payable. The true date of payment is calculated by adding the three days of grace to the usance.

(2) " It is necessary for an inland bill to be written upon duly stamped paper, whenever the duty exceeds one penny. There is no necessity to stamp a foreign bill before it is issued. It cannot, however, be negotiated within the United Kingdom until the stamp has been affixed.

(3) " If a foreign bill is dishonoured, the fact must be noted by a Notary-Public. It is also necessary for a declaration in writing to be drawn up as to the dishonour."—(H. T. Easton's *Money, Exchange and Banking.*)

Accommodation Bills

Accommodation bills are those to which any person puts his name, either as drawer, acceptor or indorser, for the purpose of standing security for its payment. The drawer of an accommodation bill is usually the primary debtor, just as the maker of an accommodation note; but while in the latter case it is evident to a banker, who discounts it, that it is the maker who is the primary debtor, it is not evident in the case of an accommodation bill that the principal debtor is the drawer, because on an ordinary bill the primary debtor is the acceptor, and there is nothing to show that the accommodation bill is not an ordinary bill.

" In accommodation bills the person for whose accommodation the drawing, indorsing and accepting is done, is bound to provide funds to meet the bill or indemnify the person who lends his name. Suppose A gets ten of his friends to accommodate him with their names as acceptors, and discounts these bills with his banker, it is A's duty to provide the funds to meet every one of the ten bills. There is, in fact, only one principal debtor and ten securities. These ten acceptors are ignorant of each other's proceedings, and they make no provision to meet their bill. If any one of them is called to meet his bill, he has an immediate remedy against the drawer. In the case of real bills the bank has ten real principal debtors, who would each take care to meet his own acceptance, and only one security. In the case of accommodation bills, the bank has only one real principal debtor to meet the acceptances of ten. Thus, there is only one real principal debtor and ten securities. Futhermore, if one of the ten principal debtors fails to meet his bill, the bank can safely press the drawer, because it will not affect the position of the other nine acceptors. But if the drawer of the accommodation bill fails to meet any one of the ten acceptances, and the bank suddenly discovers it is an accommodation bill, and is under large advances to the drawer, it dare not, for its own safety, press the acceptor, because he will have immediate recourse to the drawer as his debtor, and the whole fabric will probably tumble down like a house of cards."—(H. D. Macleod's *History of Economics.*)

Banking Credits

" The essential business of a banker," says Mr Macleod, " is to create and issue credit to circulate as money. People sell their money to a banker in exchange for the banker's credit, and the banker makes a profit thereby. When you deposit money in a bank, that money ceases to be yours, it belongs to the banker who bought it from you by giving you in exchange for it an equal amount of credit in his books, i.e., he creates rights of action against himself to an equal

amount, giving his customers the right to demand back an equal amount of money at any time they please, and also the right to transfer their rights of action to anyone else they please, exactly as if they were money, and the banker agrees to pay the transferee the same as his own customer. This right of action, credit, or debt entered in the banker's books is, in banking language, technically termed a 'deposit.'" Now these deposits or rights of action against the banker are transferred by means of negotiable instruments called bank-notes and cheques. By means of the bank-note, the banker promises to pay the metallic money to his customer or bearer, and by means of a cheque the customer orders the banker to pay the metallic money to anyone he, the customer, wishes.

Bank-Notes

A bank-note is a promissory note issued by a banker payable on demand to the bearer.

Since it is negotiable without indorsement, the failure of the banker to pay it involves no liability to those through whose hands it has passed, and it therefore circulates just like metallic money.

Cheques

No. $\frac{0\ 40}{2\ X}$ 067930 London, October 24, 190

BARCLAY AND COMPANY, LIMITED
1, Pall Mall, East.

Pay Tom Jones.....or order
One Hundred Pounds only.
£100.

HARRY BROUGH.

From the specimen here given, we gather that Harry Brough has a credit or deposit in the Pall Mall offices of the Bank of Messrs Barclay and Company, Limited, and, de-

siring to pay Tom Jones a debt he owes him, gives him a cheque for £100.

The rules governing bills of exchange are applicable also to cheques, but there are three principal differences: *(1) While a bill of exchange has to be accepted in order to make the acceptor liable, a cheque is never accepted by a banker, so that he is not liable to the holder of the cheque; (2) whereas the drawer of a bill is discharged if the bill is not duly presented, the drawer of a cheque is not so discharged unless the banks fails, in which case the holder must put in his claim against the bank; (3) if a bill is not met, the holder must give notice of dishonour, but this is not necessary in the case of a dishonoured cheque.

A cheque, payable to bearer, is negotiable by simple delivery; one payable to order is negotiable by indorsement and delivery. A cheque should not be indorsed until presented for payment, because, if stolen or lost, it can, if indorsed, be negotiated by the thief or finder. It should be indorsed in blank when presented for payment. If it is desired to transfer a cheque to some one else, it is better to indorse it in full, because, if indorsed in blank, it becomes payable to bearer. A cheque payable to bearer is just like a bank-note. Like any ordinary bill of exchange, a cheque may be either foreign or inland. When it is desired to make a cheque negotiable *only through a bank*, the cheque must be *crossed*.

The law relating to crossed cheques is the Bills of Exchange (Crossed Cheques) Act, 1906.

Crossing is a protection against fraud, and in no way affects the negotiability of a cheque, for no one but a banker can present it for payment to the bank on which it is drawn, hence, no one can obtain payment unless he keeps a bank account, and that person can consequently be traced. A cheque may be crossed either " generally " or " specially":

(1) *Generally*, when it bears on its face (1) the words " and Co." between two parallel transverse lines, either with or

*v. H. T. Easton's *Money Exchange and Banking*.

without the words, "not negotiable," or (2) simply two parallel lines, either with or without the words, "not negotiable." On receipt of a cheque crossed generally, the payee can enter between the "crossing" the name of his banker and send it to him for collection; or he might enter nothing between the crossing, in which case, if the cheque were payable to bearer, its circulation would not be hindered by the crossing.

(2) *Specially*, when it bears across its face, in addition to the above, the name of a bank, either with or without the words, "not negotiable." The words, "not negotiable," on a cheque deprive it of the attribute of currency and make it an assignable instrument merely, so that the holder in due course has no better title than that which was enjoyed by the person from whom he received it; but the banker who either collects or pays it is fully protected provided he collected or paid it in good faith.

It is not necessary that the party who crosses a cheque should be the drawer. It may be crossed by any holder, either specially or generally, and when a cheque is crossed specially it may be crossed specially again to another bank by the bank to which it was crossed.

Letter of Credit is described by J. W. Johnson, from the Canadian point of view, as follows:

"A merchant on this side of the Atlantic (Canada) going to England to purchase goods, and wishing to pay spot cash and secure the cash discount as well as save the cost of remitting, will carry with him a letter of credit. The letter of credit is issued by his banker in Canada upon a bank, say, in London, and authorizes the bank in London to cash cheques or drafts of the payee named in the letter of credit up to the limit stated in it. Or a letter of credit might convey from a bank to its agent in another country, as in the example below, authority to cash drafts up to the limit named, of one individual upon another, the individual upon whom the

drafts are to be drawn being a depositor of the bank that issued the letter of credit.

