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MONEY

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§ 2. THE ORGANISATION OF MONEY

CHAPTER IV

THE QUALIFICATIONS OF MONEY

¶ 1. Prefatory Note

HAVING considered the position of money in economic life, the concept of money and its functions, we now turn to a study of its concrete forms and its organisation into co-ordinated monetary systems.

The degree of uniformity found in the theoretical concept of money is in direct contrast to the manifold forms in which this concept is manifested in actual practice. The money of every State consists of a number of substances of different kinds and different forms, of materials welded into an artificial entity, each unit of which embodies one and the same monetary idea. The whole is a product of historical development for which—apart from certain arbitrary incursions of political powers and their agents—changes in economic intercourse and its needs have supplied the decisive motive force. The economic state of a country at a given time and its needs have a natural tendency to adapt to themselves the concrete forms in which money appears. Every systematic incursion by the State and its legislation into the sphere of the monetary system must have for its purpose, so long as it is not made in pursuance of aims which lie outside the monetary sphere, the shaping of the concrete forms of money so that these may fulfil as far as possible all the requisite functions and suffice for the economic requirements of the country.

A consideration of these conditions and requirements forms the bridge between the study of the concept of money and its functions, and the examination of the concrete forms in which the concept of money is translated into a completely self-contained system.

¶ 2. General Qualifications which Money must Possess

In this chapter we can revert to some of the points already discussed in the historical part of this book, particularly to the exposition of those properties of the precious metals which appear to make them more suitable than any other economic objects as raw material of money. Leaving aside for the moment types of money made of substances of no intrinsic value, we would recapitulate the advantages enjoyed by the precious metals as raw material for money of actual intrinsic value. The function of money as a medium of transfer of wealth from person to person presupposes a confidence in the stability of its purchasing power, and this stability exists to a

large extent in the case of the precious metals The transfer should be an easy one—that is, the objects of transfer should be capable of easy transport and should be convenient to handle. This is a qualification possessed only by such objects of economic intercourse as have a high value combined with small volume and weight. Moreover, it is necessary to represent values of arbitrary amounts by means of money, and this implies that the money substance should be easily divisible and plastic. The money substance must also have a high degree of resistance to all kinds of destructive influences. It must not suffer damage in transport, and it must, as far as possible, preserve its constitution unchanged and maintain its value in the hands of the person who accepts it. The more extensive the field of economic intercourse, the more general must be the desire for the substance, as only by its means can transfers of value be effected over considerable distances. These are, on the whole, the qualifications which even to this day are possessed by the precious metals to a greater degree than by any other economic goods, and it is due to these qualifications that even to-day money finds its ideal embodiment in such metals.

On the other hand, there are certain general qualifications which the precious metals do not in themselves possess and which necessitate special arrangements. Facility of transfer does not only depend upon technical factors concerning transport, factors which to a large degree are satisfied by uncoined metal. Certain mental operations must also be reckoned with in these transfers. The ascertainment of the constitution and weight of an object to be transferred should not necessitate a troublesome and inconvenient process. These factors should be easily discernible. Nor should complicated calculations be required in order to represent specific magnitudes of value in the money substance; this should be made possible by a simple counting of pieces, similar to one another, or standing to each other in a simple relation of value. Coins consisting of metal discs inscribed with specific signs, uniform in pattern, easy to handle, and endowed with definite current value have overcome the difficulties under discussion. The general qualifications required by the money form, to satisfy which coins were first created, have secured for minted metals a special place amongst the forms in which money appears.

¶ 3. Conditions underlying the predominant Employment for Money of various Substances

Within the limits just described the economic requirements affecting money vary, therefore, with the particular economic conditions of each case. Individual metals which throughout

the ages have served as money substances, and continue to serve this purpose, have not at all times been, and are not even now, adapted to such use in the same way in all countries. Copper, silver, and gold, which are most usually employed, have at different times, and one after the other, enjoyed predominance as money substances. In many countries they have done so side by side. It has long been recognised that the temporal changes and the local differences in the employment of the individual metals for monetary purposes are the result of deep-rooted causes, and a cursory study of history may lead us to conclude, with Lord Liverpool,[1] that the general tendency is for nations as they progress economically to pass from the less costly to the more valuable materials for their money substances. Thus, in so far as metallic money is concerned, we ought to find that, with economic progress, copper and the other base metals, such as tin and iron, are driven out of circulation by silver, and silver in its turn is driven from its position of dominance by gold.

On closer examination, however, we find that the change in the employment of these metals for monetary purposes cannot be accounted for on the basis of this simple formula; for were not the first coins struck gold coins, and do we not even in the case of the less ancient nations find copper money used later than the periods in which it can be proved that silver and gold money was already in circulation?

It is true that we can establish a general relation between the specific value of the money substance on the one hand, and, on the other, the volume of transactions and their spatial extension, effected by money at a given stage of economic development. Where a few silver coins are sufficient to provide the wherewithal for a family for a fairly long time, and where the daily wage of a labourer amounts to a few copper pence, there gold cannot in general take any large share in the circulation. Where, on the other hand, the turnovers and payments to be effected by money require such large quantities of silver coins that the transport and transfer of these becomes inconvenient, we have conditions suitable for a preponderating use of gold coins. Again, where the monetary transactions are limited to a narrow area, there the use of media of payment of lesser intrinsic value will in general be found less inconvenient than in the cases where it is necessary to send money over long distances.

But neither the volume nor the spatial extensions of transactions are directly dependent upon the general state of economic development. As regards the first point, a fundamental factor—as has been shown in the historical part of this book in tracing the

[1] Lord Liverpool, *Coins of the Realm*, 1805 (reprinted by the Bank of England in 1880).

developments in European money conditions—is the extent to which in various epochs and countries production for sale and the use of money have driven barter and production for one's own household into the background, within the several economic classes of society. As a general rule the progressive permeation of money into more and more of the lower economic strata of society may be regarded as a sign of economic progress. The transition to a monetary substance of greater value, however, does not necessarily go hand in hand with such economic developments, but the tendency on the contrary might even be supposed to be in the opposite direction. We need only remind the reader that owing to the enormous progress which monetary institutions made in European countries from the beginning of the Middle Ages, the dominance of gold money was followed in the latter part of the Middle Ages by a preponderating use of silver money. While wholesale trade, in connection with which we naturally find the first uses of money, implies perhaps a smaller number of transactions involving large values, and which consequently has use for the most valuable money substances, yet the lower and very extensive strata of economic society enter into innumerable transactions each of very small amount, and the requirements of these can be met by money of lesser intrinsic value. But the sum total of these latter small amounts might be considerably greater than the aggregate of the large-scale transactions, and the result might be that the increasing employment of money as such might cause the less valuable money substance to oust the more valuable substance from the first place.

The territorial expansion of the transactions into which money enters may also depend upon conditions which do not follow absolutely from the general stage of economic development. In a territorially far-flung State the administrative and military institutions demand money of relatively high intrinsic value, and this is the more so when conditions of economic intercourse are unfavourable. The foreign economic relations of a State also press for the employment of a money substance of relatively high intrinsic value and are frequently, but by no means invariably, a reliable standard whereby the level of general economic development may be measured. In any case, their influence on the shaping of the monetary system is greater when foreign trade exceeds the home trade in importance, and the level therefore of the internal economic development is lower than that of the development of foreign trade. The greater facility of long-distance communications by water as compared with those by land has frequently contributed, especially in the early stages of economic development, to the centre of gravity lying in foreign trade. From this point of view, however, it is conceivable that economic progress may favour the use of a less valuable metal.

The relation between the magnitude of the transfers to be effected by money and the metals serving as raw materials for money depends also upon factors operating on the side of the metals. A rise in economic development and a consequent increase in the division of labour and of technical processes which result in more abundant production and greater turnovers, need not of themselves alter the relation between the daily consumption of the individual economic units and the money metal. Lower prices may be the consequence of greater facility in production, so that both before and after the change the greater daily demand can be met by the same quantity of money. The necessity for greater use of the more valuable money substance arises only if, as production and consumption increase, the prices of commodities are not correspondingly lowered, but are even perhaps raised, so that the quantity of money required for the necessaries of life of the great masses of the population becomes substantially larger. In other words, this is so only if, whilst turnovers increase, the value of money remains unaltered or is lowered in comparison with other commodities of economic intercourse.

The tremendous increase in the production of both the precious metals since the discovery of America, and in a more intensified degree since the middle of the nineteenth century, has in fact resulted in such a development. From the middle of the nineteenth century the increase in the production of silver naturally and necessarily tended to restrict the sphere of employment of that metal as money, whereas the increase in the production of gold led to an enormous extension of the use of gold money. The more the increased output of gold lowered the value of the yellow metal in relation to the daily demand for it on the part of the population, the more adapted did gold become for use as a medium of economic intercourse by a continually widening economic circle. The contrary was the case with silver. The more its value, as against other economic goods, sank by reason of increased output, the more cumbersome did it become for large and medium payments. Thus gradually it became more and more restricted to small-scale transactions. Moreover, whilst in the case of gold the possibility existed of its employment to a very much larger extent in spheres previously dominated by silver—a safety valve against too great a diminution of its value—the value of silver was adversely affected not only by the increased production of the metal itself, but also by the incursion of gold into its sphere of monetary use.

Thus in the second half of the last century the circumstances of production of the precious metals and the conditions of general economic development combined to render gold much more

suitable than silver for the requirements of trade, so far as the greatest part of the metallic currency was concerned. It was not a case of small differences in connection with which fashion and fancy might have given the impetus; the differences between the two metals were actually so great that they had to be reckoned with as prime economic factors. Even according to the so-called "old" ratio of value, a given weight of gold represented in value 15½ times as much as the same weight of silver. To this must be added the fact that the specific gravity of gold is to that of silver as 19¼ is to 10½, so that a given volume of gold was 28·4 times as valuable as the same volume of silver. Thus, for making a payment in silver there was required 15½ times the weight and 28·4 times the volume of the gold which would have been necessary to make the same payment—and this at the old ratio of value.

For the German coins which had been struck more or less on this old ratio, the above figures applied pretty well up to the beginning of the War. But in transfers of bullion, and for subsequent coinage of silver at full standard value, the relation, by the depreciation of silver, shifted very largely to the disadvantage of silver. The London price for silver of 23½d. per ounce standard, as quoted just before the War, means that gold represents forty times as much value per unit of weight and 73⅓ times as much value per unit of volume as silver. Where for the transport of gold a few cases would suffice, the transport of a similar value of silver would necessitate a railway train of quite considerable dimensions.[1]

Where the use of gold money supplemented the use of silver money, trade was freed of a quite substantial dead-weight burden. This fact was noticeable not only in connection with international bullion payments, but it was felt even in the lowest strata of daily intercourse, and the use of silver money was on the whole restricted to payments for which no gold coins were available. This manifested itself with especial clearness in the form which the circulation actually took wherever trade was allowed by the organisation of the monetary system to use gold and silver money according to its own wishes and requirements.

In Germany the market could at any time draw from the Reichsbank such quantities of silver money as it required, and at the same time, as the Reichsbank accepted payments in silver to any amount, the market could dispose to the Reichsbank of any quantities of silver which were in excess of its requirements.

The amount of the silver, nickel, and copper coins of the Reich,

[1] Half a cubic metre of gold weighing 9·6 tons corresponded, when the price of silver was 23½d., to 384 tons, *i.e.* to about 38½ wagon loads of 10 tons each, of silver.

which were in general circulation in the year 1913, may be estimated at about 1000 million marks as compared with about 2600 million marks in gold coins. Thus only 28 per cent. of the metallic circulation was represented by silver, nickel, and copper coins, and as much as 72 per cent. was represented by gold coins.

¶ 4. Demand for Pieces of Money of different Values

Although, therefore, in European civilised countries during the given stage of development of production, consumption, and trade, and in the given condition of prices, gold is better suited than silver for the greater part of the circulating currency, the monetary system cannot do with gold coins alone. The most varied values, as well as quite small differences in value, must be exactly represented by coin, and as this must be done with the fewest possible pieces of money, it means that various types of coin are required which form a graduated series. In large-scale transactions the amounts are very great; in transactions amongst the masses the values and differences in values are very small. In the old German monetary system it was a far cry from the note of 1000 marks to the coin of 1 pfennig, and the distance separating these two could only partially be filled by gold-money. The convenience with which gold can be used and its capacity for employment have both a higher and a lower limit. In amounts below some given limit, gold coins become too small and are too easily lost. This limit of convenience is, of course, not definite and fixed, but varies with time, country, and social class. A piece of gold, which on account of its smallness is inconvenient for the horny-handed labourer, can be in its proper place in a lady's purse; and, on the other hand, such coins as, for example, the silver 5-mark piece, were largely demanded by the workmen in industrial districts, whilst they were avoided by other classes as being inconveniently clumsy. As far as gold is concerned, practical experience in Germany has shown that even the gold 5-mark piece is already below the lower limit mentioned above, owing to the customs and requirements of trade. The interval from the 10-mark piece downwards was, therefore, filled by silver up to the point where silver, too, became inconveniently small to handle. The silver 20-pfennig piece could not in practice be retained in circulation—although in South Germany, where people were from the earliest days accustomed to small coins, this coin was looked upon with more favour than in the North. Below the silver limit there was still space left for the use of base metal.

In the other direction there is the limit beyond which gold is no longer convenient as money. Large gold coins, such as the

50- and 100-franc pieces, formerly struck in France, were at no time of any real practical importance. The type of the German 20-mark piece and of the English sovereign represents about the maximum practical size for gold coins. Large amounts can, of course, be assembled by the use of these coins, but for very large sums paper money is universally preferred. There can be no doubt that it is decidedly more convenient to carry on one's person two notes of 100 marks each than ten gold 20-mark coins, and this is still more so with larger amounts, such as 10,000 marks in ten notes of a 1000 marks each rather than five hundred gold coins of 20 marks each.

But even for smaller amounts paper currency appears more convenient than metal for certain purposes. For example, under the old German system, although metallic money was plentiful, yet Treasury notes were constantly used for payments made by post.

It is, however, just in the matter of paper money that the habits of the different nations so greatly vary. In countries which have used paper currency for any considerable time, the public grows but slowly accustomed to metallic money; on the other hand, the Germans, accustomed to a metallic currency, detested the small denomination paper notes of a gulden or a lira, which they found in Austria-Hungary and Italy respectively. These notes, naturally, were not always very clean or in the best state of preservation.

As it is impossible to satisfy the requirements of economic intercourse by the use of only one money substance, or by one type of money, the State, which is the controlling authority in monetary matters, is obliged to create from different substances types of money which supplement each other. If money is adequately to fulfil its function as a medium of transfer of values, then the choice of the individual types, the so-called "divisionary money," must comply with two conditions. The choice must be such as to enable the representation of amounts of the greatest variety by means of a small number of pieces of money, and at the same time to eliminate as far as possible the danger of mistaking for each other pieces which differ in their value. These two requirements are to some extent contradictory, in that one implies a manifold, the other a simple division. A large variety of types will lessen the number of individual pieces required for assembling desired amounts; but with manifold types of coinage the visible differences between the types become less distinct because the form of the coins is fixed by custom, because the coins must be small in size, and because there are few suitable money substances. The happy mean can only be discovered by experience. In Germany, for instance, experience showed that the 20- and 25-pfennig pieces, which had previously been regarded as necessary, could easily be dispensed with. The 20-pfennig pieces, originally of

silver and later of nickel, fell into disuse without creating any noticeable void, and the nickel 25-pfennig piece introduced at a later date was not received with any enthusiasm.

¶ 5. Technical and Æsthetic Requirements

The requirement that coins must be easily distinguishable, a factor which must be taken into account in deciding on the divisionary types, introduces certain technical conditions. This applies also to paper tokens. First and foremost the impression of coins must be distinct, in order to separate with ease pieces which are similar in size and in colour. The most important constituent of a coin or of a paper note is the value which it is to represent. It would thus seem particularly imperative to have the designation of value as clear as possible. But this rule is frequently broken. The entire surface of coins is in many cases covered with portraits and heraldic designs, with more or less comprehensive inscriptions, whereas the designation of value can only be discovered with difficulty. In addition to being distinct and clear, the impression of the coin must be durable. To protect coins as far as possible against wear, which tends to obliterate their impression and to diminish their metallic content, it is usual to add some copper alloy to the precious metals. This alloy increases their resistance to wear in a marked degree. Again, in order to protect coins against abrasion, they are given a raised edge, and this edge is "milled" as a protection against fraudulent cutting or clipping. These protective measures are as much in the interest of the State as in that of the public. But however perfect the technical safeguards may be, it is not possible to avoid the ultimate abrasion of coins, and the State must, therefore, continually withdraw worn coins from circulation and replace them by new coins so as to maintain an effective currency.

Connected with these technical questions there is another relating to the exterior of coins, which we must touch upon, although it belongs more to the sphere of æsthetics than to that of economic requirements. It should be a matter of pride for every State to mint coins of good impression and of design which is in good taste, and to produce them from alloys which not only protect the coins against abrasion, but enable them in their passage in an almost endless chain from hand to hand to preserve a clean and attractive appearance. Paper money, too, ought to be of artistic and pleasing design, made of durable material, and kept in decent condition by frequent renewals. No picture comes so constantly before the eyes and into the hands of the people as the impression on the country's coinage and the

imprint on its paper money. Every coin and every paper note should, therefore, be a small and pleasing object of art. The use of alloys which render the coins ugly after a comparatively short period of circulation should be avoided, even for coins of small value. An example of this was provided by the metal composition from which the so-called "nickel coins" were struck in Germany and some other countries. This composition consisted of 75 parts of copper and only 25 parts of nickel, and the coins so produced showed up very badly as compared with pure nickel coins such as the Swiss 20-centime pieces, the Austrian 20- and 10-heller pieces, and the German 25-pfennig pieces of a later date. The disfavour with which the 20-pfennig piece was looked upon everywhere in Germany is a proof that the public are not indifferent to this question of æsthetics. The reason why this coin failed to establish itself even less than the silver 20-pfennig piece had done was, first and foremost, that it combined to a peculiar degree ugliness in appearance with baseness of substance. It is, therefore, clear that on this point public opinion is not indifferent.

¶ 6. The Necessity of a Uniform Monetary System

The requirements of a monetary circulation are, however, not fully met by the State when merely manufacturing, or allowing to be manufactured and placed at the disposal of the public, a series of coins representing different values and produced from certain substances by appropriate technical processes. There yet remains a further requirement of special importance. *The various types of money* must be co-ordinated into a *uniform system*. They must bear a simple and definite relation of value to each other.

Money can perform its task completely and efficiently only when it constitutes a self-contained entity, however manifold may be the concrete forms in which it appears. In transfers of all kinds it is extremely important that everyone should be able to pass on any type of money which he receives, and that he should be able to do so, for all purposes which are fulfilled by money, at the same value at which he received it. If the individual types of money must, before they can be used for purchases, for payments, or for capital transfers, first be evaluated in terms of other types of money, or converted at varying rates into other types, the advantages which money offers as a medium of economic intercourse are restricted in degree. Only when the various types of money represent simple and fixed fractions and multiples of one and the same unit, and only when, within the limits fixed once and for all by the legislature (by statutory limitation of the legal tender powers of token coins, etc.), they can be legally, and in actual practice, substituted in payment one for another at their

nominal value in the same way as pieces of the same type of money, then only do we find money, in contrast with the multiplicity of economic goods, perfectly fulfilling its functions as money, as the entity embodying both supply and demand, for which all commodities of economic intercourse are exchanged and in which these commodities find the expression and measure of their exchange value. In such a perfect state of the monetary system there arises, on the foundations of the unit of value embodied in some particular type, a rationally subdivided system of arithmetical entities whose numerical connections, both up and down, are incorporated in the various money types. The employment of each of the various types in all kinds of transfers, as well as the manipulation of all economic arrangements based on money, is thereby facilitated in the highest degree.

It was shown in the historical part of this work that the history of the evolution of money shows a persistent endeavour to reach this ideal state of affairs, but that, until we come to modern monetary systems, we do not find successful co-ordination in a self-contained system of various types of money, made of different substances and combined in the system in a manner conforming to public requirements.

This organisation of money, both as to its nature and as to its structure, as well as regards its external connections, must now be more closely examined.

CHAPTER V

SYSTEMS OF MONEY

SUBSECTION I. CURRENCY SYSTEMS AND THEIR SUBDIVISIONS

¶ 1. The Conception of a Currency Standard

THE basic conception in the modern organisation of money is that of a "currency standard." This term is used in a great many ways. When referring to the most important money substances, we speak of a gold standard currency, a silver standard, a paper standard, etc. Then, again, in relation to the particular State whose monetary system we may be considering, we speak of the German, French, English, American, or Indian currency standard; and, finally, in connection with the unit of account which is the basis of any particular monetary system, we speak of the mark standard, the taler standard, the franc currency standard, etc. In this varying application of the term we must at once observe that, in speaking of the gold standard, etc., we are dealing with a class concept which includes specific types of "standard currency," but that, on the other hand, in speaking of a standard currency in connection with a particular State, or with a specific unit of account, we always mean a special and particular currency, which, as such, has its place in a definite category of standard currencies, *e.g.* the gold standard, the silver standard, or some other standard of currency.

The concept of standard currency includes a specific monetary system in its entirety. The actual concrete forms which money assumes in the various types representing the currency of a given State or of a community of States, are no more implied than is the pure conception of money, which is independent of the actual forms which it takes in particular countries or in a particular organisation. But by this conception of a standard we always visualise a given monetary system in a given organisation in which the concrete forms of money are combined in an ideal entity. If, for example, we mention a definite sum in German Reich currency or in Austrian currency—that is, of the mark or crown standard,—we intend to denote thereby a definite quantity of German or Austrian money, and the point as to the specific pieces of money which compose or which might compose the sum in question, whether gold or silver coins or paper notes, is left open. When we speak of the status of a currency abroad and of its negotiability on foreign markets, or again of the soundness or otherwise of a currency, we have in mind the entire complex of a definitely organised monetary system without differentiating the individual forms of money which appear therein. Such a co-ordination of the various pieces and of the different types of money into a whole is

rendered possible only by the exercise by the State of those legislative and administrative functions which regulate and control the monetary system. *"Currency" is thus the money of a particular State or of a particular community of States conceived as an entity.*

The conception of a currency standard accordingly appears only where it has been found possible to combine the various types of money into a complete system, and we do not, therefore, find it in that state of the monetary system in which the various types exist side by side and independently, a condition of affairs described in the historical part of this book as "money of account."

If we leave out, on the one hand, the concrete pieces of money, and, on the other hand, the pure concept of money, then the unifying and connecting factors which remain are, firstly, the element of value represented in the various pieces of money by the common basis of their definite numerical relations—that is, the value represented by the unit which is the basis of the system; and, secondly, the formal structure of the system. The factors conditioning the value of money, as well as the formal characteristics of the monetary system, thus represent aspects from which individual currencies may be differentiated and classified into the different categories of currencies and of currency systems. The first aspect is of an economic, the second of a legal nature.

¶ 2. Free and Normative Standards

In considering the history of the development of money from the point of view of conditions governing money value, we find the principal difference between the various currency systems to turn on the question whether the value of the several types of money is definitely related to the value of some third object, or whether no such relation exists.

Such a third object conditioning money value in particular currency systems can, in practice, only be represented by the precious metals, gold and silver, which are the most important money substances.

The relation between the value of the money substance and the value of money in coined form seems, in view of the small cost of coinage in proportion to the value of the substance to be coined, to determine itself. We have, however, noted that natural abrasion and intentional debasement of coins over a long period of time did not allow of a fixed ratio of value to be set up or preserved between the coin and its particular metallic content. The actual metallic content of coins was, however, in the long run certainly a decisive factor in their value, but this natural connection between the value of the coin and its money substance was not overcome by artificial means until a later period.

Types of money consisting of different substances, and continually fluctuating in their relative values, can be brought into a stable relationship only when one single money substance is definitely allied to the value of the money unit, while coins formed of other substances are made independent of their own substance and brought into line with the types of the single substance referred to.

Where this happens, money value as implied in the nominal value of the various types of money is definitely bound up with a particular money metal. Subject only to very small fluctuations, the ratio between the unit of currency and a definite quantity of metal generally corresponds to the ratio between the nominal value and the metallic content of the coins produced from the precious metal in question. Thus, in the German gold standard currency, there existed between the unit of the currency, the mark, and $\frac{1}{1395}$th lb. weight of fine gold a ratio which was subject to variations of only thousandth parts, and the equation expressing this relation was to be found again between the nominal value and the gold content of the gold coins of the Reich. The 10-mark piece contains $\frac{1}{139.5}$th of a lb. weight, the 20-mark piece $\frac{1}{69.75}$th of a lb. weight of fine gold—that is, $\frac{1}{1395}$th of a lb. in weight of fine gold per mark of the nominal value.

It has already been mentioned that with individual coins the relation between their value as coins and their metallic content is in every way a natural one. It subsists as long as the State which mints the coins transforms into coin any and every quantity of the precious metal brought to it for the purpose, only making a small charge called seigniorage for so doing, the charge being the actual cost, or very little more, and as long as the State in some way or other sees to it that the circulating coins retain approximately their full content of metal.

Free coinage and a definite deficiency allowance, called "remedy," furnish, therefore, the basis for maintaining an invariable parity between money metal and the money coined from it As soon as it was found possible, by measures which we shall have to discuss when dealing with the internal machinery of monetary systems, to link up all other coins with the standard coins struck from the freely coined metal, the stage was reached in which the link created by free coinage established the value of money as such. As soon as twenty 1-mark pieces of silver were worth in Germany just as much as a gold 20-mark piece, the linking up of gold and coins through the free coinage of gold and through the limits of tolerated deficiency was as definite for silver coins as it was for gold coins. A definite equation of value was established between German money, as such, and gold metal. The value of the German currency unit, the mark, corresponded within the narrow

limits of variation already mentioned to the value of $\frac{1}{1392}$th lb. in weight of gold. In Knapp's terminology gold possesses "hylodromy"—*i.e.* the substance (hyle) has a fixed ratio (dromos) to the unit of currency.

Currency systems in which the value of money appears to be linked up with a particular precious metal contrast with others in which there is a total absence of any more or less fixed relation of value between the money unit and some money substance, or between the money unit and any third kind of commodity. The latter are systems in which the value of money is independent of the value of all other economic objects, and is determined even in its relation to the money substances in accordance with its own laws. In these systems there is either (1) no free coinage of either of the two precious metals—as, for example, in Austria between 1879 and 1892,[1] in India from 1893 onwards,[2] and in the Scandinavian States during the War;[3] or (2) the connection of the entire monetary system with the coins minted freely could not be established or was not preserved—as, for example, where the limit of tolerated deficiency is lacking and the coins in circulation accordingly continue to diminish in weight; or (3) as in the case of paper currencies. In the first case—in the absence of free coinage—there is nothing to prevent the value of the coined money rising above that of its metallic content. In the case of a paper currency the difference in value which arises between the freely coined money, on the one hand, and the paper money, on the other, results in practice in everyone making full use of his right to pay with paper money at its nominal value, whilst the original money either disappears from circulation or else is given and received only with a fluctuating premium over its nominal value. The value of the unit of money does not, therefore, in this case depend any longer on the original money metal, but on the paper money of the country, in terms of which the rate of exchange of the original metallic money is at times subject to violent fluctuations.

Thus, using as a criterion the existence or non-existence of a connecting link between money value and a money substance, we can distinguish two main groups of currency systems—normative currencies and free currencies.