" Colonial Bank, Barbados, W.I.
" Jan. 26, 1903.

" Messrs Brown Brothers & Co.,
" Agents, Colonial Bank,
" New York.

" Dear Sirs,

" You are hereby authorized to cash the gold drafts, without deduction, of Mr Belfield Grannum, on Mr E. F. Grannum of this island, at thirty days' sight, to the extent of $520, say, Five Hundred and Twenty Dollars, this credit to remain in force for three months from date.

" The Messrs Grannum's signatures were sent you last year.

" I am, Dear Sirs,
" Yours faithfully,
" F. J. HOWELL,
" Manager.

" This places Mr Grannum in the position to obtain funds from Brown Bros., New York, to the amount named on the credit of the Colonial Bank, Barbadoes.

" *Circular Letters of Credit* are issued by some banks for use by travellers. They are more convenient than a bill of exchange, because money can be obtained upon them in various countries. The identification of the person to whose order a circular letter of credit is drawn is usually established by his signature on the margin, certified by the banker who issued it. Where he is an entire stranger, to prove his identity, he has only to submit his signature for comparison with that which he signed upon the margin."

A Blank Credit is the privilege granted by one person to another to draw on him to a certain extent at any time in the way of an accommodation.

APPENDIX B

Interest and Discount

INTEREST and discount are compensation given for the use of loanable capital.

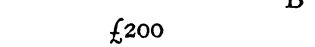
The rate of interest and discount is the ratio of the amount of compensation to the amount of capital borrowed for a given length of time. It is always expressed in terms of 100 units of the money of account borrowed for one year. Thus, 5% means that the rate of interest or discount is £5 for £100 borrowed for one year.

Suppose A borrows £200 for, say, one year, of course the lender will want some security that the £200 will be repaid at the end of the year; but, over and above that, he will want the usual compensation for the loan. Let the compensation be at the rate of 5%—5% on £200 for one year is £10.

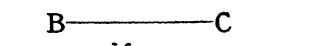
If the lender agrees to defer the receipt of this £10 until the end of the year when he is to receive back his £200 as well, the £10 compensation is called *interest.*

Thus, since the lender lends £200 and at the end of the year receives £210, A must give him a promissory note for £210 payable in one year.

Let A B represent the amount of £200 borrowed for one year at 5%, and let us call it the *Principal* or *Present Worth.*

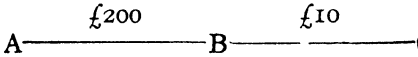


Let B C represent the £10 *Interest* on this principal or present worth for the year.



At the end of the year the borrower has to pay A B

plus B C, that is, A C, or the amount of the bill, viz., £210.



Let A C be called the *sum due.*

Now suppose some one were willing to discount this bill of £210, and that he was content to make a profit at the ordinary rate of interest, he would give £200 in exchange for the bill and at the end of the year the debtor would pay him £210. In discounting the bill in this manner the discounter would be said to have charged *true* or *algebraical discount.*

Algebraical discount is thus the interest of the present worth, and is calculated as follows:

First find the present worth of the sum due and then deduct the present worth from the sum due, the result being the algebraical discount.

Since at 5% for one year £100 is the present worth of £105, the present worth of £210 is:

$$105 : 100 :: 210 : x$$

$$x = \frac{100 \times 210}{105} = \underline{£200}$$

Then £210 − £200 = £10 algebraical discount.

A short method of finding algebraical discount is exemplified by the following rule: Divide £100 by the rate and add the number of years to the quotient, divide the sum due by the result and multiply by the number of years:

£100 ÷ 5 = £20, + 1 = £21; £210 ÷ £21 = 10; 10 × 1 = £10

If, however, the bill were discounted by a banker, the discount charged would not be algebraical discount, it would be *banker's discount,* which is a heavier charge.

Banker's discount is the interest of the sum due, e.g.,

$$\frac{5}{100} \times £210 = £10\ 10s. = \text{banker's discount.}$$

Thus, the banker advances only £199 10s., and at the end

of the year receives £210, so that he earns interest at a higher rate than 5%.

For since the rate of interest $= \frac{\text{Interest} \times 100}{\text{Principal} \times \text{Time}}$

the rate of interest earned by the banker is:

$$\frac{10{\cdot}5 \times 100}{199{\cdot}5 \times 1} = 5{\cdot}263\%$$

Since bankers' discount is the interest of the sum due, viz., £10·5, and algebraical discount is the interest of the present worth, viz., £10, bankers' discount exceeds algebraical discount by the interest on the algebraical discount, viz., $\frac{5}{100} \times \frac{1}{20} = 10s.$

"When the rate of discount is small, as in the above instance, the difference between the profits of interest (= algebraical discount) and bankers' discount is not very great, but as the rate of discount increases the profit increases at a very rapid ratio" (H. D. Macleod) e.g.:

Interest on £100 at 20% is a profit of 20%, but discount on £100 at 20% is a profit of 25%, or a difference of 5%; interest on £100 at 50% is a profit of 50%, but discount on £100 at 50% is a profit of 100%, or a difference of 50%.

APPENDIX C

THE following is a specimen of the Bankers' Clearing Returns as quoted by *The Economist:*

BANKERS' CLEARING RETURNS

The following figures from the official returns show the amount of bills and cheques cleared at the Bankers' Clearing House. Special days are given separately, together with the total increase or decrease to date in each ease:

Weeks Ending	Town Clearing	Country Clearing	Total
Date 1906	£	£	£
January 1 to July 4	6,062,961,000	503,927,000	6,566,888,000
July 11	204,565,000	23,260,000	227,825,000
July 18	235,627,000	21,443,000	257,070,000
July 25	186,480,000	18,107,000	204,587,000
August 1	254,191,000	18,189,000	272,380,000
August 8	177,468,000	17,682,000	195,150,000
August 15	231,361,000	20,048,000	251,409,000
August 22	191,226,000	17,808,000	209,034,000
August 29	186,444,000	15,381,000	201,825,000
Total, 1906	7,730,323,000	655,845,000	8,386,168,000
Corresponding total 1905	7,446,510,000	606,927,000	8,053,437,000
Increase or Decrease in 1906	+ 283,813,000	+ 48,918,000	+ 332,731,000
	= 3·8%	= 8·06%	= 4·13%
Gross total in 1905	11,355,250,000	932,685,000	12,287,935,000
Gross total in 1904	9,677,988,000	886,209,000	10 564,197,000
Increase or decrease in 1905	+ 1,677,262,000	+ 46,476 000	+ 1,723,738,000
	= 17·33%	= 5·25%	= 16·32%

BANKERS' CLEARING RETURNS (*continued*)

SPECIAL DAYS

Stock Exchange Pay Days		Consols Pay Days		"Fourths" of the Month	
Date 1906	£	Date 1906	£	Date 1906	£
January 11 to April 11	617,382,000	Jan. 4	53,923,000	Jan. 4	53,923,000
April 26	75,840,000	Feb. 1	54,986,000	*Feb. 3	32,515,000
May 11	91,626,000	Mar. 1	51,462,000	*Mar. 3	38,162,000
May 31	89,631,000	April 4	60,005,000	April 4	60,005,000
June 14	65,180,000	May 4	55,291,000	May 4	55,291,000
June 28	77,829,000	June 1	54,305,000	†June 5	53,175,000
July 12	72,102,000	July 4	52,428,000	July 4	52,428,000
July 27	71,767,000	Aug. 1	53,473,000	Aug. 4	34,85[illegible],000
August 15	85,587,000				
Total, 1906	1,246,944,000	..	435,873,000	..	380,354,000
Corresponding total, 1905	1,282,097,000	..	434,146,000	..	315,664,000
Increase or decrease in 1906	— 35,153,000	..	+ 1,727,000	..	+ 64,690,000
	= 2·74%	..	= 0·39%	..	= 20·49%
Gross total in 1905	2,070,622,000	..	638,783,000	..	497,070,000
Gross total in 1904	1,536,586,000	..	597,160,000	..	445,281,000
Increase or decrease in 1905	+ 534,036,000	..	+ 41,623,000	..	+ 51,789,000
	= 34·75%	..	= 6·97%	..	= 11·63%

*The "fourth" fell on Sunday. †The "fourth" fell on Bank Holiday.

PROVINCIAL CLEARING RETURNS

	1906	1905	Inc. or Dec.	
	£	£	£	%
MANCHESTER—				
Jan. 1 to Aug. 18. .	184,227,300	165,680,600	+ 18,546,700	11·20
Week ending Aug. 25	4,356,700	4,240,600	+ 116,100	2·74
Total to date . .	188,584,000	169,921,200	+ 18,662,800	10·98
LIVERPOOL— . .				
Jan. 1 to Aug. 18 . .	120,392,200	123,475,600	— 3,083,400	·49
Week ending Aug. 25	2,867,300	2,970,700	— 103,400	3·48
Total to date . .	123 259,500	126,446,300	— 3,186,800	2·52
BIRMINGHAM—				
Jan. 1 to Aug. 18 . .	37,046,200	35,293,700	+ 1,752,500	4·96
Week ending Aug. 25	818,100	828,600	— 10,500	1·27
Total to date . .	37,864,300	36,122,300	+ 1,742,000	4·82
NEWCASTLE-ON-TYNE—				
Jan. 1 to Aug. 18* .	34,381,700	44,252,600	— 9,870,900	22·30
Week ending Aug. 25	1,085,200	992,300	+ 92,900	9·36
Total to date . .	35,466,900	45,244,900	— 9,778,000	21·61
BRISTOL—				
Jan. 1 to Aug. 18 . .	19,898,700	19,701,300	+ 197,400	1·0
Week ending Aug. 25	516,500	519,400	— 2,900	0·5
Total to date . .	20,415,200	20, 220, 700	+ 194,500	0·9

*From May 27, 1905, the Newcastle figures comprise town clearings only, the Clearing Association having ceased to exist.

APPENDIX D

EXPLANATION OF LONDON COURSE OF EXCHANGE, OCTOBER 18, 1907

Quotations in English Currency

England gives the variable English price to the undermentioned places	Usance	Prices quoted in Berlin for		Equivalent amount of Foreign money purchasable
	Long Bills	Trade Paper	Bank Paper	
St Petersburg	3 months	24⅝d.	24⅜d.	1 rouble
Moscow	3 months	24⅝d.	24⅜d.	1 rouble
New York	60 days	48 1/16d.	48 1/8d.	1 dollar
Lisbon and Oporto . . .	3 months	49 1/16d.	50 1/16d.	1 milreis
Madrid & Spanish bank places	3 months	41¾d.	42d.	5 pesetas
Calcutta and Bombay . .	30 days sight	16½d.		1 rupee

Quotations in Foreign Currency

England receives the variable Foreign prices from the undermentioned places	Usance	Prices quoted in Foreign currency		Denomination of Foreign prices	Equivalent English money given
	Long Bills	Bank Paper	Trade Paper		
	Short	Sight	Demand		
Amsterdam & Rotterdam	Short	12·1	12·1¼	Florins	£1
Amsterdam & Rotterdam	3 months	12·4½	12·5	Florins	£1
Antwerp & Brussels . .	3 months	25·51¼	25·56¼	Francs	£1
Hamburg	3 months	20·75	20·79	Marks	£1
Berlin & German Bank places	3 months	20·75	20·79	Marks	£1
Paris	Cheques	25·12½	25·15	Francs	£1
Paris	3 months	25·37½	25·42½	Francs	£1
Marseilles	3 months	25·37½	25·42½	Francs	£1
Switzerland	3 months	25·47½	25·52½	Francs	£1
Austria	3 months	24·40	24·44	Crowns	£1
Italian Bank places . .	3 months	25·42½	25·47½	Lire	£1
Copenhagen	3 months	18·53	18·57	Crowns	£1
Christiania & Stockholm	3 months	18·54	18·58	Crowns	£1

APPENDIX E

Issue of Treasury Bills

THE following is a quotation from one of the daily papers: "Tenders for £1,000,000 Treasury bills were opened to-day at the Bank of England. The total applied for was £1,961,300. The amount offered was allotted in bills of six months' date. Tenders at £97 10s. 0d. will receive about 50%, above in full. The average rate per cent was £4 17s. 4·8d."

This means that £1,000,000 of Treasury bills were offered to the public for sale on the tender system. That is to say, the Treasury does not fix the price at which the bills are to be sold, but puts them up to auction and sells to the highest bidders.

Among those who tender are certain well-known syndicates which are well able to estimate the state of the money market, and hence to offer such a price as will not be higher than is necessary to secure as much as they want of the total amount offered at a reasonable rate of discount.

The total tenders amounted to £1,961,300 (*vide* explanatory table below).

As the total amount offered was only £1,000,000 tenders for £961,300 get nothing at all, and, of course, those were the tenders at the lowest price, i.e., at the highest rate of discount.

Those who offered the highest price, viz., £99 (*vide* table below) received all they applied for, viz., £10,000. The same applies to those who offered £98 and received £100,000. But of the £1,780,000 tenders at the price of £97 10s. only 50% or £890,000 of bills were allotted because there were no more bills left.

As the total yield to the Treasury was £975,650, and the

total bills issued amounted to £1,000,000, the average price of the bills per cent obtained by the Treasury was:

£1,000,000 : £975,650 :: £100 : x, which is £97 11s. 3·6d.

and that is an average rate of discount of £2 8s. 8·4d. per cent six months (the duration of the bills), or twice as much per cent per annum, viz., £4 17s. 4·8d. This indicates an expectation in the market that the rate of interest will be on an average 4½% for the next six months.