In the case of the former the precious metal with which the value of money is definitely linked up is called the *standard* or *standard metal*.[4]

[1] See above, p. 76. [2] See above, pp. 74, 75, and 200.
[3] See above, pp. 183, 190, and 217.
[4] We need not for the present go beyond merely establishing the existence of a definite equation of value between the money substance and the money unit. We shall reserve for subsequent discussion the question

¶ 3. The Subgroups of Normative Currencies

Normative currencies take many forms distinguished from each other by their standard metal and by the manner in which the connection between money value and standard metal is produced. First and foremost we have the simple systems of the *gold standard* and of the *silver standard*. The gold standard currency is the one in which the value of the money is definitely related to a specified quantity of gold; the silver standard is that system of currency in which the value of the money is definitely related to a specified quantity of silver. In accordance with what has been said concerning the connection between money value and standard metal, only gold in the case of the gold standard, and only silver in that of the silver standard can be freely coined. This, however, does not exclude the possibility of coining freely from the other metal, trade coins which are outside the monetary system and have a variable rate in terms of the actual currency of the country. Both systems are "monometallic," as both are based on but one standard metal.

As against these we have "bimetallic" systems in which both metals function as standard metals, either concurrently side by side, or, under certain conditions, alternately.

One of these systems, the *parallel standard*, is built upon gold and silver, both metals being freely coined, and each being the basis of its own particular monetary system which is independent of the other. It represents the simultaneous existence of two independent monetary systems of which the one is based on gold and the other on silver.

The parallel standard is not a case of a single uniform currency, but of two different and co-equal types of currency existing together within the same system—the one type being equated in value to gold and the other to silver. The money does not here present the aspect of a single entity, the characteristic of uniformity being sacrificed intentionally and of set purpose. In every contract for payment it is necessary to specify whether the payment is to be made in gold money or in silver money.

The *double standard*, however, is based on the assumption that the monetary system is a single entity. Both precious metals serve as the basis of currency; both are freely coined and connected with each other by a definite relation of value which binds them into a whole. This relation of value between the two metals determines the metallic content of the coins struck from

of whether—in any case in which this fixed equation subsists—the value of gold is conditioned by that of the money unit, or *vice versa*, or whether it is a matter of mutual interaction.

gold and silver; the nominal value of the coins being expressed in one and the same unit of currency. Thus, for example, the basis of the French double standard was the equation of value: 1 kg. of gold = 15½ kg. of silver, and the unit of currency of the system, the franc, was taken as corresponding in value to 5 gr. of standard silver of $\frac{9}{10}$ths fineness. This then gave for francs a gold equivalent of $\frac{5}{15\cdot5} = \frac{1}{3\cdot1}$ gr. of standard gold, also of $\frac{9}{10}$ths fineness, which corresponded in the case of the 20-franc piece to a content of $\frac{20}{3\cdot1}$ gr. of standard gold. The conception of the monetary system as an indivisible entity finds its expression in this case in the fact that gold and silver coins can be substituted for each other at the nominal value assigned to them, so that the debtor can pay in silver or in gold coins, or in both, at his own option. As, however, the ratio of value between gold and silver is liable to fluctuate, the linking up of money value to both precious metals at the same time becomes, in practice, fictitious. A franc cannot at the same time be worth 5 gr. of standard silver and $\frac{1}{3\cdot1}$ gr. of standard gold if 5 gr. of standard silver are not equal in value to $\frac{1}{3\cdot1}$ gr. of standard gold. So long, therefore, as the ratio of value between the two precious metals actually subsisting in the open market does not exactly coincide with the legal ratio—and such a coincidence occurred only quite exceptionally, at isolated points of time, in the historical examples of the double standard system—only one, but not both, of the two metals can at any time be the determining factor of money value. The peculiar mechanism of the double standard brings with it the phenomenon that, in actual practice, the metal whose value coincides with that of the money unit is always the one which is valued too highly in the legal ratio as compared with the ratio in the open market. It has been shown in the historical part of this book, by a series of cases of primary importance in the history of the development of monetary systems, that whenever the actual ratio of value deviates appreciably from the legal ratio, it is the legally over-valued metal that tends to monopolise circulation and to drive the other metal out. The latter keeps away from the mints as it is worth less there than in the open market. Coins struck from it are melted down in considerable quantities as the metal which they contain has, in terms of the other metal, a value in the open market higher than the nominal value of the coins. In most cases the shifting of the actual ratio between the two metals affects the coined money, and a difference of value arises between gold and silver money which, owing to the fact that the debtor is entitled to make payment in the coins which abound in circulation and are composed of the less valuable metal at the nominal value of such coins, shows itself in the fact that the coins struck from

the more valuable metal command a premium on their nominal value. The value of the unit of money thus comes into line with that of the metal which is overvalued in the legal ratio; the other metal loses its importance for the determination of the value of money and the coins struck from it begin to fluctuate in value and drop out of the system.

Every change in the situation of the precious metals in the market, which reverses the relation between the actual and the legal ratios of the two metals, necessarily alters in this system the conditions governing the circulation, and changes the metal whose value is definitely equated to the value of money. So long as the fluctuations in the ratio of value on the bullion market oscillate round about the legal ratio, each metal in turn becomes the basis of the value of money. The double standard has, therefore, also been called the *alternating* or *alternative* standard. In this connection, however, it must not be forgotten that such alternation takes place only so long as the ratio of value between the metals in the open market fluctuates round the legal ratio in such a manner that first gold, then silver, appears overvalued. As soon, however, as the actual ratio of value departs permanently from the legal ratio in one direction or another, the metal with the falling value forms the permanent basis of the currency. The double standard then actually becomes a single standard. An example of this is supplied by currency conditions in Mexico. The silver standard which existed in that country up to the year 1904 originated in a double standard with a relation of 1: 15½ between silver and gold. From the time when, in the first half of the seventies of the nineteenth century, the value of silver began permanently to remain at a level lower than this ratio, and tended to depart even further from it, the double standard became a dead letter and the actual currency was practically indistinguishable from a silver standard pure and simple.

"Bimetallism" is a term which has been invented to designate a double standard system which was to be introduced by agreement into the most important civilised countries and would accordingly, it was hoped, be strong enough to make impossible any departure of the actual ratio of value between the two precious metals from that upon which the system was based. If this expectation had been realised, then this system would no longer in fact have been an alternative system, but one in which the value of money would have been linked up with both metals at the same time; these metals being themselves linked together in one and the same unit of value. The practicability of this system will be discussed in another chapter.

¶ 4. The Subgroups of the Free Currencies

Within the sphere of *free currencies* we distinguish the following kinds:—

1. The simple paper currency in which paper notes are legal tender at their nominal value, and, not being convertible into metallic money, the latter having disappeared from circulation or gone to a variable premium, are universally used as money. In these cases the value of the money must, when measured by the value of the quantity of metal on which it was originally based, be subject to continual changes which show themselves in the quotations of the original metallic money, or directly in the price of the original standard metal, or, if such prices are not quoted, in the rates of exchange for foreign currencies. The deviations of the value of the paper currency from the original value of money have no lower limit, as paper money can depreciate almost to zero. An upper limit for such deviation is, however, provided by the continuing possibility of free coinage of the original standard metal. The notes cannot rise above their par value in the metallic money in terms of which they are expressed, and the metallic money cannot for its part rise above the value of the standard metal plus seigniorage.

2. Currencies with suspended or restricted coinage of the original standard metal. In practice only those currencies have to be considered in this connection which were originally based on silver, but the money value of which has become, by reason of the suspension of the coinage of silver, independent of the continually depreciating silver.[1]

The value of coined money in these systems can rise substantially above that of the corresponding quantities of precious metal, as the State does not undertake to mint coins upon demand for every applicant and in whatever quantities he may desire. If there is a plentiful supply of the metal and a strong demand for coin, the value of the coins must, as many examples have shown, rise above its original metallic equivalent.

In contrast to simple paper currency systems in which the upward movements of money value have a fixed limit set by the original metallic equivalent of the money unit, the currency

[1] The great increase in the production of gold, and the enormous fluidity of money which obtained in Europe during the middle of the nineteenth century, gave rise, at all events in English newspapers, to a discussion of the suspension of gold coinage. The movement was not, however, taken seriously anywhere. During the War the Scandinavian States ceased, as shown above on p. 217, transforming gold into money freely, and some difficulties arose also in Spain. The end of the War, however, saw also the end of this state of affairs which had throughout been regarded as exceptional and resulting from war conditions.

systems under discussion have on their part a fixed lower limit set by the metallic content of the circulating money. The value of the Indian rupee could not, even after the suspension of free coinage of silver, sink lower than the value of the silver contained in the rupee, and could only depart from its metallic equivalent in the upward direction.

In such an organisation of currency a limit may be set to the upward movements of money value by allowing free coinage of that precious metal which had not heretofore been a standard metal, and by giving the coins so struck legal tender quality at a specified nominal value side by side with the old money. The same result can be got by more complicated measures.

Thus, for example, there was no limit to the possible increases in the value of Dutch money after the suspension of the free coinage of silver, so long as the free coinage of a legal tender coin, represented by 10-guilders gold, had not begun. Again, when the free coinage of silver in India was suspended, the possible increases in the value of the rupee were definitely limited in advance by the mints receiving simultaneously with the order for the suspension of free coinage of silver (June 1893), an order to give fifteen rupees per sovereign in exchange for deliveries of English gold money. From that time onwards—that is, for more than six years before the sovereign was made legal tender in India (September 1899), the value of the rupee in English money could not rise above $\frac{1}{15}$th of a pound sterling, *i.e.* above 16d. In this way Indian money was given an upper limit of value, regulated by the value of English money, which, in turn, was linked with gold by way of the free coinage of gold.

If the value of money in these currency systems remains permanently at its upper limit, gold appears, in practice, to be just as much the basis of the value of money as silver does in a double standard system when silver continues to depreciate. So long as gold coins are not admitted into the system as legal media of payment, as was the case in India before September 1899, the money value is in these interesting circumstances conditioned by a metal which is not actually in circulation as currency, and the monetary system appears as a gold standard currency without any gold money.

3. The third kind of system is a remarkable combination of the two which have just been examined, and consists of a paper currency with suspended coinage of the original basic standard metal. In such a system an inconvertible paper currency, the value of which can fall to an unlimited extent below its original metallic equivalent, exists concurrently with a suspended or restricted coinage of the original standard metal which allows of increases in the value of money over and above the erstwhile

metallic equivalent—such increases being in fact unlimited, so long as no limit has been set in the manner indicated above. A typical example of this is the Austrian currency from 1879 onwards. In that currency inconvertibility continued in operation and the free coinage of silver was suspended. Consequently no limits in terms of the value of a third commodity were set to the value of money in either an upward or downward direction. This continued until the year 1892, when gold coins with free coinage were introduced as full legal tender. .

¶ 5. Differentiation between Currency Systems on the Basis of their Formal Characteristics

The course pursued by the value of money, which is the basis of this classification of the currency systems, is very largely conditioned by the formal construction of the monetary apparatus which—as has already been mentioned—can also be made the starting-point for a classification of the currency systems. The existence or non-existence of free coinage for one or other of the metals, the existence or non-existence of a legally fixed relation between the nominal values of silver money and gold money when both metals are freely coined, the convertibility of paper notes, and, finally, the legal tender power of the money struck from one or other of the metals—all have a bearing on the course pursued by the value of money. From this it might appear that the classification based on the legal constitution of the monetary apparatus ought to coincide in all respects with that based on the course taken by the value of money. Such a coincidence exists, however, only in a general way. In matters of detail, the legal classification differs from the economic in those systems in which the value of money has a certain amount of elbow-room within the outlines fixed by the legal constitution of the monetary apparatus, so that the actual course of the value of money is determined by certain factual conditions lying outside the scope of the monetary apparatus. It must be observed that in describing some important categories of currency systems, the legal classification uses the same terms as does the economic classification, the starting-point of which is money value, although it happens occasionally that some particular currency, actually in existence, must be placed in a legal class differing from the economic class. This has led to some confusion and controversy; opinions have moved on two different planes, while at the same time it has been agreed that from a combination of both aspects, which must be kept separate theoretically, a classification and definition of the various currency systems can be obtained which suffices for practical requirements.

Of the legal characteristics, the most important is that of legal tender, which we have already described as the fundamental property of money in the more restricted legal sense. In a classification of currency systems, from the legal point of view, this characteristic must be the starting-point, other characteristics being considered merely as modifying factors.

This leads to a fundamental division based on whether metallic money only, and side by side with it perhaps paper notes convertible into metallic money, or whether only inconvertible paper money, constitutes the legal medium of payment, *i.e.* a division into the metallic standard and paper standard currencies.

The metallic standard currencies can be further subdivided according as coins made of one of the two precious metals or both of them are the only full legal tender. The former are "monometallic," and the latter bimetallic money systems. If gold coins only are full legal tender, the system is one of a gold standard; if only silver coins are such, the system is one of a silver standard. In the case of the bimetallic systems a distinction must be drawn between those in which coins struck from both metals are, for purposes of payment, interchangeable at a legally fixed ratio of value and those in which this is not the case. The former are double standard, and the latter parallel or alternative standard systems. Further modifications arise from the existence or non-existence of the free right of coinage. The only practical cases to be considered in this connection are those in which free coinage of the standard metal has been abolished and in which a double standard is suspended in the case of silver. The former system may be described as a silver standard with a restricted coinage; the latter system may, from the legal point of view, be more correctly designated as an incomplete double standard, but is, in fact, frequently called "a limping gold standard," [1] a term which stresses, as against the most essential legal characteristic, namely, the full legal tender powers of coins of both metals, the economic consideration that the value of the money is linked up with gold. This connection with gold is, nevertheless, not absolutely secured merely by the free coinage of gold. It is also, in practice, necessary that the silver coins of full legal tender, the free coinage of which has been suspended, should not take up too much of the circulation. Otherwise the possibility of a difference in value arising between the silver and gold coins cannot be excluded; and such a difference must, in view of the fact that silver coins are of full legal tender at their nominal value, necessarily take the form of a fluctuating premium upon the gold coins: the value of money being thus determined by the silver coins, the value of which can vary within the limits provided

[1] *Étalon boiteux.*

by their own silver contents and the gold equivalent of their nominal value. Such a limping double standard can, therefore, be regarded, from the point of view of money value, as both a gold standard and a free standard.

¶ 6. Collation of the Currency Systems of Practical Importance

Taking the economic and legal characteristics indicated above, and summarising them as applied to those currency systems which are of practical importance, we obtain the following classification which is sufficient for practical purposes.

1. *The Simple Gold Standard.*—This is the currency system in which there exists an equation of value between the money unit and gold, in which only gold is freely coined and only gold coins —though possibly also paper notes convertible into gold coins —are full legal tender.

2. *The Limping Gold Standard.*—Here the conditions are the same as in the case of a simple gold standard except for the existence as full legal tender, side by side with gold coins, of certain silver coins not freely coined.

3. *The Silver Standard.*—In this system there exists a fixed relation of value between the money unit and silver. Silver is freely coined and only silver coins are full legal tender. In so far as gold coins are available, such coins stand outside the silver standard system as trade coins with a fluctuating rate of exchange.

4. *The Double Standard.*—Gold and silver are both freely coined. Coins of both metals are full legal tender and can be substituted for each other at a definite face-value, being a relation based on a legal ratio of value between gold and silver. The money unit is at all times equated in value to the metal which is overrated in the legal ratio of value, as compared with the ratio obtaining on the market.

5. *Parallel or Alternative Standard.*—Gold and silver are both coined, and the coins of both metals are legal tender. They stand to each other, however, not in a legally fixed relation of value and are not interchangeable as full legal tender coins. All contracts of payment must, therefore, be expressed in terms of either gold or silver money. The value of the gold coins is linked up with that of gold, and the value of the silver coins with that of silver.

6. *Silver Standard with restricted Coinage.*—In this case the value of money can rise above that of its original silver equivalent, and can do so with or without limit.

7. *Paper Standards.*—In these cases inconvertible paper notes

are legal tender side by side with the original metallic currency. The value of the money can move freely below its original metallic equivalent. If the free coinage of the original standard metal is stopped, the movements of money value have no limit in the upward direction.

Subsection II. The Internal Organisation of Monetary Systems

¶ 1. Unit of Account, System of Account, and Divisionary Money

The internal organisation of a monetary system is a structure systematically built up from a number of types of money representing different values. This structure, certain parts of which we have had to consider, must now be studied as a whole.

In all cases which occur in practice we deal with money in specific sums, in specific quantities, and not simply with money *per se*. Money, like all quantitative conceptions, such as length, weight, bulk, can only be expressed by a multiple or a fraction of a fixed unit. In our systems of linear measures a specific length, such as the metre or yard, functions as a unit in which all lengths can be expressed, just as in our system of weights a specific weight quantity, such as the gram, is the unit or standard by which all quantities are measured. In the same way money requires a specific quantity to serve as the unit in terms of which all sums of money can be expressed. This unit on which the monetary system is based is called the *unit of account*, or the *monetary unit*, or, as all other economic values are habitually expressed in money, the *unit of value*.

The unit of account has in the various monetary systems different names and represents different quantities of value. Thus, for example, in the German monetary system it is called the "mark," in the French, Belgian, and Swiss systems the "franc," in the Italian the "lira," in the Dutch the "gulden," in the Russian the "rouble," in the Austrian the "krone" or "crown," in the English the "pound sterling," in the American the "dollar," and so on.

Just as from the units of length, measure, and weight, multiples and subdivisions are formed (centimetres, kilometres, decalitres, hectolitres, milligrammes, kilogrammes, etc.), so this is done in the case of the unit of account in monetary systems. The numerical construction of the divisions, that is to say the *system of account*, varies with the monetary system. But as in the continental system of weights and measures, so here the decimal division has in recent times been the most commonly adopted.

The mark is divided into 100 pfennigs, the franc into 100 centimes, the guilder into 100 cents, and the dollar into 100 cents. On the other hand, the Prussian taler contained 30 silver groschen and the silver groschen had 12 pfennigs. The South German gulden had 60 kreutzer. The English pound sterling is divided into 20 shillings and the shilling into 12 pence. The advantages of the decimal system consist in the extraordinary ease with which calculations can be made, and as calculations are amongst the most important operations connected with the use of money, this greatly facilitates the general use of money. The connection between the earlier systems of account and the numbers which are involved in the subdivision of time (12 months in the year, each containing 30 days, which are in turn divided into 24 hours) has at times been claimed as an advantage possessed by the old systems; but even though this analogy may in individual cases make calculations more easy, it cannot possibly bear comparison with the ease introduced into the use of money by the decimal system. Where divisions of the money unit not based on the decimal system still subsist, as, for example, in England, they are retained simply by force of custom and on account of the conservatism of the commercial world and not because they offer any practical advantages. The numerical construction of the monetary system, based on the unit of account, is the factor which determines the system of "divisionary money." The unit of account itself, its subdivisions, and its multiples appear in concrete form as coins and paper notes. The names of the coins are at times different from those of the unit and its subdivisions. Thus the unit of account of the English monetary system is the "pound sterling," whilst the gold coin which is the embodiment of this unit is called the "sovereign." The English 5-shilling piece is called a "crown," although calculations are made only in *pounds sterling* and *shillings* and not in *crowns*. In Germany, by an Imperial decree dated the 17th February 1875, the Imperial gold coin of 10 marks was given the official name of "krone" (crown) and the 20-mark piece that of "double crown," although Article 1 of the Currency Act expressly provided that the "mark" was the unit of account.

The basic rules to be followed when choosing the individual coins have already been explained. The Currency Act determining the divisionary money scheme also usually lays down the necessary provisions regulating the metallic content and the impression of the various types.

¶ 2. Weight, Standard, Content, Fineness, Limits of Error, and Tolerated Deficiency of Coins

The system of weights employed in coinage differs here and there from the ordinary system of weights. Thus in the German States the "Cologne mark" of the Middle Ages was retained as the standard weight for coinage up to the year 1857. (It was fixed at 233·85555 grams in 1838 for all States of the Customs Union.) As a weight for gold the mark was divided into 24 carats of 12 gr. each, and for silver into 16 lots of 18 gr. each. The Vienna Currency Convention of 1857 introduced as a standard weight for coinage the Customs pound of 500 gr., which differed from the ordinary pound weight by being divided not into grams but into 1000th parts. This standard weight was retained in the currency legislation of the Reich, although already on the 17th August 1868 an order relating to weights and measures issued by the North German Confederation introduced the kilogram as the standard weight of commerce. It was not until the 1st June 1900 that an amending order abolished the special standard weight for coinage and replaced it by the ordinary weight of commerce. Just as in early days in Germany, so in England to this day, the standard weight for coinage which is also used in the trade in the precious metals differs from the commercial weight. The latter is the so-called "pound avoirdupois" of 453·593 grams, whilst the standard weight for coins and for precious metals is the "troy pound" of 373·742 grams.

The coinage standard expresses the factor by which the unit of account of the monetary system must be multiplied to obtain the unit of weight of the standard currency metals. So long as the coin which represents the unit of account is struck from the standard metal as a coin of full value, as was formerly the case with the talers and gulden of the German silver currency, the coinage standard represents a simple relation. The standard of the taler currency was "the 30-taler standard," *i.e.* 1 lb. of fine silver produced 30 talers. The South German coinage system was described as the "52½-gulden standard," which meant that 52½ South German guldens were obtained from 1 lb. of silver. The Austrian system was known as the "45-gulden standard," which meant that 1 lb. weight of silver gave 45 Austrian gulden. In the case of most modern monetary systems, however, the unit of account is not made out of the standard currency metal. The unit of account of the German gold standard, the mark, was represented by a silver coin, although this coin derived its value from gold. The connection between the coined unit of account and the standard metal was in this case not of a corporeal nature; but the mark derived its value from a gold coin which for its part was the element which determined

the standard of coinage of the German monetary system. It derived its value from that gold coin of the Reich the coinage of which was provided for in the first paragraph of the first German currency law, and the tenth part of which gold coin was the "mark" which constitutes the unit of the Imperial currency in accordance with the first article of the Currency Act of 1873. As 1 lb. weight of fine gold gave 139½ 10-mark pieces, 1395 marks went to a lb. of fine gold. In actual fact 1395-mark pieces were not coined from a lb. weight of fine gold, but only gold coins to the nominal value of 1395 marks. The coinage standard of the gold standard currency of the Reich was thus a "1395-mark standard."

The coin from which the unit of account is derived, either directly by being the embodiment of the unit of account, or indirectly by being a fraction or a multiple of the unit of account, may be described as the "basic coin." In the old German silver standard the taler or gulden was the basic coin, and these pieces embodied at the same time the unit of account. In the Imperial standard currency the Act of 1873, however, made the 10-mark piece the basic coin and defined the unit of account as one-tenth part of this basic coin. The fact that the unit of account was embodied in a silver coin was of no importance as far as the unit of account itself was concerned.

The standard of coinage gives the standard metallic content of the basic coin. As the content of different coins struck from standard metals varies, as a rule,[1] in relation to their face value, the coinage standard gives at the same time the content of the several coins struck from the standard metal. The coinage standard does not, however, give the content of the coins of the monetary system which are coined from another metal. Thus in a gold standard it does not give the metallic content of the silver, nickel, and copper coins. The content of these coins must, so long as no universally recognised relation of value between the various currency metals subsists, be regulated more or less arbitrarily by currency laws.

The quantity by weight which a coin contains is its *content of fine metal*, which is to be distinguished from the gross or crude weight, because the metal employed for coins contains, for reasons already stated, an addition of copper. The relation of the content of fine metal to the crude weight is called the "fineness." This used to be expressed in Germany, in the case of gold, by quoting the carats and grains of fine gold, and in the case of silver, the lots and grains of fine silver which went to a mark of the alloyed metal. Thus, for instance, the Prussian currency law of 1821 gave the fineness of the Friedrichsdor as

[1] Silver token coins in a silver standard currency are an exception.

21 carats, 8 gr., and the fineness of the silver taler at 12 lots. In most countries, recent currency laws specify the fineness of coins in 1000th parts. Thus, in Germany, para. 4 of the law of the 4th December 1871 provides that: "The content of the gold coins of the Reich is fixed at 900 thousandth parts of gold to 100 thousandth parts of copper." On the other hand, in England, fineness is still expressed in the old way by quoting the amount of fine gold contained in the troy lb. of standard gold of 24 carats of 4 gr., each divided into 4 quarters, or in the case of silver by quoting the amount of silver contained in the troy lb. of standard silver of 12 ozs. of 20 dwts. each. Most of the larger States have adopted for their gold coin, and for the greater part of their silver coins, the fineness of 900 thousandth parts of precious metal and 100 thousandth parts of copper. The most important exception is provided by England, whose gold coins have a fineness of $\frac{11}{12}$ths (22 carats),[1] and whose silver coins have a fineness of $\frac{37}{40}$ths (11 ozs. 2 dwts.). The metallic composition which represents the prescribed mixture for coins is called "standard metal," "standard gold," or "standard silver."

In order, as far as possible, to keep the actual constitution of the coins in conformity with the rules prescribed by currency legislation, it is necessary to prescribe not only the most exact possible coinage, but also to provide for the withdrawal from circulation of coins which have become damaged or worn.

Absolute exactness in the fineness and weight of individual coins could only be secured by a disproportionate expenditure of effort. Currency legislation has, accordingly, fixed so-called "limits of error" or "mint-remedies" within which coins may vary in size and weight without losing their validity. For the German crowns and double crowns, these limits were fixed at 2 thousandth parts in fineness and $2\frac{1}{2}$ thousandth parts in weight. The silver coins of the Reich could vary by 3 thousandth parts in their fineness and by 10 thousandth parts in their weight. In other countries similar limits of error have been fixed. This legally permitted variation from the standard weight and degree of purity of the coins struck is called the "remedy" or "tolerance." Abuse of these limits of error, such as frequently occurred in earlier days can be safeguarded against. Thus the currency laws of the German Reich allowed variation in the individual coins struck, both gold and silver, but they did not allow any variation in the total metallic composition of which the coins were minted. This had to conform with absolute exactness to the contents and weight laid down by the law. (Para. 4 of the Currency Law, edition of the 1st June 1909.) The testing of the fineness of standard

[1] [Before the recent debasement of the coin in consequence of the high price of silver.]

metal and of the weight of the little discs is called "adjusting" ["*Justierung*"]. (*Cf.* Trial of the Pyx.)

For coins in actual circulation limits of wear are generally defined, such limits being less restricted than those laid down for deviations from the normal weight in the mintage of coins. It is, however, not generally thought necessary to fix limits of wear for token coins, the value of which is in any case assumed to be independent of their metallic content. The German gold coins of the Reich were allowed to lose in wear up to 5 thousandth parts of their normal weight, and as long as this loss was not exceeded it was compulsory to accept them in payment as if they had been of full weight (para. 11 of the Currency Law of the 1st June 1909). For token coins it was simply provided that "silver, nickel, and copper coins of the Reich which have been so long in circulation that they have substantially lost in weight and have their impression largely obliterated are to be called in for account of the Reich" (para. 12 of the Currency Law of the 1st June 1909). The minimum weight at which coins may circulate as full legal tender is called their *tolerated weight*. This is the normal weight less the *tolerated deficiency*.

The treatment of coins which have lost more weight by wear than the tolerated deficiency differs in various countries. In Germany such coins had to be accepted at their full nominal value by all the branches of the Imperial Treasury and of the Treasuries of the Federal States and were melted down for account of the Government. The resultant loss was borne by the community. In England, however, excessively worn coins cease to be legal tender, not only against the general public but also against the Treasury. The Government is under no obligation to call in such coins, and everyone is entitled to cut in two any which are offered to him in payment and to return them to their owner. So long as an effective gold currency existed in England the banks, in particular, made use of this right.

In practice the German system proved better than the English. In England it was notorious that worn coins were kept away from the banks which made use of their privilege of cutting them. They circulated mainly in the provinces and there underwent an attrition far greater than the margin of tolerated deficiency. In this way the object of maintaining the circulating currency as far as possible free from worn coins was not attained. In Germany, however, where none needed to fear any loss from payment in worn coin, the tendency was for these to find their way back to the banks, which then delivered them up to be melted down. Such deliveries could be made not only directly to the Imperial Treasury and to the Treasuries of the various States, but also through the provincial, communal and private pay-offices, and

banks. The superiority of the German method is clearly shown by the fact that England found it necessary on several occasions to call in worn sovereigns and to re-coin them for account of the State.