Amount tendered for	Prices tendered	Rate of Discount	Amount allotted	Yield to Treasury
£10,000	£99	1 %	£10,000	£ 9,900
100,000	98	2 %	100,000	98,000
1,780,000	97½	2½%	890,000	867,750
50,600	97¼	2¾%	nil	nil
20,600	97¼	3 %	nil	nil
£1,961,300			£1,000,000	£975,650

The newspaper then goes on to give a list of outstanding Treasury Bills, i.e., bills which have not yet reached maturity. From this list the future influence of the Government on the money market can be foretold.

Amount	Date of Maturity 189—	Duration months	Average rate of allotment per cent.
£2,000,000	July 12	6	£2 10 8·5
2,000,000	Aug. 14	6	2 13 8·4
1,500,000	Aug. 26	6	2 11 5·19
1,000,000	Sept. 16	6	3 2 2·18
2,410,000	Nov. 27	6	3 3 0·387
2,000,000	Dec. 23	6	4 12 6
1,000,000	Dec. 30	6	4 17 4·8
£11,910,000			

APPENDIX F

Comparison of Two Weekly Returns of the New York Associated Banks

	Sept. 1	*Sept.* 8
Assets		
*Specie	£36,350,000	£33,868,000
*Legal tenders	16,328,000	15,526,000
Loans and discounts	212,748,000	210,354,000
Liabilities		
Circulation	9,208,000	8,984,000
Net deposits (including U.S. Govt deposits)	208,412,000	202,842,000
U.S. deposits	2,062,000	2,068,000
*Reserve (specie and notes)	52,678,000	49,394,000
Legal reserve (25% of net deposits)	52,103,000	50,710,000
Excess of actual reserve	£575,000	
Deficit of actual reserve		£1,316,000

The reserve consists of the total of the items specie plus legal tenders, and the legal reserve is 25% of the item net deposits. In the return of September 1 the actual reserve was £575,000 in excess of the legal reserve, and on September 8 it was £1,316,000 below the legal reserve.

The diminutions in the net deposits is shown to be due to a substantial contraction of loans and discounts on the one hand, and to the demand by the country banks for notes and specie out of the reserve on the other.

"The New York statement is usually, however," says *The Economist* (Sept. 15, 1906), "a very misleading document,

because it takes no account of trust company movements, whi\h are a very considerable factor; also because it gives averages fo:- a week instead of exact totals at a given date; and, finally, because borrowing abroad in anticipation of expo•t busine.ss has, of course, no record in bank statements" (*v.* p. 214).

The net deposits consist of all the total deposits less certain specified liabilities, among which may be enumerated amounts due to other national banks, state banks, th- United States, trust companies, savings banks. etc.

APPENDIX G

Comparison of Two Weekly Bank of England Returns

Issue Department

Account for the Week ended August 22, 1906

Notes issued .	£54,828,315	Government Debt . . .	£11,015,100
		Other Securities	7,434,900
		Gold coin and bullion . .	36,378,315
	£54,828,315		£54,828,315

Banking Department

Proprietors' capital. .	£14,553,000	Government securities .	£15,972,452
Rest	3,616,790	Other securities	28,723,542
Public deposits .	11,145,651	Notes . . .	25,499,040
Other deposits .	42,236,913	Gold and silver coin . . .	1,419,095
Seven-day-and other bills . .	61,775		
	£71,614,129		£71,614,129

Issue Department

Account for the Week ended August 29, 1906

Notes issued .	£55,568,610	Government debt . .	£11,015,100
		Other securities	7,434,900
		Gold coin and bullion . .	37,118,610
	£55,568,610		£55,568,610

Banking Department

Proprietors' capital. .	£14,553,000	Government securities. .	£15,972,452
Rest	3,550,151	Other securities	28,738,425
Public deposits .	10,565,331	Notes . . .	26,361,980
Other deposits .	43,751,396	Gold and silver coin . . .	1,396,155
Seven-day-and other bills .	49,134		
	£72,469,012		£72,469,012

Let us first ascertain the extent to which the " internal " circulation of gold altered during the week that intervened between the two publications.

The total of the foreign movements of gold during the week, published in the daily papers, were as follows:

Arrivals		*Withdrawals*	
Friday	£300,000	Thursday . . .	£20,000
Tuesday . . .	94,000	Tuesday . . .	11,000
Wednesday. . .	151,000	Wednesday . .	60,000
		Net influx . .	454,000
Total . . .	£545,000	Total . . .	£545,000

Now the total stock of gold coin and bullion in the two departments was, on August 22, £37,797,410, and on August 29 it was £38,514,765, i.e., there was an increase of £717,355 during the week.

Of this increase £454,000 came from abroad, as shown by the above statement of arrivals and withdrawals, so the balance, viz., £263,355 must represent a reduction of the internal circulation.

Next as to the " active circulation " (notes):

The Active circulation on August 22 was . .		£54,828,315
	Less	25,499,040
		£29,329,275

The active circulation on August 29 was . .	£55,568,610
Less	26,361,980
	£29,206,630

i.e., there was a reduction in the active circulation of £122,645.

In what way could these changes in the "active" and "internal" circulation and in the foreign movements of gold affect the reserve and other items of the return?

The reserve on August 22 was	£26,918,135
The reserve on August 29 was	27,758,135

which is an increase of £840,000, and that is exactly the total of

	(1) Influx of foreign gold . .	£454,000
plus	(2) Decrease in internal circ. .	263,355
plus	(3) Decrease in active circ. . .	122,645
		£840,000

(1) The influx of £454,000 from abroad might increase the reserve and other deposits of August 22 to—Other deposits, £42,690,913; gold and silver coin, £1,873,095. (2) The decrease of £263,355 in the internal circulation of gold might further increase other deposits and reserve to—Other deposits, £42,954,268; gold and silver coin, £2,136,450. (3) The decrease in the active circulation of £122,645 might increase notes (reserve) and other deposits to—Other deposits, £43,076,913; notes, £25,621,685.

On looking at the return of August 29, however, we see that the gold and silver in the reserve was not £2,136,450 but £1,396,155, i.e., *less* by £740,295, and the notes (reserve) were not £25,621,685 but £26,361,980, i.e., *more* by £740,295. How does this difference arise? By the transfer of gold from the banking department to the issue department and of notes from the latter to the former to the extent of £740,295. This would increase the "notes issued" and "gold coin and bullion" of the issue department to £55,568,610 and £37,118,610 respectively, and would bring the figures of the

notes and gold in the banking department to £26,361,980 and £1,396,155 respectively, as we find them in the return of August 29.

So much for the reserve, but the other deposits of the return are not what we have calculated above, and there are also differences in the other items to be explained. Some of these differences can more or less be accounted for by taking into consideration the known movements of money in the money market during the week. For example: We know that the Government repaid some Treasury bills, which would reduce public deposits and increase other deposits, but we also know that there were some Treasury receipts, which to some extent counterbalanced that repayment of Treasury bills, and left a net decrease in public deposits and (let us assume) increase in other deposits of £580,320, thus bringing the figures to: Public deposits, £10,565,331; other deposits, £43,657,233.

Loans to the market by the Bank would account for the increase in other securities of £14,883, and a similar increase of the other deposits, and so bring the figures to—Other deposits, £43,672,116; other securities, £28,738,425.

The only other items remaining open to conjecture are a further increase in the other deposits of £79,280 (viz., £43,751,396 less £43,672,116) and a corresponding decrease in the total of rest (£66,639) plus seven day and other bills (£12,641).

If we suppose the payment by the Bank of the seven day and other bills to have increased other deposits to £43,684,757, and reduced the figures of the seven day bills to those of the return, the only alteration in the return still remaining to be accounted for is an increase of £66,639 in the other deposits at the expense of the "rest."

The proportion of reserve to liabilities is ⅛ higher on August 29 than it was on August 22, being 51%.

APPENDIX H

Specimen of Government Accounts

THE Government account is published in *The Economist* weekly. The following is the account for the week ending August 18, 1906.

PUBLIC INCOME AND EXPENDITURE

REVENUE AND OTHER RECEIPTS

	Estimate for the Year 1906-7.	RECEIPTS Apl 1, '06, to Aug. 18, 1906.	RECEIPTS Apl 1, '05, to Aug. 19, 1905.	RECEIPTS Week ending Aug. 18, 1906.	RECEIPTS Week ending Aug. 19, 1905.
	£	£	£	£	£
Balances in Exchequer April 1:					
Bank of England	..	9,334,212	6,352,909	..	..
Bank of Ireland	..	1,117,275	1,077,369	..	..
	..	10,415,487	7,430,278	..	..

REVENUE

	£	£	£	£	£
Customs . .	32,230,000	12,843,000	12,811,000	620,000	691,000
Excise . .	30,200,000	10,715,000	10,950,000	747,000	863,000
Estate, &c., Duties . .	13,200,000	6,074,000	5,358,000	115,000	80,000
Stamps . .	8,150,000	2,888,000	2,954,000	82,000	52,000
Land Tax and House Duty	2,650,000	340,000	400,000	..	10,000
Property and Income Tax	31,500,000	4,656,000	4,680,000	13,000	14,000
Post Office .	17,395,000	5,250,000	5,060,000	150,000	150,000
Telegraph Service . .	4,350,000	1,570,000	1,500,000	..	..
Carried forward	139,675,000	44,336,000	43,713,000	1,727,000	1,860,000

PUBLIC INCOME AND EXPENDITURE

REVENUE & OTHER RECEIPTS—*Cont.*

	Estimate for the Year 1906-7.	RECEIPTS— Apl 1, '06, to Aug. 18, 1906.	RECEIPTS— Apl 1, '05, to Aug. 19, 1905.	RECEIPTS— Week ending Aug. 18, 1906.	RECEIPTS— Week ending Aug. 19, 1905.
	£	£	£	£	£
Brought ford	139,685,000	44,336,000	43,713,000	1,727,000	1,860,000
Crown Lands	480,000	150,000	140,000	..	..
Receipts from Suez Canal Shares and Sundry Loans . .	1,100,000	680,842	674,573	..	..
Miscellaneous	1,500,000	679,534	584,025	59,899	55,000
*Revenue paid into the Exchequer .	142,755,000	45,846,376	45,111,598	1,786,899	1,915,000
Total, including Balance	..	56,297,863	52,541,876	..	..
OTHER RECEIPTS					
Repayment of Advances for Bullion .	..	450,000	250,000	50,000	..
Under Telegraph Acts, 1892 to 1904	..	300,000	100,000	..	..
Under Uganda Railway Acts, 1896 to 1902 . .	..	..	191,592	..	..
Under Naval Works Acts, 1895 to 1905	..	965,000	..	..	..
Under Military Works Acts, 1897 to 1901 . .	..	..	410,408	..	..
Under Land Registry (New Buildings) Act, 1900 . .	..	..	13,000	..	..
Carried ford	142,755,000	58,012,863	53,506,876	1,836,899	1,915,000

PUBLIC INCOME AND EXPENDITURE

REVENUE OTHER & RECEIPTS—*Cont.*

	Estimate for the Year 1906-7.	RECEIPTS		RECEIPTS	
		Apl 1, '06, to Aug. 18, 1906.	Apl 1, '05, to Aug. 19, 1905.	Week ending Aug. 18, 1906.	Week ending Aug. 19, 1905.
	£	£	£	£	£
Brought ford		58,012,863	53,506,876	1,836,899	1,915,000
Under Public Buildings Expenses Act, 1903 .	..	25,000	35,000	..	..
Under Public Offices Site (Dublin) Act, 1903 .	..	10,000	..	..	..
By Issue of Exchequer Bonds: Under the Finance Act, 1905	..	..	8,850,000	..	..
Temporary advances, Deficiency	..	1,000,000	..	..	..
Temporary Advances, Ways and Means (Treasury Bills) .	..	500,000	.	..	..
Total .	..	59,547,863	62,391,876	1,836,899	1,915,000
*Revenue paid into the Exchequer, as above .	142,755,000	45,846,376	45,111,598	..	..
Revenue paid to Local Taxation Accounts, &c.:					
Customs .	165,000	64,915	58,629	..	..
Excise .	5,321,000	1,346,689	1,358,851	278,000	278,000
Estate, &c. Duties .	4,349,000	1,847,893	1,750,839	159,000	179,000
Total .	9,835,000	3,259,497	3,168,319	437,000	457,000
Aggregate Revenue, including Payments to Local Taxation Accounts, &c.	152,590,000	49,105,873	48,279,917	2,223,899	2,372,000

PUBLIC INCOME AND EXPENDITURE

EXPENDITURE AND OTHER ISSUES

	Estimates for the Year 1906-7.	Total Issues out of the Exchequer to meet Payments from		ISSUES	
		Apl 1, '06, to Aug. 18, 1906	Apl 1,' 05, to Aug. 19, 1905	Week ending Aug. 18, 1906	Week ending Aug. 19, 1905
	£	£	£	£	£
National Debt Services . .	28,500,000	11,632,571	11,576,789	..	..
Other Consolidated Fund Services .	1,685,000	689,401	669,750	..	..
Payments to Local Taxation Accounts charged on the Consolidated Fund	1,160,000	232,492	232,175	..	..
Supply Services .	111,384,000	36,115,755	38,041,283	1,640,000	642,000
Expenditure	142,729,000	48,670,219	50,519,997	1,640,000	642,000
OTHER ISSUES					
For Advances for Bullion .	..	600,200	220,000	50,000	..
For Advances for Interest on Exchequer Bonds under the Capital expenditure (Money) Act 1904 . .	..	90,000	90,000	..	..
For Treasury Bills (net amount) .	..	..	1,000,000	..	..
Under Telegraph Acts, 1892 to 1904	..	450,000	300,000	..	..
Under Naval Works Acts, 1895 to 1905	..	972,000	1,663,000	..	..
Under Military Works Acts, 1897 to 1901 .	..	..	400,000	..	..
Carried forward	142,729,000	50,782,419	54,192,997	1,690,000	642,000