¶ 3. Methods of Providing Currency

Provisions regarding the coins to be minted and the constitution of such coins are of a technical nature. They merely tell us what actual characteristics, in the matter of metallic content, individual pieces which are to rank as money must possess. But, as was shown in the historical part, technical provisions relating to the characteristics of individual types of coins do not suffice to co-ordinate these coins, especially in conjunction with the paper circulation of all modern currency systems, into a comprehensive uniform system, nor yet to determine the relation of value between money and money metal. In fact the technical provisions must be supplemented by a number of legal regulations governing the conditions under which money is created, particularly in regard to conversion of metal into money, the legal properties of the various types of money, and their relations to one another.

In a modern monetary system, metal, as such, or indeed any other substance, cannot constitute or rank as money, or indeed become capable of transformation into money directly. On the contrary, the State is the only authority which can provide or create money either directly or through some agency, such as a note-issuing bank to whom it has delegated this right. The State can retain its freedom of action or give a free hand to such agencies, or it may impose definite rules upon itself or the agencies, as the case may be, and in this connection it can also adopt a different procedure for different types of money.

It is a matter of fundamental importance to determine whether, where any particular metal is concerned, there exists an unrestricted right to convert it into money or not—that is, whether every private individual, in possession of a quantity of this metal, can present it to the authorised agencies with a demand that it should be transformed into money.

The simplest and best-known special case of unrestricted transformation of a metal into money is that known as "the right of free coinage," or "coinage for private account." The State will mint coins out of any quantity of metal delivered to it, either making no charge to the person delivering the metal, or merely a very small charge to cover cost. The person delivering the metal receives in coin from the mint the quantity of the metal delivered up by him either without any deduction or with a very small deduction for seigniorage.

Such a right of free coinage has, in a certain sense, existed from the earliest days of coins, and it continued even when the fiscal principle had become dominant. The right of free coinage was especially acceptable to the commercial theories which were in vogue at the time when the monetary organisation in Europe underwent its greatest expansion. These theories led to the prevalence of the view that every influx of gold and silver was an unquestioned advantage to the community, and that whatever precious metal people could lay their hands on should be transformed into coin. It was even frequently laid down as a requirement that the whole output of the native production of the precious metals was to be delivered to the mints for coinage. Where there were no mines it was often prescribed that all precious metals, whether in bars, pieces, or foreign coins, were to be delivered to the mints, or to an exchange office, at a fixed price. Even where such provisions did not obtain, or had become obsolete, the mints still continued the practice either of purchasing precious metals offered to them at a price which varied only within narrow limits and was not much lower than the coinage value of the metal, or else of striking coins for the person delivering the metal at but a small charge.

Later on this practice was established by law. In England, as long ago as 1666, the mints were required by law to coin gold and silver upon demand and free of charge for everyone. This example was followed by most States, either for one or for both of the metals, with this difference, that a small charge was made for coins struck on private account. In Germany this *right of free coinage* was not made a legal requirement until a comparatively late date. In Austria the silver coins which were introduced in accordance with the Vienna Convention of 1857 were by law freely coined at a seigniorage of 1 per cent., but in the German States free coinage actually existed only in so far as the mints purchased silver at a price of which public notice was given and which varied with supply and demand but within very narrow limits. In these States the mints were not, however, under any legal obligation to make such purchases. Not until the Currency Law of 1873 was the principle of the right of free coinage recognised, and it was then recognised only for gold.

Free coinage is only a special, although in practice a most important instance of the unrestricted power of conversion of metal into money. It is, of course, not an actual but a legal conversion. It can take place without any actual coinage of the metal which has been delivered. Thus, for example, the Hamburg mark banco was pure book money based on fine silver in bars, in the case of which there was no question of coinage. But, as has been shown elsewhere, the mark banco was in no way

identical with a definite quantity of fine silver. Just as silver, in order to become a taler, had to be brought to the State mints for coining, so also the mark arose from silver only because fine silver was brought to the bank to be officially tested and weighed, and the amount in mark banco corresponding to its weight was credited in the books of the bank to the person delivering the silver. As the bank was required to accept fine silver in any quantities from the members of the Hamburg merchant community, and to place it to their credit, we find here an example of unrestricted conversion of silver of such a nature that its effects were in every respect similar to those of free coinage, although no question of coinage arose in any shape or form.

The position is similar wherever the central banks are under compulsion to issue in exchange for gold deliveries, bank notes in definite amounts per unit of weight.

Thus before the War the Bank of England for many decades purchased gold at the fixed rate of 77s. 9d. per ounce standard at a mint price of 77s. 10½d. per ounce standard. Similarly the German Reichsbank was required by the Bank Act of the 14th March 1875 to give in exchange for gold in bars its notes at the fixed rate of 1392 marks per lb. weight fine, the mint price of the gold being 1395 marks per lb. weight of fine gold. As the German mints charged private individuals a seigniorage of three marks, those who delivered gold to the Reichsbank received in exchange the same amount in notes as they would have received in gold coin. On the other hand, in England the Bank made a deduction of 1½d. per ounce standard from the amount to be delivered by the mint, which made no charge for seigniorage. Nevertheless, in England also, gold was regularly brought to the Bank by private persons, where it would be exchanged for notes without any delay; whereas in the case of gold delivered to the mint, a period had to elapse before the delivered metal was transformed into coin, and this entailed a loss of interest. For its part the Bank made use of the coins minted from its purchase of bars and foreign coins to meet public requirements.

Finally, we have cases in which the State takes upon itself the obligation to issue silver coins in exchange for gold delivered to it, these constituting the principal circulating medium of the country. Thus the Indian Government, at the time of the suspension of free coinage of silver, decreed that the mints were to deliver, in exchange for English gold money, silver rupees at the rate of 15 rupees for a sovereign, and this they did six years before the sovereign was made legal tender and without there being to this day in India itself any free coinage of gold. In the same way the Mexican Currency Law of 1904 provided that the mints should give, in exchange for deliveries of gold in bars, silver pesos

at a definite rate, namely, the rate upon which the new Mexican gold currency was based; at the same time, however, free coinage of gold pesos was sanctioned.

All these cases have, therefore, one feature in common with free coinage, namely, that the person delivering a legally specified metal may demand in exchange certain types of money at a legally fixed rate of exchange.

In all monetary systems which provide for an unrestricted right of changing certain metals into money, and in which the exercise of this right has not actually become impossible on account of some special circumstances, the readiness with which the money of that metal is provided automatically regulates itself by the conditions of the bullion and money market. Control by the authorities can only influence it within very narrow limits. Such an influence may be exercised by the discount policy of the large note-issuing banks.

But even in monetary systems which provide for a particular metal being freely changed into money, types of money exist which are created independently of deliveries of this metal.

This applies especially to token coins. As far as these are concerned there are imperative reasons why the State should reserve to itself the regulation of the extent of their production. This is done either by the volume of fresh issues of token coins being from time to time fixed in absolute amount by special legislation, as in England and the U.S.A., or by prescribing in the currency laws *per capita* quotas for the coinage of token money—quotas which increase the possible fresh mintages of these coins as the population increases. We find examples of this in the States of the Latin Union and in Germany, where the last quota fixed the limit of coining of silver money at twenty marks per head of the population.

A similar type of case is instanced by full legal tender coins which are not composed of the metal whose coinage is unrestricted, *e.g.* silver coins in a currency based on the gold standard. In Germany the coinage of talers was completely suspended as from 1871. The same was done in the States of the Latin Union with the silver 5-franc pieces at the end of the seventies of the last century. In the U.S.A., where in the year 1878 the Bland Act re-enacted the coinage of silver dollars of full legal tender within the gold standard, it was provided that the limit up to which these coins should be struck should be between 2 to 4 million dollars per month. The Sherman Act of 1890 provided that the normal silver purchases for monetary purposes by the American Treasury should be 4½ million ozs. of fine silver. In India, after the suspension of free coinage of silver, rupees were coined only by virtue of special laws. In fixing the quantities to be coined, the require-

ments of the public for token coins were the chief factor taken into account. At times, however, other aspects lying outside the sphere of the monetary system entered into the question; in particular the desire to raise the price of silver. This last factor especially influenced the coinage of silver dollars in America.

It is, of course, obvious that in so far as paper tokens of all kinds are concerned there can be no question of freely changing the substance into money. It can, it is true, be quite consistent with the monetary machine that paper notes should be issued in exchange for deliveries of the standard metal. But in such a case it is not a question of freely changing paper into money, but of changing precious metal into money. Apart from this, the creation and issue of types of paper money require special regulation. The rules fall into two categories—they either aim at adjusting the circulation of money to the public demand, or else they spring from considerations which lie outside the sphere of the monetary system, such as considerations appertaining to public finance.

The latter are mostly of primary importance in connection with actual Government paper money. The economic adjustment of the circulation of money to the demand for it is, however, the actual *raison d'être* of bank notes.

This was particularly marked in the monetary machine of the German Empire, created by the legislation of the first half of the seventies of last century.

The German State paper money, which was then issued to take the place of the extremely varied paper money of the individual States, consisted of Imperial Treasury notes. If the reader will glance back at the history of the origin of these notes as set out on p. 209, he will see that the only reason for the creation of these money tokens was a fiscal one. It was desired to facilitate the withdrawal by the various States of the territorial paper notes issued by them (similarly for fiscal reasons) without at the same time placing upon the Imperial Treasury the additional burden of having to subsidise the Federal States. The amount of Treasury notes to be issued was, accordingly, so fixed as to suffice for the calling in of the territorial paper moneys in accordance with the conditions laid down by the law of the 30th April. In so far as this amount exceeded 120 million marks, it had to be withdrawn from circulation within fifteen years at the cost of the various States which had received this excess (more than three marks per head of population) by way of advances for withdrawing from circulation the excessive amounts of territorial paper money which had been issued by them. Some justification for fixing the amount at this figure was found in the fact that the Reich had deposited the same amount of 120 million marks in actual gold coins of the Reich as a war treasure in the Julius

Tower of Spandau. Although, strictly speaking, there is no connection between the war treasure and the Treasury notes, the occasion of the doubling of the war treasure in 1913 induced the administrative authorities to double the issue of Treasury notes. The real motive was the desire to strengthen the war treasure of gold coins without involving the Reich in any financial sacrifices.

Although in the case of the Treasury notes issued between 1874 and 1913 there was no question whatever of any new issue, yet the notes issuable by the German banks were from the beginning intended to be an elastic part of the German circulation, and able to expand or contract in accordance with public demand. For this reason no definite amount for these bank notes was fixed by the legislation of the Reich; but only directly or indirectly limited maxima were provided, the first as regards the notes issued by private banks. The Bank Act of the 14th March 1875, Art. 16, gave to the Reichsbank the express right to "issue bank notes in accordance with the requirement of its business" without fixing any absolute maximum amount. A few indirect restrictions were made, however, such as the 5 per cent. tax on note issues exceeding a specified amount not covered by the cash reserve of the bank, and also the provision requiring one-third cover for the notes issued. Of these two indirect limitations the first could be avoided by payment of the note tax, which never prevented the bank from expanding its note circulation in accordance with its requirements, and was, in effect, suspended at the outbreak of the War. Neither did the provision regarding the one-third cover ever restrict in peace time the freedom of movement of the Reichsbank, as its actual cover for the notes was, even on the days of greatest pressure, always considerably more than the prescribed minimum. During the War, compliance with the provision as to the one-third cover was made easier for the Reichsbank by the bank being allowed to count the notes of the Loan banks as part of its cash cover.

Not until the year 1921, and then only on account of circumstances created by the Peace Treaty of Versailles, was it found necessary to free the Reichsbank from the one-third cover provision.

Within the above wide limits, which in practice provided all the margin necessary, the note issue was adjusted to the requirements of the public mainly by the note-issuing banks discounting such trade bills as complied with the requirements as to security, and either placing the proceeds to the credit of the presenters of such bills, or paying them out in the bank's own notes. The commercial world could thus, by the discounting of trade bills, obtain at any time the necessary circulating media in the form of bank notes, and by the redemption of the discounted bills could at any time divert the unrequired notes back to the bank. It was the duty of the note-issuing banks, and in particular of the Reichs-

bank, to control the call for money made upon them by so regulating the rate of discount as to avoid too great a strain upon their position, and, in particular, too great a relative diminution of their metallic cover.

So far as bank notes were concerned, therefore, money was created—and this happens wherever the bank note fulfills its proper function and is restricted to being a circulating medium adjusting itself to the economic demand for money—by the discounting of trade bills which were good security and originated in legitimate business. The rigid system which would result from a purely metallic organisation of money is thus transformed into an elastic system by the bank note based on trade bills. In view of the large periodic fluctuations to which, as will be shown in detail below, money demand is subject in a modern economic society even in times of economic and political peace, this elastic method of providing money is indispensable.

The bank note has not, however, by any means been at all times confined to the task of adjusting the circulation of money to economic demand. Such an instrument created at a negligible cost must necessarily from the beginning have been exposed to the risk of all kinds of abuses by the issuing banks as well as by the State.

The financial advantages to the note-issuing banks, as well as the financial needs of States, adversely affected the development of the bank note from the first, in much the same way as the profit derived from the debasement of coinage affected the development of coined money. But just as coinage was legally safeguarded, an attempt was made to regulate the note-issuing system so as to put an end to these abuses. In recent times, however, the issue of bank notes as the more convenient and cheaper means of providing money for the State in times of pressure has fully replaced the erstwhile debasement of coins. It is carried out by large credits being demanded by the financial authorities from the note-issuing banks, which thereupon place the equivalent of these credits at the disposal of the State in the form of bank notes, to an extent far beyond the limits of banking laws. Events in all belligerent and in many neutral countries during the War[1] show the development of the bank note as a means of providing money for the State in circumstances of extraordinary pressure. The creation of money now no longer takes place in accordance with the currency needs of the country, but in accordance with the extent of State expenditure not covered by other revenue.

This alienation of the bank note from its proper function has so increased in Germany that on the 31st December 1921 a note

[1] See above, p. 220, etc.

circulation of the Reichsbank of 122 milliard marks was contrasted with a gold reserve of only 1 milliard marks; also a total of trade bills of 1 milliard marks compared with discounted Treasury bills of the Reich amounting to more than 100 milliard marks. Since then the demands upon the Reichsbank by private individuals have substantially risen, but the Reich's own demand has risen still further. On the 29th March 1923 a note issue of 5518 milliard marks stood against, roughly, 2272 milliard marks of discounted trade bills, while the amount of discounted Treasury bills of the Reich was about 4552 milliard marks.

Thus the experience of the world during and after the War has clearly proved that the creation of money for fiscal needs is incompatible with the preservation of the metallic basis of the monetary system. The world confusion in currency conditions can be directly traced to a method of creating money, which, while it may have been occasioned by pressure of circumstance, is nevertheless unsound.

¶ 4. The Relation between the Value of Money and the Value of Bullion

The method of creating money has its peculiar importance, both as regards the relation between the values of money and of metal and as regards the co-ordination of the various types of money into a homogeneous system. Two conditions govern the fixed relation between the value of money and of a metal. There must be no restriction upon the possibility of converting the metal into money, and in order that it should be possible for types of money not consisting of the freely coined metal to be embodied in the monetary system, it is necessary that their production should not depend upon deliveries to the mint of the substance of which they are composed.

We know that free right of coinage of a metal has the effect of establishing the above relation, and a more close analysis will show how this works. If by delivering to the State mints or to the note-issuing banks an unlimited quantity of the metal used for coinage, a certain sum of coined money or of bank notes recognised as a medium of payment can be obtained—that is, a definite sum for each unit of weight of the metal delivered—it is clear that no one would sell the metal at a less price per unit of weight than that which he can certainly obtain from the mint and from the note-issuing bank (allowing, of course, for the resulting loss of interest during the time when the metal is being coined). The price of the metal cannot, therefore, fall below that of its value when it is delivered to a note-issuing bank or to the mint for free coinage. In Germany the mints were under an

obligation to coin, without restriction, gold delivered to them at the rate of 1395 marks per lb. weight of fine gold, charging a seigniorage of three marks, and the person delivering the gold could thus demand 1392 marks in gold coins of the Reich for every lb. weight of fine gold delivered. Over and above this, as the Reichsbank was required by law to issue to anyone delivering gold bank notes to the value of 1392 marks per lb. weight of fine gold, it followed that a lb. weight could not become cheaper than 1392 marks, or that the mark could not rise in value above $\frac{1}{1392}$nd part of a lb. weight of fine gold. Thus, in so far as the freely coined metal and the money therefrom are concerned, free coinage sets up a definite relationship of value, which is, that the value of the freely coined metal, measured by the money produced from it, cannot fall below the mint price (viz. the mint value minus seigniorage), whilst the value of the unit of account of the freely coined money, measured by the metal, cannot rise above the mint price. The same applies to the free exchange of the standard metal for bank notes. Therefore, for the unit of money there is, by reason of free coinage or free sale, an upper limit in terms of the value of a specific quantity of the standard metal.

This upper limit of value applies not only to the money produced from the freely coined metal, but also to the money composing the entire system. If everyone is able to obtain for each unit of weight of metal a definite sum of full legal tender coins made of this metal, then so long as the sole question arising is that of procuring legal tender money there is no reason to offer a higher equivalent in coined money made of another substance and which is also legal tender.

In this connection it is very instructive to examine what happens in the case of a paper currency where free coinage of the original standard metal continues. In Austria-Hungary, for example, the paper gulden was inconvertible as from 1858 onwards, whilst the right of free coinage of silver continued in force. The mints struck 45 gulden from a lb. of fine silver and charged a seigniorage of 1 per cent. A person delivering silver bullion was thus entitled to 44·55 gulden per lb. weight of silver. For $\frac{1}{44\cdot55}$th of a lb. weight of fine silver legal tender money to the amount of 1 gulden could be procured, even during the era of the paper currency. The gulden, as such, whether paper or not, could not therefore, so long as the right of free coinage of silver continued, be at any time worth more than $\frac{1}{44\cdot55}$th part of a lb. weight of fine silver. This upper limit to the value of the gulden of Austrian currency, in terms of silver, was for a long time purely theoretical, just as to-day in Germany where the currency is a paper one the upper limit to the value of the mark

given by $\frac{1}{1784}$th kg. of fine gold is also purely theoretical. It is, of course, well known that up to 1878–79 the paper gulden was always worth much less than its original silver equivalent, and that one had to pay much more than 44·55 gulden in Austrian currency for a lb. weight of fine silver. The silver gulden was quoted with a varying premium, and for the actual currency in circulation in Austria it ceased to have any importance, just as at the present time the gold 20-mark piece has ceased to be of any importance in connection with the value of the Reichsmark. The upper limit (in terms of silver) to the Austrian gulden became, however, of practical effect when the depreciation of silver commenced. While the price of silver expressed in the currency of countries with a gold standard kept on falling, the relation between the Austrian paper currency and such gold standard currencies remained fairly stable, which, of course, showed itself in a fall of the price of silver in terms even of the Austrian paper currency. At last the price of silver in Austrian money touched in its downward path the rate which was the basis for the free coinage of silver, and simultaneously with this the premium on the silver coins disappeared. The value of Austrian money had reached the upper limit of a definite quantity of silver fixed by the free coinage of the metal. When the ratio of value between gold and silver moved further to the disadvantage of the latter, and the value of silver expressed in terms of the money of gold standard countries fell accordingly, it followed that, if the free coinage of silver in Austria-Hungary continued, the stability which had fortunately been reached between the Austrian currency and gold currencies would become impossible. In fact, a further fall in the price of silver would still further depress the rate of exchange of the Austrian currency in terms of the moneys of gold standard countries, because so long as the free coinage of silver continued to operate, the Austrian gulden —whether silver or paper—could never be worth more than $\frac{1}{44\cdot55}$th of a lb. weight of fine silver. In order to remove this limit of value which—measured by gold standard currencies—showed a marked downward tendency, the only method available was the suspension of the free coinage of silver. This was done in the year 1879.

It is of course possible for the intrinsic contents of individual types of money to represent a higher value, relatively to the legal value possessed by them as coin, than would correspond to the upper limit fixed by the free coinage of the standard metal. The result is that, though the value of money as such is still restricted by the upper limit, given by free coinage, the coins with the higher intrinsic value, instead of being given and received at the nominal value assigned to them, are dealt in at a varying

premium, and they accordingly drop out of the monetary system altogether and cease to have any influence on the value of the monetary unit. Many examples have been given in the historical part of this book. In the modern history of monetary systems a particularly characteristic phenomenon is the disturbance produced in the monetary systems of Japan, Mexico, the Philippines, etc., by the increase in the price of silver in the years 1906 and 1907. In Japan the free coinage of gold was in force from 1897 onwards, and in Mexico from 1904. The silver content of the current silver coins represented a value which corresponded to the upper limit of value as fixed by the free coinage of gold, when the London price of silver was about 29d. per standard ounce. When the price of silver rose to 33d., the relations of the Japanese, Mexican, etc., currencies to gold and to gold standard currencies were in no way affected. The silver coins merely went to a premium and disappeared from circulation. Similar phenomena occurred when, during the War, the ratio of value between gold and silver shifted strongly in favour of the white metal.

The conditions here discussed are particularly interesting in the case of the double standard. In this case both metals are freely coined, and the coins of both metals are endowed with a specified value in terms of one and the same unit. In accordance with what has just been said, the upper limit for the money value is, in a double-standard currency, defined first by a specific quantity of gold, and then by a specific quantity of silver. If we turn back to the former French double-standard currency, we find that the upper limit to the value of the unit of money, the franc, was fixed both by a specific quantity of gold ($\frac{1}{5}\frac{1}{0}$ gr. of standard gold) as well as by a definite quantity of silver (5 gr. of standard silver). The matter was quite simple when these quantities of gold and silver corresponded in value, which, as is well known, only occurred when the ratio of value between gold and silver stood at $15\frac{1}{2}$ to 1. If, however, the two quantities of metal did not correspond in value, and thus gave two different upper limits, what then? It is in the very nature of things that one only of the two limits could be effective, and that limit would necessarily be the lower of the two. If for 5 gr. of standard silver one could obtain a franc in legal tender money, and if one could also obtain it for $\frac{1}{5}\frac{1}{0}$ gr. of standard gold, but the latter quantity was worth more than 5 gr. of standard silver, there would be no reason for anyone to value the franc higher than 5 gr. of standard silver. The franc could not, therefore, be worth more than this. The rule that the value of an economic object is defined by the lowest cost at which it can be produced in sufficient quantities applies here also. This explains why in a double-standard currency the metal, which is at any monent rated cheaper

by the market than it is by the legal ratio, is the determinant of the value of money and why coins of the other metal go to a premium and disappear from the monetary system.

We can therefore sum up as follows:—

When no restriction exists upon the conversion of metal into money, the monetary unit is given an upper limit of value in consequence of the definite ratio established by the terms of conversion of metal into coin. If more than one metal is convertible into money without restriction, then of the two limits given by the metallic equivalents the lower is always the one which becomes effective. If no metal is convertible into money without restriction (and no other commodity can be considered in practice), then there is no equation between money and metal or any third commodity, and, therefore, upper limit to the value of money.

Now for the other side of the problem, the question of the existence of a lower limit to the value of money and the conditions underlying it.

The legal and economic conditions which give to coins a value in excess of their intrinsic value may under certain conditions become inoperative. No piece of money of any kind can, however, be worth less than the substance of which it is composed. Thus, for example, the silver coins of the Reich had in the last few years before the War a value as German money which was about three times as high as the value of their metallic contents. For a mark of coined silver, with fine silver content of 5 gr., one could buy about 15 gr. of fine silver. It would, however, only have been necessary to introduce free coinage for the silver coins of the Reich, and to make them legal tender, in order to cause the value of the mark to exceed that of 5 gr. of fine silver only by the small amount of the seigniorage. The legal validity of the 1-mark piece would, of course, have remained unaffected. The coin would still have been "current" for one mark. Measured, however, by the silver metal—that is, by the contents of the coin—the 1-mark piece would have been reduced to one-third of its former value—that is, to the value only of its content—but never below it.

The actual intrinsic value of the content of individual types of money is, therefore, the determining factor in establishing the lower limit for the value of money.

A fixed or nearly fixed ratio of value between money and the metal can only be absolutely secured where the upper limit given by the conversion ratio almost coincides with the lower limit given by the intrinsic content, or where special measures are taken to fix the value of money at the upper limit independently of the intrinsic contents of the given types of coinage.

The former is clearly the case wherever coins are freely coined and maintained at their full value. If a lb. weight of fine gold produces 1395 marks, and for a lb. weight of fine gold the mint returns 1395 marks less 3 marks for seigniorage—that is, 1392 marks—then one mark in gold coins of the Reich can never be worth less than $\frac{1}{1395}$th of a lb. weight of fine gold, as, apart from the small deficiency by wear, the gold coins of the Reich contain, in effect, $\frac{1}{1395}$th of a lb. weight of fine gold for every mark. At the same time the mark cannot be worth more than $\frac{1}{1392}$nd of a lb. weight of fine gold. Therefore, with freely coined money preserved at its full value by a limit of permitted wear fixed by law, the value which the coins have, as money, coincides, practically speaking, with the value of the substance which they contain, and this coincidence is a natural corollary and not merely accidental or temporary. For this reason we call such types of money *full weight money* or *standard money*.

Types of money for which there is no right of free coinage are not, or at least not as a natural corollary, of full weight irrespective of whether or not in their case metal can be changed into money without restriction. The Mexican silver peso, for example, can be obtained without any restriction at a fixed rate in exchange for deliveries of gold bullion. But it is clear that the peso is not necessarily of full weight, as the silver of which it is composed may be worth more to-day and less to-morrow in terms of the gold in exchange for which it is issued. The silver peso does not differ in this respect from silver coins within a gold standard system, the coinage of which is absolutely independent of deliveries of any metal whatsoever. The same, or rather parallel, position is clearly illustrated by paper notes issued in exchange for deliveries of a metal. In this case the intrinsic value is nil, and there can, therefore, be no question of any full weight.

Money which is not thus of full weight is generally called "overrated money" or "token money"—that is, the value of its content is less than the value of the units of money which it represents. Paper notes, provided that they have not become wholly depreciated and thereby ceased to be money, are always in this category.

So also, generally, are silver token coins in a gold standard currency and silver money in a limping gold standard currency. So long, however, as the question is one of coins—that is, pieces of money the substance of which has some value—the possibility exists that an increase in the price of the metal of which the coins are composed may bring the intrinsic value of the coins to the level of their value as money, or even above it. In Japan, Mexico, the Philippines, etc., this happened in the years 1906 and 1907, and during the War, in India, when the intrinsic value of the silver coins not freely coined reached and passed their value as

money. These silver coins accordingly changed, merely by reason of changes on the bullion market, from an overrated money into a money of *de facto* full value, and finally into a money of more than full weight.

From this it follows that a differentiation between full weight and overrated money, *i.e.* between standard and token money, does not exhaust the subject. Logically the differentiation should be only as between *ex institutione full weight money* and *money which is not full weight ex institutione*, the question remaining open whether, and if so, to what degree the latter, even when it is intended as token money, can occasionally be also of full weight or even of more than full weight. It is manifestly impossible that this could happen in the case of money of no intrinsic value—that is, paper money, or, indeed, money consisting of the same metal as the full weight money but containing a smaller specific weight (overrated silver token coins in a silver standard currency). All these cases concern solely token money.

Once it is clearly appreciated that the only money which is *ex institutione* of full weight is that which is freely coined and preserved at full value, the question arises how a fixed value in terms of such money may be given to token money.

In the first part of this book it was shown how this problem was solved in the historical development of monetary systems; here we have to subject it to a theoretical analysis.

As the concrete properties of such money do not come into consideration, the solution can only come by way of the law.

The law gives to all types of money in a monetary system, irrespective of whether they are of full weight or not, a definite validity expressed in the unit of account of the system—that is, it gives them a definite "nominal value." Coins and paper notes bear in their impression or imprint a description of the value assigned to them in terms of the unit of account of the system, or, if the impression or imprint relates to some other unit of account or to some specially named coin (such as talers or sovereigns), the pieces are given by statute or decree a nominal value in terms of the appropriate unit of account. It must be remembered that the mere impression of some specific designation of value on a coin is of itself of no importance, and that it only attains importance when the law gives to individual coins the property of acting as money at the nominal value assigned to them. This bestowal upon individual types of money, of the quality of acting as money, at graduated nominal values all expressed in terms of the same unit of account, is equivalent to fixing definite ratios of value between the most multifarious kinds of money.

The mere fixing by law of such a serial order of value between

the various types does not, of course, mean that the relative values obtain in practice. If this were so, the problems of the double standard, of paper currency, token coins, etc., would never have existed. In spite of the connecting link provided by the nominal values expressed in terms of one and the same unit of account there has always been the possibility of the various types of money falling out of line with one another. Some of the types are then valued higher than others by the public who are prepared to pay a "premium" or "agio" for them, over and above their legal value. For as all coins and notes which have been made money can be used for the settlement of money debts at the nominal value assigned to them, the divergence cannot be manifested by particular types of money being given and received at a value which is lower than their assigned nominal value. They cannot in the ordinary way receive a "negative agio" or "disagio" or "discount." This is only possible where the overrated money is either not full legal tender at its nominal value, or where the commercial world, and in some cases also the State, base new contracts not on money as such, but on specific types of money of full value. When, as has often happened, schedules of railway rates, Customs dues, etc., are payable in terms of gold under a paper currency standard, while payment is actually accepted in paper money at the rate of the day, then we can speak of a "disagio" on the paper money.

If, then, because they have gone to a premium, one or more types of money drop out from the fixed serial order of value of the system prescribed by law, the reason for this cannot be sought for in the legal assignment of the function of acting as money, for it is the circulation which gives to these coins a value which exceeds their legal value as money. The reason lies outside the sphere of law and depends chiefly on the material content of the money circulating at a premium.[1]

[1] If any type of currency is worth more than its nominal value, this might be due, apart from questions of intrinsic value, to the existence of an exceptionally great demand for that particular currency, a demand exceeding the available circulation. Thus in the first days of the War there was so sudden an increase in the demand for small change that in many cases a considerable premium was paid for silver coins and small notes. Similarly in the autumn of 1922 the note-printing press could not keep pace with the rapid depreciation of German currency, so that change in notes of denominations of less than 10,000 marks could only be obtained by paying a premium. Another case of a premium not due to the value of the money substance may sometimes be found in the fact that a type of currency also ranks as money abroad and enjoys there a legal validity which, in terms of the actual ratio of value between foreign and home money, exceeds its corresponding validity at home. *Examples.*—The Austrian taler was by law worth 3 marks in Germany and 1½ gulden in Austria. When the ratio between the German and the Austrian units of

Such disintegration of a monetary system consisting of varied types of money of different substances can, therefore, only be averted by bringing the value of money, as such, and the value of all the types, into conformity with that value of the unit of account which arises from the statutory value of the type having the most valuable intrinsic content.

Where a metal is convertible into money without limit, and thus fixes an upper limit to the value of money, care must be taken to avoid endowing any specific type of money with a metallic content representing a value higher than the conversion ratio of the freely coinable metal, or capable of exceeding this value by a possible rise in the value on the open market of the metal out of which the particular coin is made. It was the recognition of this necessity which led to the issue of silver token coins, with a content less than that corresponding to the then gold value of the unit of account, as instanced in England in 1816, and in the States of the French double standard in the sixties of last century.

When, however, the specific contents of the several types of money represent a value below that of the upper limit referred to, it is imperative that everyone should at all times be able to obtain, without trouble or sacrifice, for any quantity of the over-rated or token money, an amount of standard money of equal nominal value, or even the standard metal itself, at a rate of exchange nearly corresponding to the conversion ratio of the freely coinable metal. If this is not the case it will be impossible to avert the full value money going to a premium, and the value of money as such falling below the upper limit. A fixed relation of value between money as such and the freely coinable metal can only be obtained when these conditions are satisfied.

This end can be reached by direct or indirect methods.

It may be sufficient for the purpose that the State should restrict the supply of token money within such narrow limits that the very limitation of the available supply renders it impossible for the standard money to go to a premium, and makes it quite easy to obtain standard money in exchange for token money.

money was 1·50 marks = 1 gulden, the 3 marks given for an Austrian taler in Germany corresponded to 2 gulden in Austrian currency—that is, to ½ gulden more than in Austria. In Italy, in the nineties of the last century, when gold money for a time went to a premium of 16 per cent., the silver 5-lira coins and even the silver token coins commanded the same premium, although the silver content of these coins represented a smaller value in Italian lire than corresponded to their nominal legal face value. The reason for this, at first-sight astounding phenomenon, lay in the fact that the silver coins in question also ranked as money at their nominal value—that is on an equality with gold coin—in France and in the other States of the Latin Union.

This is the case in particular wherever the State, through its Treasury, accepts the various types of money in payment at their nominal value without any distinction between them, and at the same time when making payments meets the wishes of the public in regard to the types of money desired. In such a case we have, in fact, an indirect convertibility of any one type of money into another.

The State can also provide directly by statute for the convertibility of its tokens into standard money. Such convertibility secures for the type of money, even though it has the property of money in but a restricted degree, an equality of value with the standard money. This applies both to metallic token money and to bank notes and paper money issued by the State.

The measures which secure that the money declared by law to be of full value shall always be obtained in exchange for all other types of money, measures which in fact produce and preserve the serial order of value desired by law, at the same time bring about the result that money as such, no matter in what substance it is embodied, bears the same relation to the freely coined metal as do the coins struck from that metal itself.

As, until the outbreak of the War, one could always obtain in exchange for 1395 marks of silver coins, or of bank and Treasury notes, an equal amount in Imperial gold coins, and as these latter actually contained 1 lb. weight of fine gold, everyone could procure 1 lb. weight of fine gold by paying 1395 marks, irrespective of the type of currency used for making the payments. The mark as such could not, therefore, be worth less than $\frac{1}{1395}$th of a lb. weight of fine gold.

Thus the lower limit of value, given in the case of full weight money by virtue of its metallic content, applies also to money in general in virtue of these arrangements. In the relation of value between freely coinable metal and money as such, the upper and lower limits will coincide in such an organisation within a very small margin, just as they do in the relation between the freely struck coins maintained at their full standard value and the metal out of which they are made. The price of a lb. weight of fine gold could, in terms of the German monetary system existing up to the outbreak of war, fluctuate only between the limits of 1392 and 1395 marks.

We have seen that the unrestricted convertibility of a metal into money need not necessarily take the form of free coinage, but can also be affected by the issue in, exchange for the unrestrictedly convertible metal, of types of money produced from another substance, as, for instance, by the issue of silver coins or paper notes in exchange for delivery of gold in bars, or in exchange for certain foreign moneys. Where only this trans-

formability exists there is no standard full rate money. (*Example.* —The currency of India between the years 1893 and 1898.) But in this case also the relation of value between the metal which can be converted without restriction and money as such can be fixed by the State receiving the metal or documents carrying a claim to the metal (such as bills drawn on gold standard countries) in exchange for its own money at a rate corresponding as nearly as possible to the conversion rate, or allowing others to receive metal or claims thereto.

We have, therefore, the following conditions for establishing a definite and narrowly circumscribed relation of value between metal and money:—

(1) Certain arrangements which secure the unrestricted convertibility of a metal into money on the basis of a conversion ratio.

(2) Certain arrangements which provide for an unrestricted possibility of obtaining that metal in exchange for money as such, and at a rate nearly coinciding with the conversion ratio.

Where both these conditions apply, the monetary system is a normative one. Where one or both are missing, we have a free currency.

At the same time the unrestricted possibility of obtaining the type of money which is intrinsically the most valuable, and of obtaining it in exchange for all other types of money—which coincides with condition No. 2 in the case of normative standard currencies—is the connecting link which prevents the monetary system from splitting up and which secures the preservation of the serial order of value of individual types as intended by the law, by virtue of the legal validity assigned to the various types.

After analysing the necessary arrangements for determining a relation of value between a metal and money, we must briefly examine the limits within which the relation is possible.

This limit is produced by the difference in the price at which the State issues legal tender money in exchange for bullion deliveries (in Germany 1392 marks for 1 lb. weight of fine gold), and that at which freely coinable metal can be exchanged for legal tender (in Germany before the War 1 lb. weight of fine gold for 1395 marks). As in the case of free coinage, the latter price is fixed by the coinage standard, the extent of the margin in such a case depends upon the charges incurred by a person delivering metal to be coined—that is, it depends on the amount of seigniorage and possibly also on the loss of interest during the period of coinage. Where a central note-issuing bank arranges for the actual coining, or where coinage is replaced by an issue of notes against deliveries of the standard metal, the determining factor is the price paid by the bank, which in its turn is conditioned by the amount of the seigniorage.

In earlier times, when the coinage of money was still regarded as an exploitable institution, the overlords who enjoyed the rights of coining used to charge "brassage," or more strictly "seigniorage," far above the costs they incurred. So long as these "seigneurs" managed to retain for their mints a complete monopoly of the purchase of the output of the native mines as well as of the imported precious metals, they could compel those who delivered the precious metals to accept a price for their gold or silver which represented a considerable reduction from the value of the metals on the basis of the standard of coinage. But a high rate of seigniorage was only maintained for any length of time by continuous debasements of the coinage. The buying monopoly in the case of gold and silver could not in practice be strictly enforced. If the mints desired to receive precious metals, they were compelled to give a higher price according to the inferiority of the content of the circulating currency. They could then extract a seigniorage only by a further diminution of the metallic content of the coins issued.

The modern conception of a monetary system as a public institution, the proper upkeep of which may involve considerable financial sacrifices by the State, has made it the rule that the State, when coining for private account, should only charge actual prime cost. In England and in the United States of America it is even the rule to make no charge for minting. In other States only a few thousandth parts of the value of the metal are charged.

Various views are held as to how the amount of the seigniorage should be arrived at. An interesting analysis was given during the deliberations of the Reichstag on the Currency Act of the 9th July 1873 in the discussion between the Government representative, Otto Michaelis, and Ludwig Bamberger.[1] The former argued in favour of the State charging more than the actual cost of minting when striking gold coins for private account, so that the Treasury might be recompensed for the expenses incurred in preserving the full weight of the gold coins so minted. This additional charge was to be used to meet not only the loss which would occur when the coins in question became worn, but also the expenses of the State in ultimately recoining these worn coins. Basing himself upon these arguments, Michaelis calculated that a seigniorage of 8 marks per lb. of fine gold should be charged. In support of this relatively high rate, he adduced not only the financial considerations referred to, but also an economic argument. He asserted that by a relatively high charge of this kind the value of coined money would be maintained at a correspondingly higher level than that of its mere content,

[1] *Cf.* the author's *Geschichte der Deutschen Geldreform*, pp. 219–224.

and the export and melting down of coined money would thereby be rendered more difficult.

Against these arguments in favour of a high rate of seigniorage it may be said:

There is no justification whatever for placing upon those who cause gold to be minted the burden of the charges incurred for abrasion and consequent recoinage. In contrast to England, the German States had called in and recoined pieces which had lost more than the tolerated deficiency and defrayed the consequential charges at the cost of the general community because these coins had become worn in the service of the community. The coins struck for private account circulate, however, just as much in the service of the community as do the coins minted for account of the State. Just as the English system, which threw the loss resulting from abrasion upon the last accidental owner, is considered to be unjust, so it would be equally unjust to place the burden of the charges resulting from abrasion upon the shoulders of those who cause bullion to be presented for coinage, as these charges do not arise from the coining but from the circulation of the coins. In any event, Michaelis' calculation of the higher rate of seigniorage could easily have been reduced to absurdity. Driven to its logical conclusion it would, necessitate an addition being made to the seigniorage, not only on account of the first recoinage but for every subsequent recoinage *ad infinitum*.

Even the apparent protection against the export and melting down of coined money cannot be secured by a high seigniorage in the case of freely coined money. This question we must investigate in greater detail when discussing the international connections of the monetary system (Chap. VI). Here we need only say that a higher seigniorage affects the relation of value between metal and money in the sense asserted only so long as a demand for fresh supplies of media of payment exists. As soon, however, as trade circumstances increase the demand for the money metal or for foreign media of payment, the value of coined money is determined simply by its metallic content. The alleged protection against melting down and export is seen, therefore, to fail in the very circumstances in which it should become operative. Looking at it from another angle, a high seigniorage implies a certain retardation of the inflow of the standard metal. In the international trade in bullion the smallest margins are determinative. The foreign exchange broker calculates in fractions of thousandth parts whether it is cheaper for him to buy bills of exchange on a country or to send gold to be coined. The import of gold is checked by high cost of coinage.

Therefore, in order to restrict as much as possible fluctuations in the value of the metal and in the value of money, and also in

order to ensure the speediest provision of the means of circulation, it seems advisable that seigniorage should be charged at a low rate.

This applies also to the "hylodromic margin" in all cases where a fixed ratio of value between a metal and money has been created by means other than free coinage.

¶ 5. The Position of the several Types of Money in the Monetary System

The functions of the various types of money within the monetary system and their mutual relation to each other are regulated by a series of legal enactments. This regulation is closely connected with the endeavour to co-ordinate the various types of money into a permanent coherent system and to preserve a permanent and stable relation of value between some specific metal (standard metal) and money as such. For that reason we have already had partly to consider these legal provisions and the resultant "functional subdivision" of the money types.

The most important line of differentiation is that based on the degree of the power of payment. This has already been investigated in detail (Book 2, Chap. IV, para. 8), and we need, therefore, only recapitulate it here.

1. In the first place, we have money of full legal tender between individuals up to any amount. Such money must exist in every well-regulated system. Where a breach has been made in this basic principle a coherent and orderly system no longer exists. Such is the case where, for example, a paper currency which has the power of full legal tender in private transactions is not accepted by important offices of the State, such as the Customs offices, and where, in fact, the latter demand payment in another type of currency, possibly even in a type which, as in the case of the Austrian gold gulden created in 1867, has no power of legal tender in private transactions.

2. We have, further, various types of money with limited legal tender power.

(*a*) In this category come the (convertible) bank notes with legal tender powers; notes which are legal tender both in private transactions and in payments to the Treasury, but need not be accepted in payment by anyone receiving payments from the issuer.

(*b*) All those types of money which are not legal media of payment in private transactions but have the power of legal tender in payments to the Treasury.

(*c*) Finally, those types of money which must be accepted in payment, up to certain specified amounts: in excess of which

amounts, however, they are legal tender only in payments to the Treasury, or else not at all.

As far as terminology is concerned the following remarks may be made:—

The category mentioned under No. 1 has been called "standard money." For category No. 2 no comprehensive name is available. In practice the group mentioned under 2 (*a*) is represented solely by convertible bank notes with legal tender powers. The group under 2 (*b*) is money with legal tender powers in payments to the Treasury. That under 2 (*c*) is generally known as "token money." Knapp sets up a division into "obligatory money," which is money in regard to which compulsion to accept exists not only in connection with payments to the Treasury, but also in private transactions; and "facultative money" which has the power of legal tender only in payments to the Treasury but not in private transactions. As falling within the class of "obligatory money," he considers not only category 1 but also group 2 (*a*). He regards group 2 (*b*) as "facultative money." Those types of money "the obligatory or facultative property of which depends upon the amount to be paid"—group 2 (*c*)—he describes, in conformity with common parlance, as "token money." The words "current money" he would like to see applied only to "obligatory money," which in fact corresponds in every way to the historical meaning of this word in contrast to the term "token money." "Current money" has thus a wider meaning than our conception of "standard money," which includes only category 1—that is, money with unlimited power of legal tender not only as far as amount and payee are concerned, but also as regards the payer.

In their mutual relation the various types of money of one and the same system can be differentiated by the criterion of convertibility. We have seen that for the purpose of securing the serial order of value of the various types of money—as desired by law—certain categories of money are frequently endowed with the property of convertibility into certain other types. The person accepting such convertible money is in fact satisfied as against the person giving it and has no claim for redress against the latter. On the other hand, he has a claim against the State or against the agencies issuing the money by authority of the State.

The right or claim to convert or exchange may be reciprocal. Side by side with the obligation of the Treasury to convert token money upon demand into standard money there is an obligation for them to issue, upon demand, token money in exchange for deliveries of standard money. This exists, for example, in the United States of America. In addition to the convertibility of bank notes there quite frequently exists, as we have seen, the

obligation to issue bank notes in exchange for deliveries of gold bullion or coins. Theoretically, nothing stands in the way of conferring upon every category of money a claim to be exchanged into all other categories of money. In practice, this exchangeability is effected in every well-organised monetary system, which functions without friction, by special arrangements for controlling and regulating the circulating currency (see below, para. 8). An indirect convertibility or exchangeability exists wherever the Treasury and its agencies (including the note-issuing banks) accept without restriction the various types of money, at their nominal value, in payments made to them, but in making payments do not force the receiver to accept any specific type of money, but comply with his wishes.

The characteristic of convertibility leads Knapp to differentiate between *definitive* (*inconvertible*) and *provisional* (*convertible*) *money*. He includes in the latter group also those types of money which are "indirectly convertible" in the above sense—that is, those which are accepted in payment without restriction by the Treasury but are not forced upon unwilling creditors.

Money which is directly convertible is frequently described in monetary literature on the subject as *credit money*, and has at times been divided into secured and unsecured credit money according as to whether a special fund for its conversion has been set up or not. "Secured credit money" comprises in general only bank notes which have not been declared inconvertible. In the interests of their own solvency the banks must always hold a sufficient reserve or fund for the redemption of their notes. In most cases they are by law required to hold a specified minimum of cover, and the nature of this cover is also specified. On the other hand, the State does not, as a rule, keep any special reserve as cover for the "credit money" issued by it. In so far as demands are made upon the State to convert any money issued by it, these are met by the Treasury's current resources. In Germany, while the gold standard currency was in force, no special fund was set up for the redemption of either Treasury notes or of token coins. Such notes or coins were redeemed by the Reichsbank and were charged against the general credit account of the Treasury in the books of the bank.

Some writers on the theory of money regard all money, the intrinsic value of which is less than its value as money, as "credit money," although types of overrated or token money exist which are in no way convertible and certainly do not convey any right of claim under civil law.

The German monetary system provided an example of this in the talers. These differed from the Imperial silver coins in that

the Reich was under no obligation whatever to convert them upon demand into Imperial gold coins.

Similar to the position of the talers in Germany, is the position of all silver coins in England and in America. The State is under no obligation to give to anyone upon demand gold coins of standard value in exchange for overrated token coins. The money value of these coins, which exceeds their intrinsic value, cannot, therefore, be based upon an implied right of claim upon the State.

In free currencies with suspended coinage of the standard metal, in which the intrinsic value of all types of money is less than their actual value as money, the higher value cannot be ascribed to "credit," if only because no standard coins exist into which the other coins are exchangeable and from which they derive their value by way of credit. In the Dutch monetary system between 1873 and 1875, in the Austrian between 1879 and 1892, and in the Indian from 1893 to 1899, there actually existed no money of full standard value. The money value of the Dutch and Austrian silver gulden, and of the Indian rupee, a value which was in excess of the intrinsic value of these coins, was an absolutely independent thing not based upon any other object of value. It was not even based upon any rating in terms of standard money, and certainly not upon any right to claim standard money, but sprang solely from the legal tender power assigned to these coins and from the restriction of coinage.

How little up to that time monetary theory managed to free itself from the erroneous conception that overrated money must be credit money and must at least derive its value from that of some standard money is shown by the confused views widely held regarding the position of the Austrian currency from the year 1879 onwards. The phenomenon of the rise in value of the coined Austrian silver gulden, after the suspension of the free coinage of silver, above the value of its silver content puzzled people mainly because it was not apparent from which type of money of higher intrinsic value the silver gulden derived a value exceeding that of its silver content. Recourse was had, therefore, to the extraordinary explanation that the value of the silver gulden had been raised above its metallic value only because of its connection with the paper gulden; but it was not explained by what kind of connection the paper gulden should have been kept at a higher value than its paper value.

We thus have to discriminate between the following classes of overrated or token money:—

1. Token money which derives its monetary value from some standard money by (*a*) a mere assignment to it of the quality of money at a certain nominal value, and (*b*) an additional assignment

to it of an implied claim to redemption in standard money at the assigned nominal value.

2. Token money, the money value of which is not derivative but is independent and based exclusively on its character as a legal medium of payment.

The types included in 1 (*a*) and 1 (*b*) supplement standard money in normative currencies; the types included in No. 2 comprise money in the free currencies.

The above exposition of the relation between credit money and overrated money shows that the attributes of convertibility and of overvaluation do not coincide. Knapp attaches the greatest importance to the fact that, in principle, the "functional" differentiation between types of money according to the degree in which they are legal tender and convertible is quite independent of the differentiation based upon "genetic" and "dromic" qualities—that is to say, neither the degree of legal tender power possessed by the particular types of money, nor their degree of convertibility, are determined by the specific nature of the relation of value between money and the metallic substance (full weight coins, overrated token, etc.). In support of this contention he adduces examples showing that overrated silver money with restricted or suspended coinage, as well as paper notes, frequently enjoyed and still enjoy the privilege of being full legal tender; that such money is now and again convertible (provisional money), and again is sometimes inconvertible (definitive money). These examples are to the point. The theoretical independence of the various lines of differentiation should not, however, lead us to overlook the fact that it is usually upon quite definite combinations of various characteristics that monetary systems are built up. Because Knapp for the first time succeeded in working out the above analysis to its logical conclusions, we should not be justified in neglecting the syntheses of the monetary organisations.

Although it often happens that the overrated types of money are endowed with full legal tender power and have the property of being "definitive" money, the contrary case, namely, that of freely coined full-weight standard money which is restricted in its legal tender powers, does not occur in any monetary system. Convertibility in terms of money of higher intrinsic value cannot, of course, arise. Restrictions of the power of legal tender and of convertibility, in the proper sense of the word, exist in practice only in the case of types of money which are not of full value *ex institutione*, and this state of affairs provides its own justification. The historical development of monetary systems shows that restrictions of the legal tender power arose as a means of checking the deliberate overvaluation of the small money neces-

sary in economic intercourse. To this day the restriction of the power of legal tender has no other meaning than that of confining the overrated coins referred to, which are so necessary in small transactions, to a specific and narrowly circumscribed sphere of payments. The same purpose is served by keeping the issue of such types of money within definite quotas per head of population or to specific absolute amounts. The purpose of convertibility is to maintain the legal serial order of value of the various types of money. Convertibility of the overrated types into standard money is intended to exclude the possibility of standard types going to a premium and of the monetary unit being thereby depreciated. Thus convertibility has no meaning in the case of full-weight money.

In other words, the restrictions of the legal tender power and of convertibility are, theoretically, independent of the method of creating money and of the relations of value between money and the money substance, but they have a meaning and purpose only in the light of differences existing between the intrinsic values of the several types of money. This is most clearly seen where convertibility and the restriction of the legal tender power are treated as a means of incorporating inferior types of money in their proper place in a monetary system based on money of full weight *ex institutione*. The classical example is the simple gold standard system in which the only full legal tender coins are gold coins of full weight; all other types—silver, nickel, and copper coins, bank notes and paper money of the State—being convertible into gold, a system which of set purpose limits the coinage of overrated silver, nickel and copper coins, and reduces their legal tender powers to specific amounts.

But even where there is no normative currency and no standard money of full weight, the functional differences have a meaning only when applied to types of money of different intrinsic values. India had token money and Treasury notes convertible into silver rupees even at the time when, by reason of the suspension of the free coinage of silver, the currency became free and the rupee stood at a considerably higher value than that of its effective silver content. The result was that the actual silver content of the rupee represented, for Indian money in general, irrespective of the substance of which it was made, at least the lower, if no longer the upper limit of value. On the other hand, restriction of legal tender power is sometimes found even when the types of money limited in their legal tender power equal, or even exceed, full legal tender money in the value of their intrinsic contents. In so far as this has any meaning at all and is not merely blind imitation, it can only be explained as an arrangement for protecting the receiver of large payments against being swamped by

large quantities of small money. Convertibility in such cases only serves the purpose of regulating the condition of the circulation, and not of co-ordinating the monetary system. For the rest, paper token money with limited legal tender power is just as meaningless under a paper standard currency as it is under such a standard silver token money which—apart from the limitation of its legal tender powers—may even be made convertible into full legal tender paper notes.

It is impossible to draw other functional distinctions than those based on the degree of legal tender power and on the degree of convertibility. In particular, the differentiation between "valuta" and "accessory" money put forward by Knapp as the most important of such functional differences is untenable. The underlying ideas are, however, so instructive that Knapp's thesis cannot be dismissed without further examination.

Knapp regards as "valuta money" that definite—that is, inconvertible—type of money which the State always keeps in hand for payments to be made by the Treasury, and which the public are forced to accept (see p. 93 of his work). All other types of money are "accessory." In order to classify the monetary systems of various countries, Knapp argues that one must use "valuta money" as the starting-point (p. 101).

In the first place, it is clear that Knapp's concept of valuta money only represents a new idea opposed to the concept of definitive money where at least two definite types of money exist, as, for example, in France, before the War, in the case of the gold coins and the silver 5-franc pieces. Where there is only *one* definitive type, as was the case with the gold coins before the War in England and Germany, this type must, according to the definition of Knapp, be at the same time also valuta money.

This considerably restricts the area of differentiation between valuta money and definitive money. But it must be admitted that Knapp lays stress on the theoretical rather than on the practical importance of the question.

Where, therefore, two definitive types of money legally exist side by side, whether gold and silver money, or whether, as at present in Germany and in most other countries, metallic money and inconvertible paper money, the question arises as to how this concurrent existence functions. Two possibilities may be imagined. Either the legal equality between the two definite money types is lost in practice through the intrinsically more valuable of the two types commanding a premium, or else the legal equality continues notwithstanding the non-convertibility of one of the types into the other.

The former contingency was realised in the French double-standard currency. Gold and silver coins were equally definitive

money; but it was not found possible to preserve the equality of value between them. In the first stage of the French double standard system, gold money went to a premium, and in the next stage silver money went to a premium. Similarly, the issue of inconvertible paper money side by side with metallic money of full weight has, as a rule, led to the latter going to a premium, or even to its disappearing entirely from circulation. The appearance of a premium or agio means nothing more nor less, however, than that the money which goes to a premium disappears from the monetary system and is no longer a determinant of the unit of value of that system, which unit can naturally be derived only from a type of currency circulating at its nominal value. Thus only one of the two definitive money types remains within the system. If this definitive type, which circulates at its nominal value, in contrast to the type which has gone to a premium or has altogether vanished from circulation, be called "valuta money," this nomenclature does not appear to be open to any objection; but the advantage to be gained from it is not clear.

Moreover, Knapp's method of differentiation does not fit all cases. According to him, at the period when the French double standard was in force, the choice of the valuta money lay with the State administration. Whichever type of money was at any time chosen for use in Treasury payments was, for the time being, the valuta money, and any other was accessory. "It is well known that the French administration chose silver money from 1803 to about 1860, and from 1860 onwards made use of gold as valuta money."