PUBLIC INCOME AND EXPENDITURE

EXPENDITURE & OTHER ISSUES—*Cont.*

	Estimate for the Year 1906-7.	Total Issues out of the Exchequer to meet Payments from		ISSUES-	
		Apl 1, '06, to Aug. 18, 1906	Apl 1, '05, to Aug. 19, 1905	Week ending Aug. 18, 1906	Week ending Aug. 19, 1905
	£	£	£	£	£
Brought forward	142,729,000	50,782,419	54,192,997	1,690,000	642,000
Under Land Registry (New Buildings) Act, 1900 . .	..	..	23,000	..	..
Under Public Buildings Expenses Act, 1903 .	..	75,000	105,000	..	..
Under Public Offices Site (Dublin) Act, 1903 . .	..	10,000	..	..	..
Under Cunard Agreement (Money) Act, 1904 . .	..	502,001	159,586	..	..
Surplus Revenue 1905-6 applied to reduce Debt	..	1,000,000	..	..	..
Deficiency Advances Repaid .	..	1,000,000	..	..	..
	142,729,000	53,369,420	54,480,583	1,690,000	642,000
Balance in ex-Exchequer :				Inc. or Dec.	for Week
Bank of England .	..	5,268,627	7,114,838	— 61,101	+1,154,000
Bank of Ireland .	..	909,816	796,455	+208,000	+ 119,000
Treasury, Aug 21, 1906 .	..	6,178,443	7,911,293	+146,899	+1,273,000

The Revenue and *Other Receipts* of this statement swell the public deposits of the Bank Return and the *Expenditure* and *Other Issues* reduce that item (*v.* p. 222).

For the *Temporary Advances, Ways and Means* (Treasury bills) *v.* p. 224 and Appendix E.

For *Temporary Advances, Deficiency v.* p. 228.

For *Issues of Exchequer Bonds* under the Finance Act, 1905 *v.* p. 224.

APPENDIX J

Specimen of a Company Prospectus

THE full prospectus, of which this advertisement is an abridgement, has been filed with the Registrar of Joint Stock Companies, in accordance with the Companies Acts, 1862 to 1900.

The said prospectus stated, among other things:

The SUBSCRIPTION LISTS will be open on Monday, May 16, 1907, and will be closed at 4 o'clock on THURSDAY, May 19, 1907, for both Town and Country.

No part of the capital has been, or will be, underwritten.

No promotion money has been, or will be, paid.

JOHN WATTS AND CO., LIMITED

Incorporated under the Companies Acts, 1862-1900.

SHARE CAPITAL £190,000

Divided into

140,000 six per cent. cumulative preference shares of £1 each	£140,000
50,000 ordinary shares of £1 each	50,000
	£190,000

The preference shares are entitled to a fixed cumulative preferential dividend at the rate of 6 per cent per annum, and rank, both as regards dividend and capital, in priority to the ordinary shares, but do not confer the right to any further participation in profits or assets.

The whole of the 50,000 ordinary shares, and 50,000 of the preference shares, are to be issued to the vendors, or their nominees, as fully paid in part payment of the purchase money.

90,000 of the SIX PER CENT CUMULATIVE PREFERENCE SHARES ARE OFFERED for SUBSCRIPTION AT PAR

Payable as follows:

On application, 2s. 6d. per share.
On allotment, 7s. 6d. per share.
On June 30, 1904, 10s. per share.

DIRECTORS

SAMUEL RICKARD, Chairman (Founder and London Director of Rickard and Co., Limited), New Union Street, E.C., Merchant.

JOHN WATTS, Managing Director, Fleet Street, E.C., Merchant.

CHARLES RICKARD, Coventry, Merchant.

Bankers.—William Deacon's Bank, Limited, Birchin Lane, London, E.C.

Brokers.—John Kelly, Tokenhouse Yard, London, E.C., and Stock Exchange.

Solicitors.—Johnson and Courtney, King Street, Cheapside, London, E.C.

Auditors.—Clement and Deacon, Chartered Accountants, King Street, Cheapside, London, E.C., and Manchester and Paris.

Secretary and Registered Offices.—Charles Stuart, 20 Fleet Street, E.C.

This company has been formed for the purpose of acquiring and taking over as a going concern the extensive clothing and outfitting businesses until recently and for many years carried on by the said SAMUEL RICKARD AND JOHN WATTS in co-partnership, under the style or firm of JOHN WATTS & CO., at 20 Fleet Street, London, E.C.

The consideration to be paid by the company for the purchase has been fixed by the vendors at the sum of £184,517

13s. 7d., payable as to £84,517 13s. 7d. in cash, as to £50,000 by the allotment of 50,000 of the preference shares of the company as fully paid up, and as to the balance of £50,000 by the allotment of the 50,000 ordinary shares of the company as fully paid up. Such preference shares are to be treated as fully paid up as on May 7, 1907, the date of the incorporation of the company.

APPENDIX K

Specimen of Advertisement of Issue of Colonial Government Stock

June 4, 1904. SIERRA LEONE GOVERNMENT 4 PER CENT TEN YEAR CONVERTIBLE BONDS ISSUE OF £1,250,000

Price of issue, £98 per cent. Interest payable June 1 and December 1.

First dividend, being six months' interest, payable on December 1, 1904. Principal repayable June 1, 1914.

Authorized by ordinances Nos 20 and 21 of 1903, as amended by Ordinances Nos 3 and 4 of 1904.

Convertible at the option of the holders during the currency of the bonds, into Sierra Leone 3½% inscribed stock, 1929–1954, on the terms mentioned hereafter.

The Government of Sierra Leone having complied with the requirements of the Colonial Stock Act, 1900, as announced in *The London Gazette* of September 23, 1902, trustees are authorized to invest in this stock subject to the restrictions set forth in the Trustee Act, 1893 (*v.* p. 255).

The loan is required to repay advances obtained for the construction of a railway 226 miles in length to the frontier of Liberia, of which 141 miles are already open to traffic, and the last remaining section of 85 miles is expected to be completed by the end of the present year.

The Crown Agents for the Colonies, on behalf of the Government of Sierra Leone, hereby invite applications for the above loan.