This conception, however, cannot be made to conform with the actual facts. In reality it was not the Treasury which determined the position of gold and silver money within the system; this was done by the ratio of value between the metals in the open market. So long as in the open market silver had a lower value, as compared with gold, than in the ratio on which the French double standard was based, silver, as was shown above in the historical part (p. 129), flowed in large masses into France and gold coins went to a premium. Quite independently, therefore, of the attitude of the Treasury, silver money not only filled all the channels of circulation, but also became the determinant factor for the unit of value of the French monetary system, because, in contrast with gold money, it was paid and received at its nominal value. At a later date, when the gold discoveries in California caused the ratio of value between the two metals to become unfavourable to gold, the consequence was that gold streamed in large quantities into France and silver money was partly drained away and partly, in so far as it remained in France, went to a premium, whereas gold money now circulated

at its nominal value. The causes of this have been fully discussed above. Here it is only necessary to point out that the alternative disappearance first of gold money and then of silver money from their legal status in the monetary system, and the consequent derivation of the unit of value first from silver and then from gold, was not produced by an arbitrary act of the French administration, or by the policy of its Treasury, but was the result of existing circumstances in the open market, circumstances which in a bimetallic system must necessarily lead to such results. It is clear that the State pays, as a rule, with the money which it possesses; and under the bimetallic system the French State continually received from the commercial community silver money whenever the ratio of value on the international bullion market made silver cheaper than the statutory ratio of the French double standard did.

We find, therefore, in this important and instructive instance that the alternation between two definite money types in the determination of the unit of value, was not due to the attitude or policy of the Treasury in connection with its payments, but depended on economic circumstances which were the determining factors in the action of the Treasury.

Turning now to the second case—that in which the equality of value between two or more definitive money types is preserved—we must investigate the basis of such preservation and how far it can be influenced by the policy of the Treasury regarding the payments which it has to make.

We have seen that the surest method of preserving equality of value between two types of money of different substances is by means of the convertibility of the intrinsically less valuable into the intrinsically more valuable type. This method is of no avail here, as it is inconsistent with the problem which we are considering, namely, on what basis the equality of value between the definitive—that is, inconvertible—money types can be preserved. We have seen that the preservation of equality of value between money types of different content is affected by the State fully accepting through its Treasury the various types of money at their nominal value without differentiating between them, and at the same time, when paying out, meeting the wishes of the public in regard to the particular types of money in which its payments are made; a policy which Knapp himself has designated as "indirect inconvertibility." We have here, in point of fact, collaboration by the Treasury, but, even so, the line of differentiation put forward by Knapp does not apply. Knapp places indirect convertibility side by side with direct convertibility, and if we understand him correctly, he regards indirectly convertible types of money as belonging also to the category of "provisional

money." The fact, therefore, that full legal tender money is not forced upon the public by the State deprives this money, even according to Knapp, of its character as definitive money. If the same criterion is to determine which money is valuta money and which is not, we still have to solve the problem as to wherein lies the difference between valuta and definitive money and the difference between accessory and provisional money.

That Knapp's line of differentiation is based on an overestimate of the influence of the Treasury has already been illustrated by the failure of the latter to preserve equality of value between two definitive money types in the case of the French double standard. The overestimate is further exemplified by the fact that equality of value between two definitive money types composed of different content can be preserved without any intervention of the Treasury, if the State regulates, within the limits set by the money demand, the supply of the intrinsically less valuable type of money. The theoretical proof of this phenomenon will be given later (Chap. IX, para. 4). Here we need only give certain practical examples.

In France, where side by side with the gold coins the silver 5-franc piece is also definitive money, disturbances of the equation of value between gold and silver money, as far as my information goes, never occurred in ordinary commerce from the end of the seventies of last century up to the time of the War. In commerce on a large scale it has occurred for quite short periods only, and within very narrow limits. In the Netherlands, where the same presuppositions apply even more, because the circulation of silver considerably exceeds that of gold, an agio upon gold never arose from the time when gold was introduced concurrently with silver money right up to the War. In India, where gold money scarcely circulates, the rupee was kept at par with the English gold currency, which was made full legal tender in India in 1898. These phenomena cannot be regarded as having arisen by reason of the Treasury, and its agencies, including the note-issuing banks, compelling the public to accept one or other type of money and thereby making it valuta money. In all these countries there is no doubt that the Treasuries exercised no compulsion with regard to the issue of gold coins. They either gave no gold money at all or only, for reasons of their own, in such amounts as suited them. In France we may even say that no uniform practice on the part of the Treasury ever existed. As a rule, the Treasury made payments of large amounts in bank notes and of smaller amounts either in silver or in gold as it thought fit. The Bank of France, by the fact that the silver 5-franc pieces were full legal tender, often adopted the practice, when converting its notes, of issuing gold money only at a premium. The Bank of France, therefore,

exercised "compulsion" rather in the case of silver money than in that of gold.

It is difficult to decide whether, in the terminology of Knapp, silver or gold coins should be regarded as valuta money in these countries. It is a fact of fundamental importance, which cannot be explained by the "compulsory" treatment of silver money, that, up to the War, there was no premium on the intrinsically more valuable gold money, so that the unit of value of the monetary systems of these countries was derived from their gold money and was thus connected with the value of gold bullion. If we do not wish to attach to the phrase "valuta money" a meaning contradictory to the conception of "valuta" which clearly implies a connection with value, then in such cases we can only treat the gold coins as valuta money

This brings us to the following conclusions:—

In monetary systems in which only one definitive money type exists there is no necessity to employ the conception of a "valuta money."

In monetary systems with two definitive money types the vital question is whether it is possible to preserve equality of value between the two types, or, which amounts to the same thing, to prevent one of the types going to a premium.

If this can be done successfully—which, in the case of the double standard, for reasons given by us when dealing with that monetary system and with the relations between the value of money and of its content, is certainly impossible—the sole determining factor is by no means the attitude of the Treasury. This is frequently immaterial, whereas the policy of the State in the creation of money as well as the circumstances relating to the circulation enter into account and are often decisive. Where, however, equality of value between two or more definitive money types is preserved, the value of money as such can certainly not be less than that which corresponds to the value of the content of that type which is intrinsically most valuable. If this type is freely coined, then the money unit as such bears to the freely coined metal the same fixed relation as does the type of money produced from this metal by way of free coinage.

¶ 6. Token Money in Gold and Silver Standard Currencies

We have seen that every monetary system on a metallic basis must make use of a variety of money substances, or, in other words, that it must have token money, and that the art of constructing monetary systems consists in taking measures to prevent the disintegration of the system which would result from

a dissociation of the several types of money which differ in their constituent substances.

Silver standard currencies by their very nature can do with much less token money than gold standard currencies. In the case of the latter, only pieces of relatively high value are struck as standard coins from the standard metal; but in silver standard currencies it is possible to produce standard coins of quite small denominations. A gold coin of less value than 10 gold marks, or at best of 10 gold francs, would be practically too small for commercial purposes; on the other hand, a silver 20-pfennig piece of nearly full standard value would, in the German gold standard period, have corresponded in size and weight to the actual coin to which the value of 50 pfennigs was assigned, and would thus have been quite a useful coin. It is true that in a silver standard system the relatively high cost of minting small coins makes it necessary, for fiscal reasons, to assign to these a value higher than their intrinsic value, so that, for example, all silver coins from $2\frac{1}{2}$ groschen downwards in the taler currency, and those from 6 kreuzer in the gulden currency, were struck as overrated token coins. But, whereas the silver standard made it possible to issue as full-value coins denominations as low as 20 pfennigs, yet the gold standard necessitated the entire field below about 10 marks being assigned to overrated token coins.

As against this advantage of the silver standard there is a very positive disadvantage. In a gold standard system silver can be used as an auxiliary metal to an extent corresponding to its relative value, and the silver coins can be embodied in the system as token money, or as money of restricted legal tender, by ascribing to them a specific nominal value derived from the gold coins. On the other hand, it is not possible to embody gold coins in a similar way in a silver standard system.

The method employed for embodying silver coins in a gold standard system and for making them dependent upon gold for their value has already been explained. It consists in issuing them with a value so much higher than their intrinsic value as to preclude any rise in the value of their contents beyond the gold equivalent of the money unit, and in restricting their coinage at the same time, in order to prevent their value as money from falling below the value of the gold equivalent of the money unit. As a consequence of these coins being given a value higher than their intrinsic value, they are restricted in their legal tender property so that those who receive them should be protected against having to accept in payment large quantities of such inferior money. These rules and conditions are not applicable to gold coins in a silver standard currency. The maintaining of money at its full standard value is much more important for foreign than for home trade. Govern-

ment schedules do not operate beyond the frontiers of the country, and money which leaves the country to be melted down and recoined into foreign money must derive its value merely from its content and not from its legal tender property, which property does not apply in such transactions. Now, foreign transactions entail large payments, and these can be more conveniently effected in gold than in silver. On the other hand, smaller payments for which silver is the only possible metal belong essentially to the sphere of home trade. If only on this account, it is more justifiable to mint the silver coins required for smaller transactions with a content less than their nominal face value than the gold coins used for the larger payments. Even on general grounds it appears natural and justifiable that the coins representing the smaller values should be thus produced and should derive their value from the coins which represent the larger amounts. It would seem nonsensical to have standard coins for small payments and inferior coins for large payments. Again, silver coins in a gold standard currency, because they are overrated, can be restricted in their legal tender power, whereas gold coins in a silver standard system cannot be so restricted. The task which falls to silver coins as a medium of small payments coincides in every way with their restricted legal tender quality. On the other hand, gold coins can only serve the purpose of larger payments for which silver is too heavy. Any restriction of their legal tender power would be wholly inconsistent with this function.

For these reasons history shows that the silver standard has always rendered impossible an extended use of gold coins. Attempts to incorporate gold coins into a silver standard system have always proceeded on lines which amounted to a suspension of the silver standard, and a substitution for it of a double standard in which gold coins struck freely as of full standard value received a fixed nominal value in terms of the silver money. Or else the gold coins were struck as "trade coins" and stood outside the actual monetary system of the country. In the latter cases a system was created which differed from that of a parallel system only in the unimportance of the gold circulation.

It is in the very essence of the silver standard that gold money should be excluded, and this has the effect that for all payments for which silver is too heavy the public must make use of other types of token money, namely, paper tokens. In any case, the quantity of metallic money of full standard value in free circulation must be considerably smaller in relation to the paper money than is the case in a gold standard currency. The advantage of the silver standard which necessitates a smaller quantity of inferior token coins is more than counter-balanced hereby. In the case of the German gold standard, for example, payments

of less than 10 marks had to be made in token money; on the other hand, paper notes became of real importance only in connection with amounts of 100 marks or over. In a silver standard system, on the other hand, the convenience of the public would have necessitated the use of paper tokens for amounts possibly even lower than 5 marks; for, on the basis of the price of silver as it then existed, at least three silver coins of the size of the 5-mark piece of the time would have been required in order to give 5 marks in full-weight silver money. Whereas in the German gold standard the field between 20 and 100 marks belonged to gold money of full standard value, the field which would have belonged to full standard money in the case of a silver standard would of necessity have been that between about 20 pfennigs and 5 marks.

The double standard would combine in this respect the advantages of the gold standard and of the silver standard if it could ever do more than place gold and silver on a footing of formal equality and could really secure a simultaneous circulation of both metals. So long, however, as fluctuations of value between gold and silver exist, fluctuations which drive out of circulation first the one metal and then the other, the actual state of affairs under a double standard corresponds neither to a silver nor yet to a gold system. In the first case, the use of a sufficiency of gold money must be dispensed with; in the second case, the silver money necessary for small transactions can be kept in circulation only by being made—as in the case of the gold standard system—token money. Actually, therefore, in a double standard system a quantity of token money as small as that required in a silver standard system would not be sufficient, but it would be necessary to have as large a quantity of this type of money as would be necessary under the gold standard. On the other hand, the circulation of gold would not enjoy the security which it would do under the gold standard.

The depreciation of silver which began in the seventies of the last century resulted in the margin between the nominal and intrinsic values of silver coins being unexpectedly widened in those gold standard currencies which were then in existence or were on the point of being introduced. Whereas in England, in the Latin Union, in Germany, etc., the margin between the intrinsic and nominal values of the silver token coins was originally between 6 and 10 per cent., the intrinsic value of such coins amounted ultimately to scarcely more than one-third of their value as money. Over and above this, in the countries with a limping standard, the more or less large quantities of originally full-weight standard silver money which could not be disposed of when the gold standard was adopted were overtaken by a similar fate. Thus when the price of silver was 60 marks per kilogramme the intrinsic value of the

French 5-franc pieces and of the German talers was only about one-third of their value as money. Just as the degree of over-valuation of the coins always intended to be tokens was thus appreciably increased, so the volume of token money was considerably added to in various countries by the fall in the value of the standard silver coins.

The serious concern to which these unforeseen and undesired developments gave rise played an important part in the battle between the gold and the double standard, a controversy which raged with violence in the last two decades of the nineteenth century; but the considerations which were then of such importance are now of only historical interest. The fear of fraudulent coining of the highly depreciated silver coins proved everywhere to be groundless. Similarly, another danger has never yet taken practical form, namely, that in the event of serious economic or political crises, public confidence in the overrated silver money would be undermined in a manner threatening to disintegrate the monetary system. Far from this being the case, in the political and economic catastrophe of the War, the theory, always held by the writer of this book, proved correct. This theory was that, in the event of serious complications, the public demand for small change would completely and sufficiently counterbalance the token nature of the silver coins. In particular, in the early stages of the War, the shortage of small change became, notwithstanding the immediately increased coinage of silver and the issue of small notes, so acute that a premium was frequently paid for silver coins and small notes, and the communes and to some extent also the large private concerns found it necessary to have recourse to an issue of emergency money of small denominations.

Similarly, the truth of the rule enunciated in earlier editions of this book has been established, viz. that "the German currency cannot be placed in danger by the available supplies of overrated silver money, but only by a possibility that, in the event of war, the relation between the notes issued by the central bank and the aggregate cash reserves is quite likely to be mismanaged."

Finally, the conclusion drawn from previous experience has proved to be correct, that in the event of the suspension of convertibility of bank notes and of their depreciation the intrinsic inferiority of silver coins would of itself act as a safeguard against their suddenly disappearing from the circulation and against a most acute shortage of small change. Notwithstanding the marked deficiency of their intrinsic value, the silver coins of the Reich were in any case kept and hoarded in large quantities by the population. The shortage of small change which was thus accentuated would have brought about a catastrophe in the early

months of the War had the silver currency been at anything like its full standard value.

¶ 7. Paper Money

In a monetary system paper tokens differ in position from token coins, because, as we have already shown, they must be regarded as money both in the economic and in the legal sense.

The supplementing of money in coin form by paper tokens can be justified on two grounds. The first important ground is the necessary elastic adjustment of money in circulation to the ordinary and extraordinary fluctuations in the country's demand for money. The second ground, less important but not to be underestimated, is the convenience of the money market.

We discussed the first of these reasons when dealing with the question of the creation of money. The second reason justifies the existence not only of notes of large denominations for which gold would be too heavy, but of the smaller notes also (see Chap. VII, para. 4).

These two grounds give the principles for the incorporation of paper tokens within a monetary system on a metallic basis and their proper functions within that system.

If the stability of a monetary system requires that even coins of small denomination should be struck so as to have intrinsic value, then notes of small denominations which, for one reason or another, may be considered desirable, must be strictly limited in quantity. Both æsthetic and hygienic considerations add to this necessity. Present conditions in Germany prove how impossible it is to keep paper notes intended for small transactions in a satisfactory state.

When the German monetary system was reorganised after the establishment of the Reich, strict rules on this point were laid down. The note-issuing banks, including the Reichsbank, were forbidden to issue notes of smaller denominations than 100 marks. The Treasury notes, the denominations of which were fixed at 50, 20, and 5 marks, were limited to a maximum amount of 120 million marks. Only by a law of the 6th June 1906 was the Reichsbank permitted, in order that part of the circulating gold might be attracted to the bank and so increase its gold reserve, to issue notes of 50 and 20 marks, and the denominations of the Treasury notes were then fixed at 10 and 5 marks.

In order to obviate as far as possible any dangers which might result from a paper currency, the Treasury notes were given only a Treasury "tender" and were not made legal tender even in private transactions. Moreover, they were declared convertible, although

no special measures were taken for the creation of a conversion fund.

At first the German legal provisions regarding Treasury notes were very rigid; later they became a little more elastic. These provisions were strongly influenced by the prejudice against paper money caused by the practices of the various States in connection with such money before the establishment of the Reich. Even such a convinced and almost orthodox adherent of the gold standard as Ludwig Bamberger regarded the precautionary measures taken against the dangers of paper tokens as exaggerated. He was in principle opposed to the issue of Treasury or State paper money side by side with bank notes. But he held the view that, once the introduction of State paper money had been decided upon, there should have been no obligation to convert on the part of the Reich. The acceptance of these notes by the Treasury in payment of taxes, etc., taken in conjunction with their limited issue would, he thought, be sufficient to keep them at the value assigned to them. In any event, it would be necessary to suspend convertibility in critical times.

As far as bank notes were concerned, the original measures taken by the legislature of the Reich were also overcautious. We need not here enter into a criticism of the individual enactments, the purpose of which was to establish and to maintain absolute convertibility of these notes. Any attempt to do so would necessitate too deep an excursion into the subject of the nature and constitution of note-issuing banks. We need only touch upon the properties with which bank notes are endowed in order to function as legal tender.

While Treasury notes at least, in virtue of a statutory provision (para. 50 of the Act of 30th April 1874), "must be accepted by all agencies of the Reich and of all the Federal States in payment at their nominal value," the Bank Act of the 14th March 1875 expressly specified that no obligation rested even upon State agencies to accept bank notes and that no such obligation could be founded in law. The notes of the Reichsbank were declared acceptable at the Treasuries of the whole Empire only by means of administrative regulations, revocable at any time. In other countries, particularly in England and in France, the notes of the Central Bank were unhesitatingly made full legal tender, their nature as money having been correctly apprised. In Germany it was thought necessary to draw the utmost logical conclusions from the gold standard, and no one was to be under an obligation to accept in payment a type of money which did not contain its full intrinsic value.

After the amending Bank Act of the 1st June 1909, however, we find a change. That Act, at any rate, declared notes of the

Reichsbank to be full legal tender in private transactions, but the position as to notes issued by private banks of issue and at first also as to Treasury notes remained unaltered.

During four decades of peaceful development, which at certain periods of pressure in the tide of economic advance and at moments of financial crisis made great demands upon the German banks of issue, and particularly upon the Reichsbank, it was found possible to meet these demands without endangering the integrity of the monetary system by too great an expansion of the circulation of notes. The War, however, destroyed the monetary systems built up on a metallic basis in the countries which it affected and raised paper currency in such systems from its status of an auxiliary to that of actual money.

¶ 8. Control of the Monetary Circulation

Even the best monetary system is not a machine which functions quite automatically. In fact, every monetary system, if it is to fulfil the purposes for which it is intended, requires an active controlling force to regulate it continually and intelligently. This may be done by:

(1) Supervision and control of the international relations of the monetary system.

(2) Care for the preservation of equilibrium between the home demand for money and the money in circulation.

(3) Local regulation of the circulation.

Modern countries generally allot these duties to a central bank as they can in a large measure only be fulfilled by means of certain technical banking arrangements.

The German Bank Act of the 14th March 1875 (para. 12) places the control of the circulation first in the list of duties delegated to the Reichsbank. But the activities of the central banks in this direction are so integral a part of their entire activities that a complete essay thereon must be left to the volume on the banking system. Here only such remarks can be made as are necessary to a general outline of the monetary machine.

Under the first task mentioned above is understood the observing and influencing of the international movements of the precious metals and those factors upon which the inflow and outflow of bullion depend. In particular, an important rôle is played by the rates of exchange and by the system by which they are regulated. We shall revert to these in the next chapter. Moreover, a reservoir must be created for this purpose into which bullion imported from abroad must flow and from which supplies of the media of payment for foreign countries can be drawn. Only a large

central bank is adapted for the performance of these duties. The most important means of influencing rates of exchange and movements of gold is that of a systematic control of the rates of discount by means of the so-called policy of discount-rate variations, and this, of course, can only be carried out by a large banking institution. Similarly, it is only a bank disposing of very considerable means, and having the right of issuing notes, which is in a position to accept whatever quantities of the standard metal may be offered, to order the minting of the imported metal, and to hold permanently a reserve of metallic money and of foreign exchange, sufficient for such demands for payments to foreign countries as may be anticipated. It has already been repeatedly mentioned than an unlimited obligation has been imposed upon the Reichsbank to purchase gold bullion in exchange for its notes.

The task mentioned under (2) is also one which by its very nature can be performed only by a large banking institution which has the right of issuing notes. Apart from the function of attracting bullion from foreign countries, a function which has already been dealt with under (1), the control of the relation between the home circulation and the home demand for money can be exercised, on the one hand, by the elastic supplement to the metallic circulation which is provided by a note issue, and, on the other hand, by the influence which can be exerted on the home demand, just as upon international relations, by the regulation of discount rates. Just as the demand for commodities is restricted by high prices, so also the demand for money is restricted by high rates of discount. The intensity of this demand is felt by the banks and by the money market through the volume of the demand for short-term credit.

The above two points cover specific duties vested in note-issuing banks. Point (3), however, implies a duty which is not an essential constituent of banking, but could, and has in fact frequently been, be also undertaken by the financial administration of the State, sometimes exclusively and sometimes in conjunction with the central bank.

Local control of the circulation implies an apportionment as between the various parts of the country, not only of the total amount of currency, but also of the amounts of the individual types necessitated by the changing conditions of economic intercourse. The memorandum issued by the Reichsbank in 1900, on the occasion of its jubilee, has an interesting chapter dealing with the control of the circulation. It says: [1]

"Experience shows that some districts require a continuous

[1] *Die Reichsbank, 1876 bis 1900*, issued by the Board of Management of the Reichsbank.

influx of money, either because their demand is constantly growing or because money is constantly being drained away from them by other districts by reason of the nature of their economic connections. Particularly in regard to individual types of money is it possible to demonstrate the existence of such conditions. It is of great economic importance continually to divert any excess of money, and especially of individual types of money, from localities where it is accumulating into others where there is a corresponding shortage. The need for this is particularly great in the case of token coins. Too great an accumulation of token coins in individual localities must, in the interests of the proper management of the circulation, be absolutely avoided. Those in whose hands large amounts of such coins accumulate cannot use them for larger payments because of their restricted legal tender power, and must, therefore, rely on being able to exchange them for full legal tender currency. At the same time, it is just as much in the public interest that those who require larger quantities of small change—*e.g.* for paying wages—should be able to obtain it in exchange for notes or for gold."

To a certain extent the entire Treasury organisation of the State is adapted to this purpose. The public can dispose of types of money which it does not require by using them for payments to the Treasury. This is facilitated by the provision, which constantly recurs in different countries, that as far as payments to the Treasury or its agents are concerned, the limitation of legal tender power does not apply, at least, in the case of token coins of silver. But the effectiveness of Treasury offices in this sphere is subject to narrow limits. They are not able to divert media of circulation into any particular district to meet the growing demand for money in that district by granting credits or making payments on claims which will fall due elsewhere, nor do they dispose of sufficiently large reserves to permit of their taking superfluous types of money to any large extent and giving those which are required in exchange. In these matters a central bank, with considerable cash reserves at its disposal and with numerous branches spread all over the country, is the right organisation. It is characteristic that the obligation imposed upon the State by the Currency Act of 1873 of giving gold currency in exchange for token coins has been delegated to certain head offices of the Reichsbank. The reserves of individual branches of a large central bank are the reservoir from which the public's demand for money, and for particular types of money, is met, and to which the public in turn gives up its surplus supplies of redundant types. Quite apart from the law imposing such a definite obligation, a central banking institution, if only in the interest of its own business, finds it necessary to supply to its

branches cash in the forms suited to local needs, and to meet as far as possible the wishes of the public in regard to payments made and received, as well as in regard to the exchange of particular types of currency. The degree to which the Reichsbank has fulfilled the task of local regulation of the circulation of currency, far in excess of the duries imposed upon it by law, is clearly shown in the memorandum quoted above.

CHAPTER VI

THE INTERNATIONAL MONETARY ORGANISATION

¶ 1. Nature of the International Monetary Organisation

GENERALLY speaking, every State possesses its own monetary organisation which is an independent entity as compared with the organisation of any other State. The monetary machine is a product of the separate legislation of each State, the operation of which ceases at the frontiers of that country. For this reason there does not exist for international trade any such uniform standard instrument of transfer of value as is provided for internal transactions by the currency of the country. Within the country itself transfers of value can take place by the simple process of the transfer of the country's money, and the exchange of commodities can be effected by their being bought and sold in the currency of the country. In international transactions, however, it is necessary that the currency of one country should be exchanged for that of another. An inhabitant of a country who has to make a payment abroad must procure for himself, by means of the money which he possesses, a requisite supply of foreign currency. If he is to receive a payment from abroad, he is generally under the necessity of exchanging it for the currency of his own country.

The rates, on the basis of which the exchange of the money of one country for that of another is made, depend upon all factors which influence general prices, and in particular upon supply and demand. Every foreign currency is, in terms of native money, a commodity, the price of which is subject to fluctuations. We shall see that these fluctuations can be confined within very narrow limits by certain arrangements which are a part of the monetary systems and the maintenance of which depends on certain conditions. If, however, these arrangements fail, the fluctuations may at times attain extreme dimensions. An absolutely fixed relation between the rates of exchange of the currencies of two countries—a relation such as is aimed at and is attainable for the several types of currency in one and the same monetary system—can, however, only exist where the two countries have the same monetary system, not only in form but in actual operation. This is a condition which has so far obtained only in exceptional cases and for limited areas; nor has it ever been completely or permanently attained.

We have, therefore, no uniform or standard international currency and no actual international monetary organisation, but only the simultaneous existence of different national currency

systems. But the relation in which these stand to each other is of the utmost importance to international trade as a whole, and it is this relation which is meant when the phrase "international monetary organisation" is used.

If economic intercourse between one country and another necessitates the exchange of the money of the one for that of the other, then the development of such intercourse depends to a vital extent on the terms upon which such native and foreign currencies are exchangeable, and the stability or variability, as the case may be, of these terms. Thus it is clear that international trade is rendered much more difficult if the ratios of value between the currencies of the several countries are not approximately stable. Whoever sells goods to foreign countries for foreign money, whoever invests capital abroad and draws his interest or other profit in foreign currencies, must attach great importance to his being able to calculate with some degree of certainty how much domestic money he will be able to obtain for the foreign currency at the time when this is ultimately received by him. The greater the fluctuations in the ratio of value between the currencies of different countries, the more serious is the risk of loss for persons who have to make payments to or receive payments from foreign countries; and consequently, when the fluctuations are really great, only such transactions take place as offer a profit so large as to outweigh the risk of loss on this account. If there has ever been a time when the truth of these remarks has been so clear as to be appreciated by all, it is the present time of unexampled disturbance of the international monetary machine.

The relation of a currency to foreign currencies is called its *foreign exchange value*, and variations in the ratio of value between native and foreign currencies are called *fluctuations in the rates of foreign exchange*, or *fluctuations of the foreign exchanges*. Investigation of the causes of these fluctuations and of the means which can be effectively employed to prevent, or at least to limit them to harmless proportions, is an important part of the study of the science of money.

¶ 2. Par of Exchange

The two principal groups of currency systems, those of the normative and those of the free standard, present different aspects of the problem of the relations between two national currencies. In the case of the latter group, in which movements in the value of money are not related to any third object of value, there is no limit to the fluctuations which can take place in their relation to

foreign currencies. Where, however, the value of money is related to a definite weight of precious metal, the margin of fluctuations in the rates of exchange between that currency and foreign currencies based on the same standard metal is infinitesimal; and the margin of fluctuations between the currency and foreign currencies having the other precious metal as standard is determined in the main by the changes in the ratio of value between the two metals.