The loan is secured on the general revenues and assets of the Government of Sierra Leone, and will be raised on debentures representing £1,000, £500 and £100 respectively,

bearing interest at the rate of 4% per annum, payable half-yearly on June 1 and December 1 in each year, the first half-year's interest being due on December 1, 1904. Interest and principal will be payable at the office of the Crown Agents for the Colonies, Whitehall Gardens, London.

A cumulative sinking fund of 1% per annum, commencing on June 1, 1907, will be formed, and the accumulations in this fund will be applied either to annual drawings by lot, or to the purchase of the bonds in the market, at the option of the Crown Agents. The first drawing or purchase will take place in May, 1908, and thenceforth in the same month of every year. The drawn bonds will be paid off at par, together with the interest falling due on June 1 following.

Applications, which must be accompanied by a deposit of £5 per cent, will be received at the offices of the Crown Agents for the Colonies, Whitehall Gardens, S.W., and at No. 1 Tokenhouse Buildings, E.C.

The LIST will be closed on or before THURSDAY, June 9.

In case of partial allotment the balance of the amount paid on deposit will be applied towards the payment of the first instalment. If there should be a surplus after making that payment such surplus will be refunded by cheque. Applications may be for the whole or any part of the issue, and no allotment will be made of a less amount than £100, or multiples thereof.

The first payment must accompany the application, and the subsequent payments are to be made at the Crown Agent's Transfer Office, No. 1 Tokenhouse Buildings, E.C., not later than the following dates:

On June 14	£18 per cent
On July 12	£25 per cent
On August 9	£25 per cent
On September 6	£25 per cent

Payments may be made in full on June 14, or any subse-

quent date prior to September 6, under discount at the rate of 3% per annum.

After payment by the allottees of the instalment due on allotment, they will receive at the Crown Agent's Transfer Office, No. 1 Tokenhouse Buildings, E.C., in exchange for the letter of allotment and receipt, scrip certificates representing the debentures to which they will become entitled. These certificates will be ready for delivery on and after July 4.

CONVERSION INTO STOCK

The holders of the above scrip certificates, as soon as they are paid in full, or holders of any debentures not previously drawn for payment, will have the option, at any time prior to June 1, 1914, on surrender of the certificates or the debentures, with all undue coupons attached, of converting the same into Sierra Leone Government 3½% inscribed stock, 1929-1954 on the following terms. At any time between:

	Stock
June 14, 1904, and November 30, 1904	£105
December 1, 1904, and May 31, 1905	104
June 1, 1906, and May 31, 1908	103
June 1, 1908, and May 31, 1910	102
June 1, 1910, and May 31, 1912	101
June 1, 1912, and May 31, 1914	100

for each £100 of debentures.

The interest at the rate of 3½% per annum will be payable half-yearly, on June 1 and December 1 in each year, by dividend warrants, which, if desired, may be transmitted by post, either to the stockholders, or other person, bank or firm within the United Kindgom. Principal and interest will be payable at the office of the Crown Agents for the Colonies, London.

The stock will be transferable at the Crown Agent's Transfer Office, No. 1 Tokenhouse Buildings, E.C., without charge and free of stamp duty.

The ordinances referred to in the beginning of this announcement are the local laws of the Government of the British Colony of Sierra Leone. Those ordinances authorize the Sierra Leone Government to borrow £1,250,000, in the form of either debentures or inscribed stock, and to spend the money so borrowed in the following manner:

On railway construction . . .	£1,093,500
On a mountair railway . . .	39,000
On the Freetown Wharf . . .	39,000
On the Freetown Waterworks .	31,500
On residences	47,000
	£1,250,000

This sum is a charge on the Colony's revenue, and is obtained in England by the Crown Agents, who manage the loan on behalf of the Sierra Leone Government.

A sinking fund for the redemption of the loan is formed by the transmission from Sierra Leone to the Crown Agents of 1% on every outstanding debenture or on the issued inscribed stock every half year, commencing on June 1, 1907; these amounts are invested by the Crown Agents. The Sinking fund may be applied to the redemption of the debentures from and after May, 1908, and to the redemption of the inscribed stock after June 1, 1929. The debentures must all be redeemed by June 14, 1914, and the inscribed stock must all be redeemed by 1954.

The 5% application money, plus the subsequent instalments, together amount to 98%, which is the issue price of a £100 debenture, thus: 5% + 18% + 25% + 25% + 25% = 98%.

Conversion of Debentures into Inscribed Stock

The 4% debentures or scrip certificates, having been paid for in full, may be exchanged before June 1, 1914, for 3½% inscribed stock, 1929-54 as follows:

(1) Between June 1, 1912, and May 31, 1914, debenture holders may exchange their debentures for inscribed stock

at the rate of £100 4% debentures for £100 3½% inscribed stock. If the debenture holders exchange their 4% debentures for 3½% inscribed stock they will, of course, lose ½% interest, but as the 4% debentures are bound to be redeemed at par some time or other during the two years 1912-14, the holders cannot possibly receive 4% for a longer period than two years, and are liable to have their debentures redeemed before that period has expired.

(2) Between June 1, 1910, and May 31, 1912, the rate of conversion will be £100 4% bonds for £101 3½% inscribed stock. But 3½% on £101 is 3$\frac{17}{20}$%, so that anyone exchanging his debentures for inscribed stock between June, 1910, and May, 1912, abandons a contingent 4% interest plus a £100 debenture in favour of a certain 3$\frac{17}{20}$% interest for at least 19 years + £101 inscribed stock.

(3) Between June 1, 1908, and May 31, 1910, the rate of conversion is to be £100 4% bonds for £102 3½% inscribed stock. But 3½ on £102 is 3$\frac{11}{20}$%, so that a conversion would mean the exchange of a contingent 4% interest plus £100 debenture for 3$\frac{11}{20}$% for a certain 21 years plus £102 inscribed stock.

Thus, every two years nearer to the date of issue of the debentures, a conversion of debentures into inscribed stock implies an increase of $\frac{7}{20}$% interest plus £1 stock, until we find that between June 14, 1904, and November 30, 1904, £100 4% debenture may be exchanged for £105 3½% inscribed stock, that is to say, a contingent 4% interest plus £100 debenture may be exchanged for 3$\frac{35}{100}$% interest for at least 25 years plus £105 inscribed stock.

Let us see the effect on the burden of the Colony's indebtedness and on the annual income and value of capital of the investor involved by a conversion of debentures into inscribed stock between June and November, 1904. In August, 1904, holders of £310,900 4% debentures exchanged their scrip for £326,445 3½% inscribed stock (i.e., £100 debenture was exchanged for £105 inscribed stock).

(1) Since 4% on £310,900 . . . . . = £12,436
and 3½% on £326,445 . . . . . = 11,425
There is a saving to the Colony of int. . £1,011

but the principal which has ultimately to be redeemed between 1929–54 is increased by £15,545 (viz., £326,445 minus £310,900).

(2) Whereas a debenture holder runs an uncertain chance of deriving an annual income of 4% for ten years and is in possession of stock which is of the face value of £100, a conversion into inscribed stock yields him a certain 3$\frac{17}{20}$% till 1929, and possibly till 1954, and he is in possession of stock of a face value of £105.

APPENDIX L

Extinction of a Debt by Sinking Fund

Reduction of Debt of £50 in five years, 5% interest	Interest	Principal	Annuity	Explanation
Loan . . . . £50 Add interest first year . . . . 2·5 52·5 Deduct first payment of annuity 11·5489 leaving 40·9511 as the debt outstanding at end of first year.	2.5	9·0489	11·5489	The £9·0489 is called the *Sinking Fund*, which is theoretically invested and earns 5% interest. The principal, viz., £50, is reduced by 9·0489, and so leaves the outstanding debt at 40·9511 as shown in column 1.
Outstanding debt brought down 40·9511 Add interest second year . 2·0475 42·9986 Deduct second payment of annuity . 11·5489 leaving 31·4497 debt outstanding at end of second year.	2·0475	9·5014	11·5489	The first Sinking Fund payment, viz., 9·0489, has earned 5% interest, viz., ·4524, and, therefore, now amounts to 9·0489 plus ·4525 = 9·5014 (*v.* column 3). To this is added the second Sinking Fund payment, the total Sinking Fund now being, therefore, 9·5014 + 9·0489 = 18·5503 which, being deducted from the principal, £50, leaves the outstanding debt at 31·4497, as shown in column 1.

Reduction of Debt of £250 in five years, 5% interest.	Interest	Principal	Annuity	Explanation
Outstanding debt brought down 31·4497 Add interest third year . 1·5724 33·0221 Deduct third payment of annuity . . 11·5489 leaving 21·4732 debt outstanding at end of third year.	1·5724	9·9765	11·5489	The first Sinking Fund payment, 9·0489, has now increased by compound interest to 9·9763 (*v.* column 3). The Sinking Fund 18·5503, has earned 5% interest, viz., ·9275, and, therefore, now amounts to 18·5503 plus ·9275 = 19·4778, and is increased by the third Sinking Fund payment of 9·0489 to 28·5267 which, if deducted from the principal £50, leaves the outstanding debt at 21·4732, as shown in column 1.
Outstanding debt brought down 21·4732 Add interest fourth year . 1·0736 22·5468 Deduct fourth payment of annuity . 11·5489 leaving 10·9979 debt outstanding at end of fourth year.	1·0736	10·4753	11·5489	The first Sinking Fund payment, 9·0489, has now increased by compound interest to 10·4753 (*v.* col. 3). The Sinking Fund, 28·5267, has earned 5% interest, viz., 1·4263, and, therefore, now amounts to 28·5267, plus 1·4263=29·9530, and is increased by the fourth Sinking Fund

Reduction of Debt of £250 in five years, 5% interest.	Interest	Principal	Annuity	Explanation
				payment of 9·0489 to 39·0019 which, if deducted from the principal, £50, leaves the outstanding debt at 10·99, 9, as shown in column 1.
Outstanding debt brought down 10·9979 Add interest fifth year . ·5498 11·5477 Deduct fifth payment of annuity . . 11·5489 leaving nil debt outstanding at end of fifth year.	·5498	10·9991	11·5489	The first Sinking Fund payment, 9·0489, has now increased by compound interest to 10·9991 (*v.* col. 3). The Sinking Fund, 39·0019, has earned 5% interest, viz., 1·9500, and, therefore, now amounts to 39·0019 plus 1·9500=40·9519, and is increased by the fifth Sinking Fund payment of 9·0489 to £50, which, if deducted from the principal, £50, leaves no outstanding debt, as shown in column 1.
	7·7433	50·0012	57·7445	The totals show that the interest payments amounted to £7·7433, and the repayments of principal to £50·0012; the interest, plus the principal, being equal to the total of the five annuity payments, viz., £57·7445.

APPENDIX M

Trade between Gold and Silver Countries Inconvenienced by Fluctuations in the Ratio between the Metals

BEFORE 1873 the ratio between silver and gold was practically constant at about $15\frac{1}{2}$: 1, but at the present time the ratio is continually fluctuating; instead of the price being 5s. 6d. per oz., as of old, it is now about 2s. 6d. per oz.

The fall in the value of silver is due to an increase in the supply over the demand. The demand has been reduced by the demonetization of silver by several countries, which have adopted a gold standard in its place, and the supply has also largely increased.

The great inconvenience to trade which arises from the fluctuations in the ratio between gold and silver is due to the consequent lack of gauge between gold and silver countries; the trader in the one country never knows to what extent the rate of exchange may alter before the completion of his transaction with the other country, and an anticipated profit may be turned into a loss solely through the fluctuation in the ratio.

Suppose, for example, that before India's standard was made a gold one, an Indian wheat exporter contracted to sell wheat in London, he would know the gold price of the wheat in London, but he would not know for how much gold to draw his bill. If the ratio between gold and silver should happen to fall, his bill would sell for more rupees, and he would make a profit. It has been argued from this that such a fall as this in the value of silver encourages the export trade of the silver country, but the fallacy of this argument will be apparent if we remember that the fall in silver must cause a rise of prices and wages in India sooner or later. If the rise of prices does not occur immediately,

certainly the Indian trader has benefited, but only at the expense of some one else in India, who, if prices had risen immediately, would have received the extra rupees from the Indian merchant.

On the other hand, it is certain that the import trade is discouraged, for, since importers have to pay more rupees for their remittances by means of bills, they are obliged to raise their prices, while at the same time they hesitate to import on credit because they do not know how much they will eventually have to pay for the goods.

A further inconvenience experienced by India before her standard was gold was the burden inflicted on those in India who, receiving fixed salaries in rupees, found, when they remitted those rupees to England, that their purchasing power in England had fallen, while the gold debts payable to England by the Indian Government were greatly increased by the necessity of providing more commodities in which to discharge them.

Effects of Depreciation on Trade

The effects on trade of a depreciating currency are similar to those of a silver currency whose value is falling.

"The chief sufferers by depreciation" (Clare, *A.B.C. of Foreign Exchanges*, p. 154) "are, firstly, those who sold on long credit or granted long loans before the currency began to fall in value, or during the course of its fall, and, secondly, the hewers of wood and drawers of water of the nation, who have to pay greatly enhanced prices for many of the necessaries of life, while their wages are little, if at all, higher. The misery thus engendered among the peasantry and the minor salaried officials is a constant source of danger to the Government and not infrequently ends in revolution.

"The last point to be noticed is that an unfavourable exchange tends to work its own cure, for under its influence the country naturally buys less and sells more, which is precisely what is needed to place its finances on a sounder footing. Strange as it may seem, a recovery in value of the

currency appears to occasion more distress than attended the depreciation. While inflation was in progress, prices rose, and all debtors were relieved of part of their obligations; but appreciation adds to the burden of the debtor, and also imposes the formidable consequences of successive depreciations of all property arising from progressively falling prices."

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