Let us consider the currencies of two countries each based on a gold standard. For each of these currencies there is an equation between the value of the money unit and that of a specific quantity, by weight, of gold. From these two equations, each of which has on one side a quantity of gold, a third can be derived which gives the relation between the values of the two money units. This equation between two money units is called their mint "par of exchange."

The following example is given with a view to elucidating the nature of this "par of exchange":—

Germany and France both had before the War a gold standard currency in the sense that the value of the money unit was related to that of a definite quantity of gold. The German currency laws provided for the minting of 2790 marks from a kilogramme of fine gold. Again, French laws laid it down that a kilogramme of standard gold of 900 thousandth parts in fineness should yield 3100 francs, which meant that a kilogramme of fine gold would give $\frac{31,000}{9}$ francs. From these two equations the following equation, connecting the German and French currencies, was obtained:—

$$2790 \text{ marks} = \frac{31,000}{9} \text{ francs} = 1 \text{ kg. fine gold,}$$

therefore

$$1 \text{ franc} = \frac{2790 \times 9}{31,000} \text{ marks} = \frac{81}{100} \text{ marks.}$$

The par of exchange between French and German currencies was thus—100 francs = 81 marks. Every 81 marks of German gold money contained just so much gold as would coin 100 francs, and in the one case as in the other an equation existed between the value of the monetary unit and of its specific gold content.

The calculation of mint pars of exchange is a little more difficult where the weights of the coins of the currencies in question are not in a simple relation to each other. In principle, however, the calculation is the same for all systems based on the same standard.

Thus the mint par of exchange between the German and the English currencies was deduced as follows:—

X marks	= £1, os. od.
£1, os. od.	= 240d.
934·5d.	= 1 ounce standard gold.
12 ounces standard gold	= 11 ounces fine gold.
1 ounce fine gold	= 31·1034962 gr. of fine gold.
1000 gr. fine gold	= 2790 marks.

This gave the result:

$$X = \frac{240 \times 11 \times 31{\cdot}1034962 \times 2790}{934{\cdot}5 \times 12 \times 1000} = 20{\cdot}42945.$$

Thus the mint par of exchange between English and German money was £1 = 20·42945 marks, or roughly 20·43 marks. Every 20·43 marks of German gold money contained just so much gold as would coin £1 sterling.

The mint par of exchange between all gold standard currencies can be calculated in this way. The same applies to exchanges between silver standard currencies.

On the other hand, there is no fixed mint par of exchange between a currency on a gold standard and one on a silver standard, for in such a case we lack the equations between the monetary unit of the two currencies and one and the same standard metal. Whenever the ratio of value between gold and silver alters, the equation between gold and silver exchanges must also vary.[1] Given a price of silver of 61d. per ounce standard, the mint par of exchange between the English and Indian currencies works out as follows:—

Xd.	= 1 rupee.
32 rupees	= 11 ounces fine silver.
37 ounces fine silver	= 40 ounces standard silver.
1 ounce standard silver	= 61d.

This gives

$$X = \frac{11 \times 40 \times 61}{32 \times 37} = 22{\cdot}67\text{d.}$$

As long as India retained the free coinage of silver, however, the mint par of exchange between English and Indian money was calculated, on the basis of a price of silver of 40d., at 15d. = 1 rupee. When the price for silver was 61d. one could buy with 22⅔d. as much silver as would be required for the minting of 1 rupee,

[1] How far changes in the relative values of gold and silver are influenced by causes originating in the relations between gold and silver standard currencies will be discussed below.

and when the silver price fell to 40d., only 15d. were required for this purpose. Every change in the ratio of value between gold and silver as expressed in the price of silver in the English gold standard currency had perforce to be accompanied by a corresponding change in the par of exchange between the English and Indian currencies. On the other hand, until the free coinage of silver in India was abolished, the Indian exchanges always stood at a fixed parity in terms of other silver standard currencies, such as those of Japan, China, and Mexico.

Between normative and free currencies as well as between one free currency and another there can be, as has already been emphasised, no parity of exchange whatever, as the values of free currencies are not connected with those of any third substance.

¶ 3. Rates of Exchange—Particularly for Bills—Between Normative Currencies based on the same Metallic Standard

The arithmetical point of equivalence derived from the metallic equivalents of two normative currencies is, as we have found, their "mint par of exchange"; but it must now be stated that, even in the case of normative currencies based on the same standard metal, the actual rate of exchange does not in practice invariably, or even normally, coincide with the mint par, but, as a rule, varies within certain definite and very narrow limits about this parity point.

This is observed as soon as the actual exchange of the coins of the country for foreign coins comes into question. That the actual rate of exchange can deviate from the mint par of exchange in such a case follows from the fact that even in normative currencies the ratio of value between money and the money metal is not absolutely fixed, but in fact varies within certain very narrow limits. Cost of coining, loss of interest entailed thereby, and abrasion of the freely coined pieces in circulation are factors which introduce the possibility of fluctuations to the extent of a few tenths per cent. round about the point of equivalence between money and the metal. If the equation of value between the German money unit and the gold metal, and the equation between the English money unit and gold, were not definitely fixed, but only approximate, then only an approximate equation could be derived from them for the relative values of German and English money. The rates for foreign money cannot, however, deviate from the mint par of exchange by more than the loss by abrasion supplemented by the cost of changing foreign into native money and the native into foreign money.

This can be made clear by an arithmetical example. Take,

for instance, the most unfavourable rate which French 20-franc pieces could reach in terms of German money. Assuming the abrasion of French gold coins to be $\frac{5}{10}$ths per cent., a lb. weight of standard gold of $\frac{9}{10}$ths fineness would be contained, not in 3100 francs but in 3115·5 francs. We shall assume further that in connection with the minting of gold into German coins, or in a sale of the metal to the Reichsbank for notes, 2784 marks (2790 marks, minus 6 marks for seigniorage) were obtained for a kilogramme of fine gold. We then have the following:—

X marks	= 100 francs.
3115·5 francs	= 1 kg. standard gold.
10 kg. standard gold	= 9 kg. fine gold.
1 kg. fine gold	= 2784 marks.

This gives the equation:

$$X = \frac{100 \times 9 \times 2784}{3115{\cdot}5 \times 10} = 80{\cdot}424.$$

Thus the assumed abrasion of French money and the cost of transforming French gold coins into German made possible a deviation of 0·576 marks from the mint par of exchange of 81 marks for 100 francs. This possibility would become a reality if a person owning French gold coins with the assumed degree of abrasion found it necessary to change these into German money; but, on the assumptions made, it would never be necessary for him to accept less than 80·424 marks for 100 francs.

A similar deviation in the other direction—that is, above the mint par—is possible when French money has to be obtained for German gold coins with considerable abrasion. In such a case the owner of the German coins must bear a loss of at most the abrasion and the cost of recoinage.

In practice, however, transactions in which foreign money in coins or notes is obtained by actual exchange for native money are of much smaller importance than transactions involving short-term claims in foreign money. Except in cases where particular kinds of foreign currency are required for melting down or for industrial use, persons who desire to buy foreign money do so because they need it for payments which they have to make abroad.[1] For such a purpose, however,—apart from foreign money required by travellers—a short-term draft payable abroad, which gives the purchaser a claim to money at the place where his payment is to be made, is considerably more convenient than actual foreign money, and particularly more so than coin,

[1] Under present-day (early in 1923) conditions in Germany the main factor in the trade in foreign notes is speculation. Speculation by the public cannot, however, enter in any way into the question of the relation to each other of two normative currencies based on the same metal.

which necessitates the trouble and expense of transmission to the place of payment abroad. Similarly, if a person has sold goods abroad or has entered into some other transaction with a foreigner, and as a consequence has at his disposal a definite sum of foreign money which he desires to change into money of his own country, he finds it much more convenient and cheaper to sell his right to the foreign money for a short-term document rather than to have the foreign money sent to him to be exchanged into the coins or notes of his native country. The short-term documents used almost exclusively for international trade payments are the bill of exchange, the cheque or draft, and the telegraphic transfer. These are known collectively as "foreign exchange." The rates which give the relation between the currencies of different countries are usually designated and treated as "rates of foreign exchange," which is short for "rates for foreign bills of exchange," the reason of this being that originally the bill of exchange played far and away the most important part in these matters; the cheque and telegraphic transfer being quite recent institutions. The phenomena under discussion, of which foreign exchanges form but a part—though a very important part—have been included by Knapp in his comprehensive phrase of "intervaluta relations," *i.e.* international currency relations.

Before, however, we deal with the details of rates of foreign exchange, we must investigate a little more closely the importance of bills of exchange in international payments.

The bill is used in international trade as a medium of clearing payments in order to save transmission of actual cash from one country to another. The following example may serve as an illustration of this point. Let us say that a German chemical factory has sold dyes to England and has to receive payment from there, and that at the same time a German spinner has bought cotton in England and owes a sum of money to the English merchant. In order not to have to send the sum of money to England in cash, a procedure which would entail charges for transport and insurance, the German spinner arranges for the chemical factory to transfer to him its claim on the English dyer. This is done by the factory drawing a bill of exchange on its English customer and selling this bill to the spinner. The latter then pays the English cotton merchant by sending him this bill. The cotton merchant presents this bill to the dyer, who is also in England, and he thus receives payment in English cash for his cotton. The advantage of this manipulation is that instead of two costly transfers of cash (one from England to Germany and the other from Germany to England) two inland transfers have taken place (the one in Germany from the spinner to the chemical factory and the other in England from the dyer to the cotton

merchant). As a rule, however, the operation does not take place quite in this straightforward form, which has been set out above for purposes of simplicity, but by the intervention of banks which buy and sell foreign bills of exchange.

So long as the payments which have to be made between two countries balance each other, the bill of exchange makes it possible to settle all such payments fully without incurring the expense of cash transfers from one country to the other. Moreover, so long as this is the case, there is no reason why the rate of foreign exchange should deviate from the mint par of exchange. As a rule, however, there is an excess of payments to be made by the one side or by the other, and then it may be necessary, in order to settle the balance, to send cash. If the country A has at any given moment larger claims than debts towards the country B, the consequence is that the supply of bills of exchange on the money market drawn by merchants, etc., of the country A on the country B exceeds the demand for them. So long as in both countries the gold standard is in force, those who cannot dispose on the money market of country A of their bills drawn on country B must send these to country B to be met, have the money sent from there in cash, and change it on arrival into money of their own country either by recoinage, by sale to the Central Bank, or in some other way. If, on the contrary, at any given point of time the claims of country B on country A predominate, then on the money market of country A the demand for bills drawn on country B will exceed the supply. Whoever, then, has to make payment in country B and cannot procure a bill of exchange drawn on that country must send cash to country B. In order not to have to incur the cost of sending cash, etc., the sellers of bills in the first case would be prepared to accept for the bills a slightly lower rate, and the buyers in the second case would be prepared to agree to a somewhat higher rate than would correspond to the par of exchange. Thus the rates of foreign exchange can vary from the point of parity both in an upward as well as in a downward direction, according to the relation between supply and demand.

To the factors which, in actual transfers of foreign for native currency, bring about deviations from the par of exchange must be added all those charges which are connected with the transmission of cash from one country to another, viz. freight, insurance, commission, etc.

But as long as the same metallic currency standard obtains on both sides the fluctuations of foreign exchange rates about the point of parity are limited by the above factors in the same way as are fluctuations in the exchange of hard cash. In any given case more than the actual currency rate at par would be paid, or a

lower rate accepted, in order to avoid the cost of sending cash, etc. As soon, however, as the rate of exchange has risen above or fallen below par by so much that this deviation equals the amount of the charge for sending cash abroad, no further rise or fall in the rate is possible, as people would then stop buying and selling bills and would have recourse to payments in metallic money.

The limits set by the cost of sending gold in either direction are called, where both currencies are on a gold standard, the "gold-points" of exchange. If the rates of exchange tend to the point which makes it cheaper to import gold, the exchange is called "favourable," and the gold-point itself "the upper gold-point." If the cost of sending gold rises, we speak of an "unfavourable" exchange and of a "lower gold-point." This terminology is old. It dates from the time of the mercantilist theory, that the ultimate aim of international trade was the import of precious metals.

Whether "favourable" exchanges appear as lower or higher than par depends on the manner in which foreign exchange rates are quoted. In Germany and in most other countries these rates are quoted as the amount of inland money which must be paid for a specific amount of foreign money, *e.g.* how many marks must be paid for 100 francs or for a pound sterling. In such quotations favourable exchanges are synonomous with low and unfavourable exchanges with high rates. A fall in the price of foreign bills of exchange causes the owners of such bills to prefer to present them for payment abroad and receive their amount in metallic money; on the other hand, a rise in the rate of exchange causes those who have to make payments abroad to prefer to transmit these in cash. In England, however, most foreign exchanges are quoted by the rate being given for a fixed amount of English money—for example, marks or francs obtainable at any time for a pound sterling. Here low quotations correspond to unfavourable and high quotations to favourable rates of exchange. When only a low amount of the money of a foreign country can be obtained in England in the form of bills of exchange for a pound sterling, the purchase of bills drawn on that country becomes unprofitable as compared with the sending of cash; if more of the foreign money must be given in London by way of bills for a pound sterling, the sale of such bills becomes unprofitable as compared with their presentation for payment in the foreign country and the import thence of the cash resulting from such payment.

The margin within which, in the case of two gold standard currencies, the rates of exchange can deviate from par and the rates at which the transmission of bullion or of cash becomes profitable are thus, in practice, not definitely fixed, but depend on a number of special and by no means always constant conditions.

The amount of actual abrasion of the inland or foreign currencies together with the cost of recoinage and of the transmission of cash gives a maximum for the deviation. This maximum can, moreover, be restricted by special measures. Actual recoinage can be made superfluous by a central bank being prepared to purchase the foreign gold coins at a published price, the bank giving notes in exchange for the coins. This price it is customary to fix according to the weight and not to the nominal value of the foreign coins, so that the abrasion comes into question here. If the purchase price for foreign gold coins, or even for gold bullion, stands below the mint price by less than the amount of the seigniorage, then sale of the coins or bars to the bank for notes becomes more profitable than actual recoinage and the maximum for the fluctuations of the rates of foreign exchange is correspondingly reduced. A further contraction of the limits of fluctuations for rates of exchange is brought about when, if it be necessary to send cash to a foreign country, the money of that country can be procured at home at a price corresponding to its gold content, or else, if gold bars are available, at their mint price. In the latter case there is no question of loss by abrasion, but seigniorage charges or deductions from the mint price of the gold bullion made by the central bank of the foreign country, when buying the bullion, still remain. In the former case, neither abrasion nor recoinage have to be considered, and the cost of transmitting cash is increased only where the foreign coins can only be obtained at a price exceeding par.

Thus, even when the charges for transmitting cash remain the same, the gold-points are not unconditionally fixed but deviate more or less from par according to the above rules. When in pre-war days the Bank of England had a stock of German gold coins and sold these at their mint value, or at only a slightly higher rate, or when it gave up gold bullion at its mint price, then the lower gold-point for Germany would more closely approximate to par than if only worn sovereigns had been available for cash transfers to Germany.

Apart from fixing the buying and selling prices of gold bars and foreign gold coins, the large note-issuing banks can influence the extent of the maximum deviations of the rates of exchange from par, and thereby the position of the gold-points, by granting advances free of interest against deliveries of gold. If, when the rate of discount is 6 per cent., such an advance is granted for half a month, this corresponds to an allowance of $\frac{1}{4}$ per cent. to the importer of gold. In such a case the import of gold becomes profitable at a rate $\frac{1}{4}$ per cent. nearer to par than the gold-point resulting from the other factors. The system of advances free of interest against deliveries of gold was very

largely developed and practised by the German Reichsbank before the War.

The limits so far established for the fluctuations of rates of exchange away from par apply to the fullest extent only to the relation between currencies in which it is certain that standard metallic money at its nominal value—that is, without any premium and without special charges—can be obtained at any moment in exchange for any other type of money. Where this is not the case, larger deviations are possible, as may be observed in the so-called limping standard currencies. Where only gold coins are absolutely full legal tender, it is clear that gold money at its nominal value can always be obtained. Where, however, as in France before the War, underrated silver coins, which could not be melted down or recoined without considerable loss, were legal tender as well as gold coins, those who had to make payments abroad could procure for this purpose such silver coins at their nominal value, whereas for gold coins they might have to pay a premium. As the market demand for metallic money for purposes of balancing international indebtedness draws as a rule upon the large cash reserves of the central banks: in the case of a limping gold standard currency, the question always is whether the central bank will pay unreservedly upon demand at any moment gold money at its nominal value; whether it will convert its notes upon demand for gold currency; whether it will pay in gold money at its nominal value upon demand against credit accounts, deposit accounts, etc.; whether it will discount bills of exchange in gold currency if asked to do so; or whether it will make use of its right to pay in silver money by saying in effect: "We have the right to pay in silver currency, and if you insist upon being paid in gold you must put up with a small deduction—that is, we shall charge a premium for paying you in gold." The policy of unconditional payment in gold was followed before the War by the German Reichsbank, even when the silver talers were still full legal tender side by side with gold currency. At the Bank of England, in view of the English monetary system, this policy was naturally adopted. In the case of the Bank of France the policy of charging a gold premium was, however, adopted occasionally.

This is not the right place in which to enter upon a detailed discussion of these two systems, about which a good deal of controversy has arisen; such a discussion is only possible in connection with an exposition of the principles and outline of the discount policy. Here we have only to point out that, where a premium on gold is charged, it is merely an addition to the charges of transmission and exchange of metallic money, and, in fact, must be regarded as an additional charge for obtaining metallic money suitable for export. The history of the French rates of exchange

before the War is a practical instance in proof of this. Whereas the cost of transmission and recoinage of gold money between France on the one hand, and England and Germany on the other, amounted at most to 0·4 or 0·5 per cent.; the rate of exchange between France and the two countries referred to at times deviated by more than a full 1 per cent. from par.

¶ 4. The Balance of International Indebtedness

In discussing the question of the margin of fluctuations of rates of exchange in the case of countries with normative currencies, we indicated at the same time the causes of these fluctuations as being: the changes in the relation of supply and demand for media of payment for foreign countries, which relation is based on the *balance of international indebtedness*.

The balance of indebtedness of a country is the expression of the relation of the payments which that country has to make to or receive from foreign countries at a given moment, or over a period of time.

The balance of indebtedness is not identical with the "trade balance"; for the balance of trade of a country comprises simply the relation of the imports to the exports. On the other hand, although the claims to payments which result from the import and export of goods constitute an important part of the balance of international indebtedness, yet they do not invariably constitute even the most important part. In the decades before the War, for example, the trade balance of the most advanced and economically most favourably situated countries of Europe was "passive," *i.e.* the imports of those countries—England, Germany, and France—regularly exceeded their exports, and, in fact, by considerable amounts. In the year 1913 the imports of Great Britain and Ireland amounted to 768·7 million pounds sterling and the exports to only 634·8 million pounds sterling. The "passive balance" of trade amounted, therefore, to 133·9 million pounds sterling, or roughly 2700 million gold marks. In France in the same year the imports were 8421·3 and the exports 6880·2, the passive balance or trade being thus 1541·1 million francs. Germany had an import of 10,769·2, an export of 10,098·2, and a passive balance of 671 million marks. The balance of international indebtedness of these countries was, however, "active," as is proved by the state of their exchanges and by the considerable import of gold. It follows, therefore, that the factors which, apart from the balance of trade, enter into the balance of indebtedness constituted a more than sufficient counter-weight to the passivity of the trade balance.

These other factors of international indebtedness are as follows:—

1. A country's holdings of foreign securities (shares, bonds of all kinds, etc.) as compared with the holdings abroad of similar securities of that country. The greater the excess of inland holdings over those held abroad, the greater are the interest and dividends which the country draws year by year from abroad.

2. Undertakings by nationals of one country carried on in foreign countries, the profits of which, just as the interest and dividends from foreign securities, are drawn by the country of the capitalist and *entrepreneur*.

3. International agency and transport activities in trade and shipping.

4. All payments for work done abroad in so far as the savings from such payments are sent or brought to the home country; or, from the point of view of the foreign country, payments made to foreign workers in so far as these exceed amounts spent by such workers in the country making the payments.

5. Spending of foreigners in the home country in relation to spending abroad by nationals of that country.

Before the War the German holdings of foreign securities and other forms of foreign capital investments, items which fall under 1 and 2 above, were estimated at between 20 and 25 milliard gold marks. Owing to the relatively high rate of interest earned by foreign capital investments, the annual produce of these could be estimated at, at least, 1½ milliard gold marks. To this were added about 1 milliard gold marks earned under heading 3 from international trade and from the earnings of the German merchant marine in the carriage of persons and goods. The total under these three headings, therefore, produced about 2½ milliard gold marks to be added to the credit of Germany in its international indebtedness.

The items under 4 and 5 were unquestionably passive for Germany. The earnings of German workers abroad were exceeded by the payments which had to be made year in and year out, particularly to the large numbers of seasonal agricultural workers. Similarly, the expenditure of foreign travellers in Germany was more than counter-balanced by the expenditure of Germans travelling abroad. These two headings did not, however, represent sufficiently large items at all substantially to reduce the excess under headings 1 to 3. The passive balances under headings 3 and 4 could be estimated for Germany at roughly half a milliard gold marks. There was thus, on the whole, an active balance of international indebtedness of about 2 milliard gold marks. The items under 5 were of great importance to a country such as Switzerland, the international indebtedness of which was considerably reduced by the intensive and regular travel of foreigners

in the country. They were also important for a country such as France, Paris having always attracted many of the wealthier visitors of the whole world. Italy also received not only the income yielded by foreign travellers, but large sums every year from Italians working in foreign countries in Europe and overseas.

The War and the subsequent Peace Treaties have shaken the foundations of the balance of international indebtedness of most of the important countries of the world, and have thereby destroyed the international monetary organisation.

Even during the War itself diminished production and the enormous increase in consumption of all the necessaries of life and of war material in the belligerent countries made the trade balance of such countries strongly passive, whilst neutral countries as well as the U.S.A. and Japan increased their exports and, above all, the prices of these exports enormously, and were thus able to register unprecedented export surpluses. The excess of imports over exports in England rose from 134 million pounds sterling in 1913 to 790 million pounds sterling in 1918; in France it rose from 1·5 milliard francs in 1913 to 15·8 milliard francs in 1917. On the other hand, the active trade balance of the U.S.A. increased from 324 million dollars in the financial year 1913–14 to no less than 4129 million dollars in the financial year 1918–19.

The enormous imports by the European belligerents brought about a veritable revolution in international indebtedness. In particular the U.S.A., which up to the outbreak of war had been a debtor country, became the largest creditor country of the world. The credits granted by the American Government to the Allied States, including the unpaid interest on July 1921, amounted of themselves, to more than 11 milliard dollars. Of this amount England owed about 4·6 milliard, France 3·6 milliard, Italy 1·8 milliard, and Belgium 409 million dollars. The advances by the British Government to other countries amounted in March 1921 in round figures to 1·8 milliard pounds sterling, of which amount Russia owed 561 million, France 557 million, Italy 477 million, and Belgium 103 million pounds sterling. To this must be added commercial credits which cannot be estimated statistically, but which are very considerable. The enormous sums for war credits were, however, far exceeded by the claims set up by the victorious against the defeated countries, particularly against Germany, under the heading of "Reparations." The London ultimatum of May 1921 fixed the German reparations debt at 132 milliard gold marks plus the Belgian war debts—in all about 138 milliard gold marks. This is more than thirteen times the highest annual amount which was ever reached by the total pre-war exports of

Germany and more than the aggregate national wealth left to Germany after the War, the Revolution, and the Peace Treaty.

Never before has the world seen a volume of international indebtedness even approaching this total. The indebtedness is out of all proportion to the actual and possible extent of international exchange of commodities by which alone international debts can in the long run be liquidated. This applies particularly in the case of Germany. The weakening of German productivity by the War and the Revolution, as well as the territorial crippling of the Reich, have resulted in a great diminution of German exports and an increase of imports. In the year 1922 the value of imports, as provisionally estimated, amounted to 6·2 milliard, and the value of exports to 4 milliard, the passive balance of trade thus being 2 milliard gold marks. This shows how impossible of performance are the annual claims against Germany. The attempts nevertheless to enforce, by violence, payments which cannot be made, could not but lead to the complete collapse of German exchanges which we are now witnessing.

Only under a broad and enlightened regulation of war debts and reparations will it be possible gradually to re-establish the international monetary machine, now almost completely destroyed, and to stabilise to some extent the international relations between the various currencies. International loans cannot by themselves do more than bring about at best a temporary relief. In the long run they intensify the disturbance due to international indebtedness, and the resulting disturbances of the international money machine.

¶ 5. Exchange Fluctuations between Gold and Silver Standard Currencies

In the relations between currencies on the same metallic basis, even the greatest fluctuations in international indebtedness, so long as the basis of the currency is preserved on both sides, can produce only the smallest movements limited by the two gold-points, while the exchange parity remains completely unaffected by all such fluctuations.

The relation between a gold and a silver standard currency, however, differs slightly. Here the mint par of exchange is not fixed, but changes with the ratio of value of the two precious metals and with the price of silver in gold standard countries. Given a certain price of silver, however, the rates of exchange between gold and silver standard countries can deviate from the mint par of exchange derived from the price of silver, only within those narrow limits which are determined, on the one hand, by charges for transmission and the coinage of silver bars, and, on

the other hand, by the cost of importing and melting down silver coins and by the amount of their abrasion. Herein lies the chief resemblance of this relation to that of one gold standard currency to another and of one silver standard currency to another. The point of difference is to be found in the fact that the balance of international indebtedness between gold and silver standard currencies influences the price of silver and thereby also the changes in the par of exchange between gold and silver standard currencies. In the historical part of this book we have had frequent occasion to draw attention to the great importance which the balance of Indian indebtedness had for the price of silver on the London market, so long as the Indian mint was open to silver.

Nevertheless, the international indebtedness of the various silver countries is but one of many factors which enter into the price of silver, or, which amounts to the same thing, enter into the relation between the values of silver and gold. This limited influence, exercised upon the price of silver by the international indebtedness of a silver-using country, contrasts with the fact that the ratio of value between gold and silver, resulting from many other causes, is the vital factor for the determination of the rates of exchange of silver-using countries, subject to the narrow limits of variation set up by the costs of transport. We thus have here a peculiar case of reciprocal action.

In his book Knapp[1] makes an attempt to present the relation in question in a different light. He does not deny altogether the importance of the industrial factors which can affect the course of silver prices (circumstances of production, demand for industrial purposes), but he regards as the determining factor the rate of exchange of silver standard countries, and in so far as the period 1871 to 1893 is concerned he takes this factor to be in the main the exchange value of the Indian rupee. *We*, on the other hand, put it as follows: The ratio of value between gold and silver is, it is true, influenced by the balance of indebtedness of each and all the several silver-using countries, which gives an upward or a downward tendency to the rate of exchange of those countries. The ratio of value itself, as it actually stands at any moment as a result of the multiplicity of industrial and financial factors, is, however, of decisive importance for the rate of exchange of the silver-using countries. Knapp puts forward the following thesis: The ratio of value between gold and silver is determined by the rate of exchange of the silver-using countries. Changes in the circumstances of production and in the industrial demand can have but a modest and modifying effect, and this, too, only in so far as they have an effect on the international balance of indebtedness,

[1] *Die Staatliche Theorie des Geldes.*

and thereby on the exchanges of silver-using countries, and make themselves felt through these.

In support of his thesis Knapp adduces, in particular, that from 1871, and still more so from 1876 onwards, both the Indian rupee and the Mexican peso fell for reasons of a "pantopolic" nature—that is, on grounds affecting the entire complex of the mercantile relations of these countries as expressed in their balance of international indebtedness—and quite independently of developments in the price of silver. The price of silver, therefore, went back in those days because the rate for the rupee was weakening, and, in fact, it followed the rate of the rupee because this rate always set an upper limit to the price of silver. Knapp sees a proof of this argument in the events of the year 1893. In that year of the suspension of free coinage of silver the rupee stood at 15d., and far from rising as a result of the suspension it in fact fell to 13d. and 12d. Most writers would express surprise at this. "We, however, do not share this surprise. For do not we believe that the price of the rupee fell for pantopolic reasons? If, then, such reasons continued to apply—and this remains to be proved—why should the closing of the Indian mints to silver have raised the rate of the rupee? That this rate did not rise is unquestionable, and from this very fact we conclude that its fall was not due to silver, for some reason itself becoming cheaper and thus depressing the rate of the rupee. In point of fact the actual position was diametrically the opposite."

In connection with this line of argument, let us first see how things actually stood.

It is true that for various important reasons the Indian balance of indebtedness was substantially more unfavourable, not only from 1871 to 1876 but from about 1866 onwards, than it had been in the previous decade. This has been shown in full detail on pp. 192, 193. It must also be admitted that the fall in the demand for silver for monetary purposes, due to the more unfavourable course of the Indian balance of indebtedness, had an important effect on the ratio of value between silver and gold. So far from this being disputed, it has been generally accepted in the writings of economists from the time of Soetbeer. But the following reservation must be made to Knapp's assertion. The Indian balance of indebtedness in the period under consideration was not absolutely unfavourable, but only less favourable than it had been in the decade from 1855 to 1865. As regards the actual balance of trade Knapp is absolutely wrong when he writes: "It is also a fact that India does not produce such goods as find their market in England in sufficient quantities to counterbalance English goods sold in India. Quite apart from what the Government might do, it is, in effect, necessary for India to

market rupees in order to buy English goods." The exact opposite is the case. During the whole period of the falling rupee exchange, India had a great excess of exports over imports, estimated at, at least, 250 million rupees per annum on the average of the years 1866–93. The enormous claims by India on foreign countries, resulting from its "active" trade balance, were not even nearly neutralised by the unquestionably unfavourable indebtedness of India to England. This indebtedness found its expression in the issue of Council bills. The extent to which the issues of these bills fell below the excess of exports during these critical years may be seen from the following table:—

Period. (Annual Averages.)	Excess of Indian Exports over Imports. (1000 Rupees.)	Total of Council Bills sold. (1000 Rupees.)	Excess of Exports over Council Bills sold. (1000 Rupees.)	Excess of Imports of Silver. (1000 Rupees.)
1870/71–1874/75	233,350	120,840	112,510	30,631
1875/76–1879/80	231,430	151,140	80,290	70,542
1880/81–1884/85	292,310	195,700	96,610	60,806
1885/86–1889/90	284,660	190,730	93,930	96,351
1890/91–1894/95	344,380	234,880	109,500	112,220

Even if we combine the Indian trade balance with that country's indebtedness to England, we still get a continuous considerable credit balance of Indian claims on foreign countries, which balance must *ceteris paribus* have brought about a rise in the exchanges and which did, in fact, lead to a continuous import of silver into India. If, instead of a rise in the exchange of the rupee which should have resulted from the "pantopolic circumstances" of India, a marked fall occurred, this is explicable only by assuming that the combined effect of the factors which were depressing the price of silver was greater than the effect resulting from the Indian balance of indebtedness. This latter could retard the fall in the price of silver, but could not arrest it; the fall in silver must, therefore, of necessity have depressed the Indian exchanges, notwithstanding the counter-balancing effect of the balance of indebtedness. This becomes particularly clear if we compare the par of exchange between English and Indian money resulting from the price of silver as it then stood on the London market with the actual position of the rupee rate of exchange.[1]

[1] Detailed statistics, which, however, begin only with the year 1890, are given by Arnold in *Das indische Geldwesen unter besonderen Berücksichtigung seiner Reform seit 1893*, Jena, 1906, p. 330.

One may say that the rate of the rupee taken on the whole was always about ½d. higher than its melting value, as given by the then price of silver in London. The Indian exchanges were thus favourable as compared with the then ratio of value between silver and gold, and in this way rendered possible larger imports of silver. This confirms the view that the Indian exchanges on their own account tended, by reason of the balance of Indian indebtedness, to rise and were for the time being as high as was possible, having regard to the price of silver, which for other and important reasons was weakening. If, for example, during that period, silver production instead of rising had fallen, so that it would have scarcely sufficed to meet the Indian demand for silver for monetary purposes, then the Indian balance of indebtedness could have brought its influence to bear on a rise in the price of silver.

As Knapp, in support of his theory, refers in particular to the events of the year (1893) when the free coinage of silver was suspended in India, we must also give the actual facts here.[1]

The suspension of the free coinage of silver resulted from the fact that the Anglo-Indian Government, correctly appreciating matters as explained above, desired to remove the pressure which the complex of factors depressing the price of silver exercised on the Indian exchanges in opposition to the tendency which—averaged over longer periods—must have followed from the factors determining the balance of Indian indebtedness.

The success of this step—controverting Knapp's view—was assured within a matter of a few years.

At first the rate of exchange of the rupee rose. The rate, which had fallen from 18·4d. at the beginning of the year 1891 to about 14·5d. at the end of May 1893, rose, immediately after the suspension of free coinage in June 1893, to 15·88d. at the beginning of July 1893, whilst the London price of silver was falling from 37·7d. at the end of May to 34·25d. at the beginning of July 1893. However, the rupee exchange did not remain at the level reached by it immediately after the suspension of the free coinage of silver, but it went down slowly in the succeeding eighteen months until it reached 12·4d. in January 1895, the price of silver falling at the same time to 27·2d. From that point onwards, however, the tendency became definitely reversed. Already, by the end of December 1895, the rate of exchange of the rupee had again risen to 13·8d., and in March 1898 the new par of exchange of 16d. which was being aimed at was reached. From this par of exchange the rate varied up to the War only to the small extent conditioned by the cost of gold shipments, and

[1] *Cf.* the work by Arnold just quoted; and also Heyn, ***Die indische Währungsreform***, 1893, particularly the tables on pp. 38 and 39.

continued in fact, for the most part, in harmony with the Indian balance of indebtedness in an upward direction.

There is thus no doubt that after a short period of transition the rate for the rupee rose, when once the pressure exercised by the continued depreciation of silver had been removed, to the upper limit provided by the English gold currency, and that this occurred without any change having taken place in the basic factors conditioning the balance of Indian indebtedness. The temporary fall of the rupee exchanges in the second half of 1893 and during 1894, a fall on which Knapp bases his proof, cannot be used for a deduction of this kind. It could not reasonably have been expected that the full effect of the suspension of free coinage of silver on the rate of exchange of the rupee would have become apparent at once, especially as immediately before this time certain special circumstances in the Indian indebtedness were counteracting any upward tendency in the rate of the rupee. The excess of exports over imports was in the year 1893–94, with a figure of 295 million rupees, not inconsiderably lower than the 387 and 403 million rupees in the two preceding years, and when in the following year the excess rose to 353 million rupees, the Government proceeded to issue Council bills to a hitherto unprecedented amount. The bills issued amounted to 310 million rupees and absorbed nearly the whole "active" trade balance. How exceptional in that year was the course of the balance of international indebtedness of India is seen from the fact that the exports of gold exceeded the imports of that metal by 50 million rupees, a state of affairs which Indian trade statistics record only twice before, and then in a much smaller degree.

Taking it all in all, therefore, the developments in the Indian exchanges before and after the suspension of the free coinage of silver show that the rates tended almost continually to rise in obedience to the conditions of the Indian indebtedness, but that this tendency was, as far as its effects on the price of silver were concerned, more than counter-balanced by other potent causes, so that the actual course of the Indian exchanges was, until the free coinage of silver was stopped, dominated by the price of silver, which in its turn was the result of many factors, amongst which the Indian indebtedness was but one and not even the most important.

Apart from the example just considered somewhat fully in connection with the theory put forward by Knapp, the actual position of things is clearly seen as soon as we consider a series of silver standard countries with differing balances of international indebtedness. We can then neglect the effect of industrial factors and are yet led to the result that the ratio of value between silver and gold (which in such a case is the product

of all the factors determining the balance of indebtedness of the several silver-using countries), determines the rate of exchange of every such country within the narrow limits set by the cost of transmission of silver.

Let us consider India and Mexico as two such countries. Let us assume that India has a favourable and Mexico an unfavourable balance of indebtedness. The Indian exchange has then a tendency to rise, and the Mexican exchange to fall. Both tendencies have unquestionably an effect on the price of silver, but in opposite directions. If the effect of the Indian balance of indebtedness is the stronger of the two, then the price of silver and with it the rate of exchange of Mexico rises, although the Mexican international indebtedness would not itself have resulted in a rise of the Mexican exchange. It is, of course, true that the price of silver would not rise to the extent to which it would have risen had not the Mexican balance of indebtedness operated the other way.

Again, let us consider a historical example. In the year 1890–91 the circumstances of the international indebtedness of India were on the whole normal. At all events they showed no reason for a rise of the Indian exchange. The excess of Indian exports amounting to 282 million rupees was smaller than in the two immediately preceding and following years, when it was respectively 342 and 387 million rupees. The issue of Council bills, the amount of which was 212 million rupees, was roughly normal. Whilst, therefore, the circumstances of the indebtedness of India taken by themselves must have resulted in the year 1890–91 in a lower rate for the rupee than in the two immediately preceding and following years, in actual fact the opposite occurred. The rate of exchange of the rupee averaged in the year 1890–91 something over 18d., whereas in the years 1889–90 and 1891–92 it was 16·57d. and 16·73d. respectively. The rate for the rupee had even for a short while reached 20$\frac{9}{32}$d. during the year 1889–90, whilst in the previous year a rate of 16d. had been registered, and in the following year there was a set-back to about 15d. The explanation of these remarkable developments, which are in contradiction to the course taken at the time by the balance of indebtedness, is to be found solely in the legislation of the United States of America (Sherman Act), which caused enormous speculation on the rise of silver in the year 1890. The rupee exchange, however, which, having regard to the indebtedness of India, should rather have fallen than risen, was forced upwards by the price of silver, which was rising for other reasons.

It is clear, therefore, that however one may estimate the effects of the industrial and monetary factors which determine the price of silver, it is still the price of silver (on the course of which the

balance of indebtedness of the country has a certain but not the sole decisive influence) which for every silver standard country is the absolutely determining factor for its rate of exchange within the narrow margins known to us. The price of silver, which is determined by a multiplicity of factors, which in part reinforce and in part counteract each other, gives an equilibrium point for the gold and silver exchanges, from which the actual rates of exchange can deviate, under the direct influence of international indebtedness, only within known and narrow limits.

¶ 6. Fluctuations in the Exchange Relations between Free Currencies

The position of free currencies in relation to a foreign monetary system is in absolute contrast to the relationship between normative currencies. In free currencies the value of money is not connected with any third commodity, and all those influences which in normative currencies cause merely unimportant fluctuations from the mint par of exchange, limited by the upper and lower gold-points, have a much greater effect on the exchange value of free currencies. They result here in fluctuations of so many per cent., whereas in the other cases they can only produce changes to within tenths of 1 per cent. Whereas money of full intrinsic value can be melted down at any time and can be recoined into the money of other countries at a relatively small cost: or, where a gold standard and a silver standard currency are opposed to one another, by the sale of the resulting bullion, paper money cannot be rendered valuable either by reason of its substance or by being transformed into the money of another country. This makes it theoretically possible for such money to suffer almost complete depreciation in terms of the currencies of other countries. This theoretical possibility became a bitter reality for certain countries after the War. In terms of gold money the Russian rouble has sunk to less than $\frac{1}{100.000}$th part of its original value, the Austrian crown to less than $\frac{1}{20.000}$th part, and the German mark for a short while to less than $\frac{1}{10.000}$th part.

Moreover, in the case of normative currencies, the standard metal or the full-weight money of foreign countries on the same standard can be transformed at any time into the currency of the country by free coinage, whereby a limit is set to the possibilities of a rise of the currency of that country; but the exchange of a country which has no free coinage of any of the metals can, if the demand for the media of payment for that country cannot be met, rise to an unlimited extent.

In those free currency systems in which the value of money has only an upper or only a lower limit, or has widely separated

limits, considerable fluctuations in the exchanges can take place, at least within these wide limits.

These unlimited or wide fluctuations can take place not only as against normative currencies, but clearly also in the mutual relation of free currencies. For the movements in the value of a free currency are determined at all times by factors which are only relevant to the country with that particular currency. The demand for Argentine currency, a country with a paper currency, might, for example, be considerable by reason of large exports of wheat, and might have the effect of raising the Argentine exchange, whereas at the same time Brazil, also a country with a paper currency, might have its currency depressed by weakness in the price of coffee.

Other causes of fluctuation must be added to the fluctuations of the balance of international indebtedness in the case of free currencies, especially paper currencies. These are causes which can play no important part in the case of normative currencies, being the mode of issue of money and circumstances affecting State credit.

In normative currencies the free coinage of the standard metal to some extent automatically regulates the creation of new money. No question arises, therefore, as to the policy adopted for the issue of money. On the other hand, in the case of metallic currencies with suspended coinage, and in that of paper currencies, the State can regulate the supply of new money at will. On the policy adopted by the State in this matter, whether it be a policy of careful supervision and of restriction of the issue of paper notes or coin, or whether it be a policy of throwing large quantities of new money on the market, the value on the markets of the world of that State's currency must naturally depend. Depreciation of paper currencies before the War was in most cases caused by excessive issues of paper money.

Factors which act upon State credit are also of little importance in normative currencies so long as only standard money of full weight is full legal tender, or so long at least as such money largely predominates in the circulation, because the value of such money is intrinsic and is quite independent of external circumstances. On the other hand, in a monetary system which comprises exclusively or mainly money whose intrinsic value is less than its nominal value, the value which attaches to the currency on the world markets will also depend largely on considerations of the economic, financial, and political prospects of the State in question. In particular, in the case of a paper currency, the question will always arise whether, and if so, when and at what rate of exchange the resumption of convertibility of the notes may be expected. Economic and political crises and a bad financial

policy diminish expectations of this nature and tend, therefore, to depress the rate of exchange of the currency, while a favourable course of economic, financial, and political developments may raise the rate of exchange.

The far-reaching effect of all these factors can be seen from the history of the exchanges of every country with a free currency. In so far as periods before the War are concerned, we may perhaps be allowed to refer in this connection to the writer's investigation into the history of the Russian paper currency during the eighties of the nineteenth century.[1] Therein it was shown that the rouble exchange in Berlin depended primarily upon the fluctuations in the Russian exports of wheat, the most important and the most unstable factor in the international indebtedness of Russia, whilst at the same time it was observed how at times political causes interrupted the workings of this relation. The post-war period with its unprecedented dislocation of international exchanges is in itself a striking illustration of the effects of the factors referred to.

¶ 7. Regulation of Rates of Exchange

In any two currencies linked to the same metal the mint par of exchange between them is fixed *ex institutione*, and the small margin on each side of this point within which the rates for hard cash, bills of exchange, and cheques can vary is determined by definite and calculable factors.

The position is similar in the case of two currencies linked to different metals, except that here the mint par of exchange does not follow merely from the nature of the two currency systems, but must be calculated on the basis of these systems in accordance with the price of silver as it stands at the moment.

In both groups the extent to which the State can exercise an influence on the rates of exchange is limited, except in so far as this influence relates to the constitution of the system and to its maintenance. Where any influence is exercised, it proceeds usually from the great note-issuing banks to whom the duty of regulating the money circulation is delegated. We have already seen that the note-issuing banks can, by fixing prices for the purchase and sale of gold bars and of foreign gold coins, and by granting advances free of interest against deliveries of gold, exercise a certain influence on the rates of exchange at which the import or export of the standard metal becomes profitable; and in this way can also influence the extent of the margin of fluctuation of these rates of exchange.

[1] *Aussenhandel und Valutaschwankungen*, first published in Schmoller's *Jahrbuch*, vol. xxi, 2, and subsequently in the author's *Studien über Geld- und Bankwesen*.

Within this margin the banks can influence the movements of the exchanges by certain measures of banking policy, particularly by the regulation of rates of discount and by a systematic manipulation of operations in foreign bills of exchange. A fuller study of these matters can only be undertaken in connection with a detailed treatment of the banking system. At present we need only indicate that the rate of discount of a large note-issuing bank, in so far as it influences the country's general rate of interest for short-term credits, affects to some extent the international movement of the precious metals. A relatively high rate of discount, which makes the investment of money in the country in question appear to be a profitable proposition, increases the demand for the money of that country and favourably affects its rate of exchange. If, moreover, it so happens that a note-issuing bank has purchased and locked up a substantial supply of foreign bills at a time when the rate for these was low, it can, when the rate is high, counteract the unfavourable tendency of the rates by throwing some of its stock of bills on the market.

But so long as the organisation of both normative currencies remains intact any such regulating influence can only be exercised within the narrow limits about the mint par of exchange resulting from the systems themselves.

Free currencies, however, give a much wider scope for the exercise of influence by the State or by its authorised agents. In these cases there is no par of exchange *ex institutione*. The State can, therefore, fix some arbitrary parity point as a desirable aim and it can attempt to make this par effective by means of its own financial policy and by the policy of its banks.

The best-known pre-war example is provided by Austria-Hungary. This monarchy had, in fact, provided in its legislation for a gold standard, but up to the outbreak of the War the Austro-Hungarian bank had not officially undertaken to redeem its notes in gold. Yet the Austrian currency had from the middle of the nineties of the previous century remained almost stable in its relation to gold standard currencies, just as though the gold standard had actually been brought into operation in Austria-Hungary by gold payments for notes. This resulted partly from the free coinage of gold which was in force from the beginning of the nineties, and in consequence of which the rate for the Austrian crown could not rise much higher than 85 pfennig in German currency; and partly from the policy pursued by the Austro-Hungarian bank, which kept a considerable reserve of gold and a large stock of foreign exchange of gold standard countries. In the event of the money market not being able to meet the demand for the currencies of countries on a gold standard, the bank gave up

some of its stock of foreign exchange, and, if necessary, also gold bars at a rate which did not much exceed the parity desired.

For such a policy to be carried out, the bank must naturally be in a position to go on replenishing its stock of gold and of foreign exchange after each drain upon its reserves in order to maintain the rate of exchange. Whether this drain can be supported depends in turn on the country's balance of international indebtedness and possibly also on the credit of the State. In any event, the security given for the upkeep of the rates of exchange by such banking and financial measures is not the same as that which follows *ex institutione* from the organisation of the monetary system, which can only become nugatory by a change in the monetary system itself, *e.g.* by the suspension of the convertibility of notes.

The method of regulating the rate of exchange of the Russian rouble adopted by the Russian State bank from 1894 onwards, in preparation for the commencement of gold payments, was similar to the above. The Ministry of Finance held considerable gold credits in various foreign centres, particularly in Berlin, and these were used for the purpose of regulating the rate of exchange of the rouble. When the tendency of that rate was downward, these credits were employed for purchasing rouble notes and bills of exchange on Russia. When the tendency was upward, the Minister of Finance caused rouble notes to be offered for sale. In this way it was found possible actually to stabilise the rate of exchange of the rouble before the conversion of notes into gold was undertaken. But even this case illustrates the example of Austria-Hungary above, for the stabilisation of the rate of exchange was at the mercy of the arbitrary will of a departmental authority, and of the means at its disposal, and the monetary system itself contained no guarantee of stability for the rate of exchange.

In a similar manner Argentine has stabilised since 1898, by the aid of a "conversion fund," the rate of its paper money in terms of the currencies of gold standard countries.[1] This limited degree of security is sometimes practically demonstrated by States whose exchanges are not stabilised by the nature of their monetary systems, but who, finding it difficult to place loans in terms of their currency on the international money market, maintain a degree of stability by more or less arbitrary measures. They must either accept unfavourable terms so as to cover the greater risk run by the lender, or else they must be content with giving their creditors the option of lending them money in terms of gold standard currencies.

On this question of the regulation of rates of exchange by way

[1] For the case of Russia and the Argentine in particular, see Carl A. Schaefer, *Klassische Valutastabilisierungen*, 1922.

of banking and financial measures we must also disagree with Knapp.

He concludes from the fact that by such measures, which he describes collectively as "exodromic measures," a fixed rate of exchange can be attained even in cases where no normative currency ("hylodromy") exists, and that it is not necessary to connect the value of money with some metal in order that a fixed rate of exchange ("exodromy") should be created. In this he is doubtless right in theory and also to some extent in practice.

But Knapp oversteps the mark when he puts forward the further proposition that from the monetary systems of two countries a par of exchange cannot arise without further conditions, and that such a parity can in fact only come into being where it is definitely aimed at by the governing authorities of the countries in question, and that it is realised by measures designed specifically for the purpose (p. 238). According to him, the "choice of the parity point" always depends on a "decision" (p. 211). "Ever since Germany has, like England, had a gold standard currency, a par of exchange between these two countries has existed, because a decision was taken to regard the rate which corresponds with the mint par of exchange as the rate of exchange, and because efforts have been made to maintain it by special arrangements. It would have been possible, although there would have been no point in doing so, to set up and maintain some different par of exchange" (p. 211).

As has been shown above, however, it follows, with mathematical certainty, from the fact that the monetary units of two States with the same standard metal are related to each other, that the reciprocal rates for money and for short-term claims can fluctuate only within certain limits, calculable for any point of time, on each side of the par of exchange given by the metallic equivalent of the two money units.

This makes it both theoretically and practically impossible to set up and maintain between two countries with the same normative currency a par of exchange which is other than that which follows of itself from the two monetary systems. If, in the circumstances which existed in the currencies of Germany and England before the War, the German Government had wished to fix the par of exchange between German and English money at 30 marks, instead of 20·43 marks per pound sterling, this would have been just as nonsensical and as impossible of performance as if it had undertaken to pay 30 marks for every 20·43 marks. For in such a case the German Government would have had to declare its readiness to pay for all bills of exchange on England, or for all types of English currency offered to it, 30 marks per pound sterling, whereas from the quantity of gold contained in

or obtainable for each pound sterling, it could have produced only about 20·43 marks of German money. The case would have been the same in any attempt to fix a rate below the mint par of exchange. If it had been thought desirable to fix the par of exchange at 15 marks for one pound sterling, the German Government would have had to give one pound sterling for each 15 marks, whereas it could have procured pounds only by paying 20·43 marks for them. Both cases would have brought about an endless drainage of gold from the country which attempted to adopt a financial policy practically so impossible and theoretically so ludicrous.

If, therefore, we refuse to follow Knapp in his excursion in this direction, and if we keep steadfastly to the opinion that in the mutual relation between two normative currencies the par of exchange follows from the two monetary systems as such, we do not deny that, in the case of normative currencies, banking or financial measures may be of importance, but simply maintain that such measures do not apply directly to the actual fixation of the par of exchange as against other currencies, but merely to the proper upkeep of the country's own monetary system, which of itself gives the rates of exchange of its money in terms of such foreign currencies as are on the same basis.

¶ 8. An International Monetary Unit and a Common Standard of Currency

Our investigation into the mutual relations between individual national monetary systems shows that only between normative currencies on the same metallic basis does there exist a relation which corresponds to the requirements of international trade and which is subject to but very small fluctuations, whereas in the reciprocal relations between a gold and a silver standard currency, as well as in those between a normative and a free currency and between one free currency and another, there is always the possibility of violent fluctuations which cannot be calculated in advance. But the small fluctuations of the rates of exchange between normative currencies, the inconvenience arising from the multiplicity of units of money of one and the same normative system, the restriction of the validity of the currency of each country to its own territory, and the necessity, in international transactions, of exchanging the money of one country against the money of another; all these inconveniences, though insignificant when compared with those resulting from violent fluctuations in the rates of exchange between the currency and other currencies, were felt as a disadvantage from the earliest times.

Hence, at various times, efforts varying in degree have been made to create one uniform international monetary system out

of the number of different ones already existing. A uniform world currency appears, on purely theoretical grounds, as the ultimate end of that property of money which created the imperative necessity for the establishment of uniform national monetary systems, namely, the widest possible territorial extension of its "validity." The desire for a uniform currency gains especial force at times of great expansions in world trade. The endeavours to set up a world unit of coinage were greatest in the years from 1860 to 1870, clearly following upon improved means of transport and the diminution and partial abolition of the high customs barriers which had heretofore divided countries from each other. In the historical part of this book, it was shown how these endeavours, notwithstanding the enormous support given to them, especially by the French Empire which was then pre-eminent, only led to the formation of the Latin Union, comprising few countries, but not to one unit of currency for the whole world as the French statesmen had long dreamed of. The causes were not to be found only in the bloody political events of the year 1870–71, which gave a set-back to ideas of international brotherhood, and by increasing nationalism repressed internationalism, but lay chiefly in the difficulties inherent to the problem of a world currency.

Considering the determining influence of State legislation upon currencies, it is only possible to institute a uniform monetary system and a common circulation without difficulty where uniform legislation exists, that is within the confines of a single State. It is true that international agreements regarding the control and regulation of the monetary system and in connection with a more or less common circulation may be, and have been, concluded, but, as we have already discovered in part, the experiences gained from such agreements cannot be regarded as in any way encouraging.

If sufficient guarantees for the maintenance, in a state of efficiency, of a common circulation are to be provided, even if only on paper, then the contractual engagements of the several parties must be so far-reaching as to be, for the most part, inconsistent with the sovereignty of States and with the freedom of action which is so vital to States. Was not this in fact the great difficulty which, before the creation of the Reich, made the setting up of a common unit of currency impossible even within the German Customs Union? Radical provisions regarding the circulation of token money, far-reaching reciprocity of control in the matter of the exactness of coinage, agreements concerning tolerated deficiency and withdrawal from circulation of worn coins, and safeguards against the dangers which threaten the monetary systems by the issue of inconvertible paper money,—all these points require regula-

tion if a common currency is to be established. In the Latin Union all these requirements were not fully met, the Union contenting itself in the main with fixing the weight and fineness of the various types of currency, laying down quotas for the coinage of token money, and imposing upon the individual States the obligation of converting their token money. No attempt was made to control the production of the mints, to fix the tolerated deficiency, to make regulations for the redemption of worn coins of full legal tender, or to provide safeguards against the dangers of excessive issues of paper money. It was just at the end of the sixties of the last century that it was currently reported that the coinages of the Paris mint lacked exactness, and that no effective safeguards existed in France against the circulating currency becoming too greatly worn, so that in Germany, where long and bitter experience had shown the effects of an inexact coinage and of a debased circulation, the enthusiasm for a joint currency with France waned considerably. To this was added the circumstance that, in the first year after the conclusion of the Latin Union (1866), Italy found it necessary to make its bank notes inconvertible. Notwithstanding that the unit of money was nominally the same, and that a common currency existed on paper, the Italian currency fell greatly in value in its relation to the currencies of the other States of the Union. Moreover, the Italian token coins were drained away to those other States where, in accordance with the terms of the convention, they had to be accepted by the Treasury and the banks at their full nominal value; the 1-lira piece being taken as a one-twentieth part of the gold 20-franc piece, while in Italy itself it was, at first, in view of its inferior intrinsic value, equal only in value to the depreciating paper money. Thus, anyone could make a profit by buying Italian paper currency in France at about 105 lire for 100 francs, changing it in Italy for silver token coins, and then changing these in France at their nominal value into gold money. At a later date, too, particularly in the year 1893, Italy again found herself in the same position and for the same reasons. The drain of her silver token coins to other States of the Union was a serious burden on the Italian money market, and as far as these other States were concerned the influx of Italian token coins rendered illusory the fixed quotas for the amounts of token money in circulation. In the interests of both sides it was found necessary to make, in 1865, a supplementary agreement, which excluded the Italian token coins from the other States and imposed upon Italy the duty of taking back these coins at their nominal value from those States.

The War completely destroyed the Latin Union. At the time of writing (the middle of March 1922) the Swiss quotation on Paris, Brussels, and Rome is 32·80, 28·50, and 25·50 francs respec-

tively for 100 francs of French or Belgian currency or for 100 lire of Italian currency.

Though one may intend to provide, by agreement, all conceivable safeguards for a common circulating currency, it is not possible even with the greatest care to foresee, when drafting a currency convention, all the contingencies which at some future time might become of decisive importance. As an example we need only recall the problems which arose from conditions, which it would have been impossible to have anticipated, in connection with the liquidation of the Austrian talers and of the silver 5-franc pieces. But even when all conceivable precautionary measures have been taken there is still no guarantee that, at the decisive moment, the agreements will be kept. Financial breakdown or considerations of self-preservation on the part of a State can nullify the most far-reaching contractual provisions, to the detriment of all the States participating in the common currency. Thus, the Vienna Convention of 1857 expressly provided that none of the participating States should assign to inconvertible paper money the power of full legal tender. Nevertheless, Austria, which at the time when the agreement was concluded had a paper standard currency, found it necessary, after a short-lived attempt to resume cash payments, to reintroduce inconvertibility, and she remained throughout the entire period during which the convention was in force on a paper standard.

With these experiences and considerations in mind, the comparative advantages of an actual universal monetary unit—the saving in calculation and the avoidance of changing from one unit to another—cannot be rated very highly. As we have seen, by far the greatest majority of international monetary transactions take place not by means of metallic money, but by bills of exchange and similar documents. Even with a common unit of account the bill of exchange would have a varying rate because circumstances would still necessitate the actual sending of money from one country to another, and cost would be incurred thereby. One need only look at the fluctuations of the Paris rates of exchange on Brussels and on Zurich, even in times of political peace and of undisturbed monetary systems, to obtain an idea of how little could be achieved by a common currency in the sphere of international monetary transactions. The advantages of a common currency would in the main accrue only in international travel, and these advantages, compared with the disadvantages enumerated above and the inconvenience of recalculating all current obligations into a new and alien system of coinage, are too unimportant to have given practical shape to the conception of a world unit of money.

Nevertheless, the international need of the universal adoption

of a common standard of currency has been placed beyond doubt, especially since the ratio of value between silver and gold became disturbed. Fluctuations in the relation between the value of the currencies of individual countries, which so adversely affect world trade, could by such means be reduced to a minimum, possibly even to a vanishing point, and even without the additional adoption of a common coinage. This aim could, in fact, be attained on the basis of a common standard without the individual States in any way binding themselves by contract or having to adopt a common medium of circulation, and, therefore, without raising doubts and difficulties such as follow in the wake of international currency agreements. The condition precedent for this is, however, that the economic, financial, and political conditions of the various countries should permit of an organisation of the currency, based on gold, being instituted and preserved.

¶ 9. The Double Standard Agreement

After the depreciation of silver had set in, it looked for a long time as if even a common standard of currency could not be achieved by way of the autonomous legislation of individual States. It seemed that the actual course of the currency policy of the various States and the developments in the field of production of the precious metals would of necessity leave the world divided into gold standard countries and silver standard countries, between which only one bridge was conceivable—that is, the double standard by agreement. Although the efforts to set up such a system have no longer any practical importance, the construction of the system is of interest in connection with the theory of money, and we must, therefore, say something about it here.

The double standard by agreement, or bimetallism, does not of itself by any means imply a common circulation such as existed in the countries of the Latin Union. Neither does it involve similar monetary systems, nor even a simple relation between the different national units of account, such as was ultimately proposed at the International Currency Convention held in Paris in 1867. An agreement having for its purpose the introduction of bimetallism should in fact in its very nature relate only to the standard of the currency. The idea is that the various States should merely undertake to introduce the double standard on the basis of one and the same ratio of value between the two metals, *i.e.* a system in which gold and silver coins are absolutely interchangeable at the nominal values assigned to them, and are freely coined for private account, as legal tender, on the basis of one and the same ratio of value to be fixed by common agreement. The system could, of course, be put in force only if the fact of a common basis of

coinage sufficed to exercise a dominating influence on the actual relation of value between gold and silver. So long as this applied, an agreement setting up bimetallism would in effect result in complete stability between the rates of exchange of countries on the gold standard and those on the silver standard, as well as of countries using both these metals for their circulation.

The doubts expressed above in regard to the feasibility of a common circulation for a large number of States do not, as such, apply to bimetallism, as a common bimetallic system is possible without a common circulation. At the same time very weighty arguments exist against this system.

The protagonists of bimetallism refer to the fact that modern States do not shrink from restricting by international agreements their freedom of self-determination in a number of spheres of considerable economic importance. Post office and railway agreements, etc., are quoted as examples. From this fact the conclusion is drawn that there can be no objection in principle to an international agreement regarding the currency standard. This line of argument overlooks, however, a special factor which comes into play in agreements relating to money. When a country concludes an agreement relating to its postal service, or to its trade, and the agreement ceases to operate after a time, this does not entail any permanent burden on the State. It may be that the State has had to suffer during the operation of such an agreement from unfavourable provisions therein, but these ills are not incurable. In an agreement for the purpose of the double standard, however, the position is different. Such a convention would place each of the contracting States under an obligation to coin whatever quantities of silver were brought to their mints for the purpose, and it would thus make silver full legal tender. This kind of undertaking would bring about consequences which would by no means be disposed of by denouncing the agreement. If the agreement ceased to operate either because one or other of the parties did not keep loyally to its provisions, or because, for inherent reasons, a bimetallic system could not permanently be retained, then the position of all those States, which at the beginning of the agreement had enjoyed a secure gold standard currency, would at the end of it be substantially more unfavourable. The silver coins struck during the operation of the agreement would be a source of continual responsibility to the States concerned, and would constitute a threat to their monetary systems, so that a return to sound currency conditions could be affected only at a great sacrifice.

In this consideration lies one of the greatest obstacles with which the movement in favour of bimetallism was faced during the quarter century from the second half of the seventies to the end of

last century. Most people placed in a position of responsibility suffer from conscience more than they themselves suspect. This fact manifested itself clearly in connection with the question of bimetallism. Statesmen, who as irresponsible politicians and parliamentarians were enthusiastic and active supporters of the idea, when placed in a position of government and faced with the task of giving their ideal practical effect, found themselves hesitant. This applied, for instance, to Arthur Balfour (now Lord Balfour), whose entry into the British Cabinet aroused in German bimetallists in particular great hopes in the second half of the last century. Great was their disappointment, therefore, when, as Prime Minister, Balfour failed them. Similarly, the Prussian Minister of Finance, von Scholtz,[1] who also started with leanings towards bimetallism, declared on one occasion that having in the course of his duties studied the draft agreements for bimetallism which had been placed before the Paris Currency Convention of 1881, he had been converted to the opposite view. He stated that he had never seen a draft agreement setting up bimetallism that could be signed by any statesman who loved his country and had no wish to betray it.

The developments in the last decade before the War, however, showed that progress towards bringing about a common international standard was possible even without a double standard introduced by convention. The need of the economically more backward silver standard countries, and of those civilised States which had slipped into a paper currency, for a closer connection and undisturbed relations with the large trading countries which dominated the world of commerce had—in conjunction with the increase in the production of gold—led to the development explained in the historical part of this book. It resulted in the first decade of the twentieth century in gold becoming the basis of currency of the majority of commercial countries of the world. The damage which for several decades had been wrought by the fluctuations in the exchanges between gold standard countries, on the one hand, and silver standard, and especially paper standard, on the other, was substantially diminished by this process of development, and the international organisation of money was brought by the gold exchanges very much nearer to that most desirable ideal of stable relations between the currencies of the various civilised countries. The War, which destroyed national monetary systems and revolutionised the balance of international indebtedness, has driven us further than ever away from this goal.

[1] [Adolf von Scholtz was Prussian Minister of Finance from 1882 to 1890.]

§ 3. THE DEMAND FOR MONEY, THE SUPPLY OF MONEY, AND THE VALUE OF MONEY

Prefatory Note

In the theoretical part of this book we have examined the economic concept and the functions of money, and the organisation of monetary systems. There still remains for consideration a closely interdependent complex of theoretical problems. The monetary requirements of nations must be investigated: and the causes also which determine these requirements and produce changes therein. Closely connected with this group of questions is the problem of the provisioning of nations with money. The juxtaposition of these two groups leads to the further problem of the equilibrium between the demand and supply of money and of the effects of disturbance of that equilibrium. In the case of economic goods, demand and supply and any change in the mutual relations of these two factors affect the economic value of such goods. A similar assumption may be made as regards money. On this assumption, and beginning with the elucidation of those monetary problems which may be regarded as purely quantitative, we may proceed to an investigation of the "value of money" and of movements therein, and be led finally to a study of the concomitants and of the effects of changes in the value of money.

CHAPTER VII

THE DEMAND FOR MONEY

¶ 1. The Development of the Theory of the Demand for Money

In the early days of commercial enterprise, when money was regarded as the real embodiment of wealth, the conception of a demand for money arising out of the economic conditions and circumstances of the period was quite unknown. A large accumulation of the precious metals, which alone were regarded as money, was held to be an object desirable in itself, quite apart from any question of the specific purposes to which these metals would be applied. Money, as such, was still regarded in the same light as were the treasures of Indian princes, which are collected for their own sake and to the accumulation of which there is no limit set by considerations of utility.

It was only when it was realised that the utility of money, as that of all other goods, consists in its serving definite economic

purposes, and that it is redundant if it is not needed for the performance of its special functions, that the first impetus was given to a study of the magnitude of the demand for money. When it was further recognised that those objects which perform the functions of money are withdrawn from direct use and consumption and serve only as a medium of transfer of economic goods, the conclusion was ultimately drawn—a conclusion in direct contrast to the original view—that it was of advantage to perform the functions for which money is intended with as little money as possible. Money is in some measure the machine which effects the transfers inseparable from our modern economic institutions. Just as it is an advantage to produce and work ordinary machines as cheaply as possible, so also in economic life it is of advantage to effect these transfers with as small a quantity of money as possible. Adam Smith had already compared the saving in metallic money made by the use of paper tokens with the saving which would result if the transport of goods, which necessitates roads and thereby withdraws acreage from agriculture, could be partly carried on by air, so that the road surface would again become available for agricultural production.

The earliest views upon the quantitative demand for money were to the effect that an equation must exist between the total amount of money and the total amount of other goods in a country. It can be shown that this view was held as early as the year 1588 by Davanzati (*Lezione sulle monete*). According to his theory the sum total of the things which satisfy human needs is taken as equal in value to all the gold, silver, and copper, and the parts are to each other as the wholes. Locke adopted this view and exemplified it by the analogy of a pair of scales, with goods in the one scale and money in the other. He considered that both scales of this large weighing-machine must be in a state of constant equilibrium. This view is not very far removed from the theory of the value of money. The equation between money and goods can be nothing more nor less than an equation of the value of the two great categories of goods which are variable in quantity. A change in the quantity of money, unaccompanied by a change in the quantity of goods, leaves the aggregate value of money unaltered, but for that very reason brings about a change in the value of the individual pieces of money. When the quantity of goods remains the same, an increase in the quantity of money brings about a corresponding diminution in the value of each individual piece of money, and a decrease in the quantity of money leads to a corresponding increase in the value of each piece of money.

It can, however, easily be shown that this view is incorrect. Of the total stock of goods of a nation only a certain fraction is

at any given time being transferred, and being thereby placed in a relation to money. Moreover, in most economic units the stock of cash is but a small fraction of the wealth held in other forms of goods (such as land, buildings, machines, raw materials, objects of utility and of consumption, etc.).

The observation of this most apposite fact led to a limitation of the theory explained above in the sense that the quantity of money can correspond in value only to the value of the quantity of the goods which are being disposed of or are intended to be disposed of. From this stage only a small step was required to the further modification that demand for money exists only in so far as goods are actually transferred. But one and the same piece of money can in any given period of time pass many times from hand to hand and can thus serve as a medium of repeated transfer. This led ultimately to the theory, which was long held, that the money demand of a country is determined, firstly, by the aggregate quantity of the goods which are to be transferred in a given period of time, and secondly, by the "rapidity of circulation" of money. Attempts were made to elucidate this theory by quoting the analogy of a ship the value of which for effective transport purposes does not depend only upon how much it can carry, but also on how many journeys it can make in a given time. The theory has also been expressed in a mathematical form. If we take the aggregate value of the annual turnovers as n, the requisite quantity of money as m, the average rapidity of circulation of the money—that is the number of times which it passes from hand to hand within the year—as s; then we obtain the equation $m=\frac{n}{s}$. John Stuart Mill expresses this idea by stating that if each piece of money changes hands on an average ten times, while goods are sold to the value of a million pounds sterling, it is evident that the money required to circulate those goods is £100,000. Sismondi formulated the theory as follows: "The sum of the circulating media in a country must be equal to the sum of the payments made during a given period of time divided by the number of times which these media change hands within that time."

Even in this form the theory of the demand for money has not remained unassailed. Attention has been drawn to the fact—which has, moreover, been accepted as self-evident by the classical English economists—that the saving in the use of cash, through the use of money substitutes, and especially through the development of credit instruments, was, as well as the influence of rapidity of circulation, an essential factor determining the amount of money demanded. The greater the number of transfers effected with a saving of cash, the smaller the demand for money. In the

mathematical formula quoted above we should have, therefore, to deduct from the quantity "n" (the aggregate sum of transfers) a number corresponding to the sum of the transfers effected without the use of money.

At the same time it was pointed out that it was by no means the only function of money to act as a medium of transfer of goods, and that money in economic intercourse was also largely a medium of unilateral transfers of value and a medium of capital transactions. If, in order to arrive at the demand for money, we take as our starting-point the payments (in the widest sense of the word) which are to be made in a given period of time, irrespective of whether these payments are based upon twofold or unilateral transfers, even then a further residuum is left, as money, in its function as a store of value, is the object of a definite demand, differing in intensity with the varying characteristics of individual countries and of economic units. Thus Menger writes as follows:—

"Even those who attempt to calculate the demand for money in a country on the basis of the value of the quantity of goods to be transferred within some definite period of time, or on the maximum amount of the payments to be made within a period of time, taking into account the 'rapidity' of circulation of the money (estimated from the larger or smaller number of cases in which it is the rule to make payments in the period in question with the same pieces of money), fail to recognise the real factors which determine the demand for money in a country. They overlook the fact that the quantity of money which at any time may be employed in payments constitutes only a part, and a relatively small part, of the ready money which is needed by a country, and that another part of such money must (in the interests of the undisturbed functioning of the economic machine) be kept readily available in some form of reserve for the purpose of possible payments, but which do not actually take place at all. The reserves of ready money actually held in the safes of the note-issuing banks, in the money coffers of the State, of public bodies, savings banks, and credit institutions, and especially in private hands, where they are held only against some indefinite need, some rare and unusual danger, although not usually drawn upon for payments, constitute nevertheless a part of the demand for money in the country just as do the small amounts of token coins in the possession of individual households which pass from hand to hand many times daily. The sums of money hoarded by private individuals and, even to-day, by various public authorities must also be taken into account, as they must be considered when calculating the demand for money in a country during definite periods, although they do not normally find employment in money

transactions during the periods of time in question. The demand for money in a country, just as the demand of individual private households, does not find anything like its correct expression in the payments which fall due simultaneously within some specified period of time, even if these are calculated on the most generous scale."

According to Menger, a theory of the demand for ready money corresponding to the real state of affairs can be arrived at only by an investigation, which adopts as its starting-point the demand of the separate and communal units of which the aggregate economy of the country is composed. The demand of a country for money is a comprehensive concept obtained from the aggregate of the money stocks of the individual and communal economic units of the country, and its final measure is to be found in that aggregate.[1]

Richard Hildebrand [2] criticised the theory indicated above even more strongly. He does not admit that it has any validity whatever. First and foremost, he states, it is a mistake to bring into direct connection the demand for money and the turnover of goods, because for purchases which are merely the *incurring* of obligations to pay, no definite quantities of money whatever are required; these are only required for the *fulfilment* of obligations to pay, which need not by any means coincide with the purchases. Thus money is the object of a definite demand only as a medium of payment and not also as a medium of transfers, and the demand for money can therefore at any time be determined only by the sum total of the obligations to pay which have fallen due and not by the sum total of the transfers to be effected.

The second error in the theory which has gained acceptance is to be found, according to Hildebrand, in the conception of the "rapidity of circulation" of money. He claims that the analogy with the speed of a ship is false, as in the case of a change in the ownership of money we are not dealing with a mechanical process which depends, as in the case of the ship, essentially on the technical constitution of the object in motion. The so-called rapidity of circulation of money depends wholly and solely upon circumstances which are quite external to money, or in regard to which money plays an absolutely passive rôle. In view of this, the rapidity of circulation of money tells us nothing in regard to the actual factors which determine the demand for it,

[1] In the third edition of the *Handwörterbuch* Menger added the following sentence: "The monetary demand of a country, therefore, does not follow from a mechanical summation of the demand of individual households for ready money. The functions of the institutions which, on the one hand, offer a substitute for coin and, on the other hand, save cash, must also be taken into account."

[2] *Die Theorie des Geldes*, Jena, 1883, p. 33 *et seq.*

and the statement that the performance of a given volume of payments within a given period of time requires a quantity of money which is the smaller in proportion as more of these payments can be effected with the help of one and the same piece of money means, according to Hildebrand, nothing more than that two and two make four. The entire theory which bases the monetary demand on the rapidity of circulation of money is, therefore, mere empty formalism which leads nowhere. Moreover, it is quite impossible to estimate even approximately, much less to measure, the "mean rapidity of circulation" of money in a country. The entire theory is quite fruitless.

In criticising the theory Hildebrand, however, did not desire to remain as ineffectual as the theory itself. He sought, therefore, to determine the demand for money in some new way. According to his conception, the path to follow is to consider not the individual pieces of money but the actual process of payment, and not a whole period of time but a point of time. In this way the money demand is determined quite simply by the aggregate amount of payments to be made in the country in question at a given *moment*, *i.e.* simultaneously, or, if it is a question of determining the maximum demand for money *within* a whole period of time, *e.g.* a year, this is determined by the maximum amount which the payments to be made simultaneously within that period can at any moment reach. Hildebrand, however, makes a reservation in this connection. His theory passively assumes that all undertakings to pay must be met in cash. In reality, however, a far-reaching compensation or cancellation of obligations to pay can take place when dealing with a concentration of payments at definite points of time, places, or institutions, and thus the demand for money is correspondingly diminished.

¶ 2. The Really Determinative Factors in the Demand for Money

A closer consideration of the "dominant theory" outlined above, and of the typical arguments of Menger and Hildebrand, brings us to the following conclusions:—

The primary and basic factor of the magnitude of the demand for money in a country must be the amount of the transfers to be made through the agency of money. Not only unilateral but also bilateral transfers must be considered, *i.e.* not only acts of exchange but payments in the narrower sense, and capital transfers effected by money.

It may appear questionable whether money is, in its other functions, the object of a definite and determinable demand. Clearly it is not, in its function as a measure of value. It is

true that in order to express the value of an article in money the existence of money is necessary, but it is quite immaterial in what quantity it exists.

How far there is a definite demand for money as a carrier of value through time and space is a more difficult question. The separate function of money as a medium of transport of value is, however, as has been shown, of such little importance that it can quite properly be left out of account here. It is only the demand for money for purposes of hoarding which must be considered in this connection. Let us, then, following Menger's lead, look more closely into the small and large reserves of money accumulated and preserved in a country by private households and commercial concerns, by banking institutions, and on behalf of the State Treasury. We see immediately that there is a difference between stocks of money which lie absolutely idle and unused—such as the hoarded treasures of old, the miser's long stocking, and the paper notes locked up in the peasant's box—and the cash balances of individual households and concerns which are intended exclusively and specifically for payments, or which serve, as in the case of the cash reserves of large banks, as the basis of certain arrangements, the purpose and ultimate effect of which is a more intensive exploitation of money as a medium of all kinds of transfers. These purposes do not come into play when money is hoarded, not as a medium of payment but only as a mere carrier of value. In so far as the extent of the demand for money is concerned, this difference is manifested by the absence of any kind of *determinate* demand for money purely for the accumulation of wealth, irrespective of the function of money as a medium of transfers, any more than wealth as such is a determinate factor of demand for commodities in a country. In this connection the mercantile theory applies even to this day. On the other hand, the position is different in the case of those stocks of money which are held either specifically for purposes of payments, or as a basis of arrangements which serve for the settlement of payments. In so far as such money stocks or balances are concerned, the money is, as Menger rightly asserts, an object of definite demand. But the demand for such cash balances and reserves cannot, as we shall soon see, be in any way separated from the demand for money for payments (in the widest sense of the word). This brings us to the stage at which we must investigate both the question put forward by Hildebrand—that is whether a point of time, and not a period, should determine money demand—and the connection between cash reserves and balances and the "rapidity of circulation" of money.

Let us follow Hildebrand and fix our attention on the total stock of money, at a given point of time, intended to serve as a medium of transfers. We find that only a part of such stock, and

mostly only a very small part of it, is in motion, and accordingly actually in process of fulfilling its normal purpose. The remainder is at rest in the money bags of individuals and in the cash boxes of the various concerns. Does, then, the demand for money of a country actually cover, as Hildebrand states, only the money which is at the time in motion, and does the maximum monetary demand of the country over a period of time correspond, in effect, to the highest aggregate reached at any point of time within that period by the payments to be made? Or else is Menger right in including the demand for money for reserves and cash balances of all kinds, in addition to the demand for transfers which are at any time due to be actually effected? The question contains, at first sight, an answer in favour of Menger, for no one could assert that cash balances, though inactive at any given moment, are redundant in so far as the economics of the country are concerned. Hildebrand's point of time of payments, which he contrasts with the period of time, is no less of an abstraction than the "rapidity of circulation" of money which he criticises so severely. Concentration of payments at one and the same moment cannot seriously be made the basis of investigation. As soon, however, as the payments, said to be "simultaneous," are spread over a period of time, however short—be it an hour or a day—there appears immediately the factor which Hildebrand excludes from his line of investigation, namely, that one and the same piece of money can be used for several payments. The money demand of an hour or a day can thus, in certain circumstances, be smaller than the sum total of the payments which fall due within the hour or day, even if we leave out of account compensating cancellations of the payments due.

From the other line of approach we come to the following considerations:—

If a certain sum total of payments falls due on a particular day, and this total represents the maximum within a year, then the amount in question can be regarded as the maximum of the country's demand for money for purposes of payment only if the payments to be made on the following day can be made in pieces of money all of which have already on the previous day served the purpose of money payments. If on a given day there be 100 million marks to pay, and on the day following only 50 million marks, but by persons who received no payments on the first day, then, unless quite exceptional conditions apply, those who have to make payment on the second day must already on the previous day have had in their safes 50 million marks as cash reserves. The maximum of the money demand of the country is, then, not 100 million but at least 150 million marks. The case which the theory of Hildebrand assumes to be self-evident, namely, that

in which at the second point of time the same pieces of money are set in motion for payments as served for this purpose at the first point of time, can occur only in two sets of circumstances: either the payments at the second point of time are to be made by the persons and concerns who received sufficiently large payments at the first point of time to enable them to make the payments at the second point of time; or else the persons who are under an obligation to make payments at the second point of time must be able to lay their hands on the requisite money by way of credits placed at their disposal by those who received payments at the first point of time. Where these conditions do not apply there can be no question but that those who must make payments at the second point of time must, at the first point, have already been in possession of a stock of money which was at rest, and that, at the same time, persons receiving payment at the first point of time must leave their money lying idle at the second point of time.

Can we, therefore, regard the demand for money for payments falling due at some later date, or payments which, by the special nature of the contract or debt underlying them, can be demanded at any point of time, as something different from the demand for money for payments which have actually to be made at the particular time? Can we, in other words, differentiate at all the demand for means of payment which are at rest from the demand for such means which are in motion? In our opinion we cannot. In fact, a more careful examination of the question leads us to a problem which is related to the problem of the rapidity of circulation of money without being altogether coincident with it.

If, then, as we have just seen, the payments which fall due at some particular point of time are not exclusively the determining factor of the demand for money in a country, but that this demand extends also to the money required for actual payments made, or possibly to be made, at future points of time, it follows that, to arrive at the demand for money, we must use as a starting-point a period of time. In that case, however, we must not take into account a demand for money for purposes of storage or reserve, as well as the demand for purposes of payment, because the demand for storage exists only in so far as the money is actually, or may possibly be, required for purposes of payment within the longer period of time. The cash balances lying idle at any given point of time must be greater when, not the rapidity of circulation of money (we are dealing here with a far wider concept), but *the intensity of exploitation of money*, of which rapidity of circulation is but a part, is smaller.

If the payments at the second point of time can be made wholly,

or for the greater part, with the same pieces of money as those used at the first point of time, then, at the first point of time, cash reserves need not exist quite to the same extent as would be the case if the payments at the second point of time had to be made wholly or to a preponderating degree in other pieces of money. The demand of the country for money is smaller in the first case, because the intensity of exploitation of the ready money (which in this special case is synonymous with rapidity of circulation) is greater.

As has been explained above, the increased rapidity of circulation of money and the consequent smaller demand for it may in the above case be due to the fact that the same individuals and households within the country have to receive and make payments in quick succession. But the various economic units in a country are by no means similarly placed in this regard. Side by side with wage-earners who receive and spend their wages day by day there exist the workmen who do so week by week. In such households, leaving out of account the existence of any considerable savings, large cash balances can never accumulate. The official who draws his salary quarterly is in a different position. Even if we leave his savings out of account, and also the transitory spending of surplus reserves, even then in such households we find at the beginning of each quarter substantial cash balances which are slowly consumed as the quarter proceeds. Those pieces of money which are used for payment in the last week of the quarter have been lying idle in the cash-box during the whole quarter. The same differences which arise regarding periods of receipt of money in the households referred to are also found in regard to the periods of payment due by such households. Where rents and interest payments are made annually the sums necessary for this purpose must gradually accumulate in these households. This withdraws larger sums from actual circulation than are thrown into circulation by an equally large expenditure spread more evenly over the year. Similar differences are to be observed in the case of entire groups of economic undertakings. In agriculture, the autumn, when the harvests are in, is the principal period of receipt of payment. In industrial undertakings, however, receipts are spread over the entire year, though, of course, not equally in all industries. Here, too, the periods of spending and receipt depend to a large extent on the change of seasons. This is particularly so in the clothing industries. But on the whole, the pulse of revenue and expenditure beats more strongly and more regularly in the case of industries than it does in agricultural undertakings. But, however greatly the principles of budgeting in relation to payments differ in the case of the various households

or economic units in the same country, there are certain general observations on this point which are universally applicable. The demand for money to which the sum total of the transfers to be effected by means of money during a longer period of time gives rise is the smaller the more evenly the payments are spread over the whole period, and the greater is the preponderance of the economic units in which receipts and expenditure follow each other in quick succession. Districts which are densely populated and have a highly developed and flourishing industry require, therefore, in proportion to the magnitude of their total turnover, a smaller stock of money than do districts with a sparse population, the people of which come into economic contact with each other only at specified times, and in which the prevalence of agriculture concentrates the receipt of money at certain times of the year.

Moreover, the cash reserves which individual private concerns must hold can, for one and the same mass of transactions to be effected by money, be the smaller, the greater is the development of credit arrangements, which have the effect of transferring ready money from the places where it is not at the moment required to those in which money demand exists at the time. The more the practice establishes itself of temporarily lending amounts which are not immediately required, the more certain are individual concerns of being able to procure for themselves, should they find it necessary to do so, requisite supplies of ready money by way of credit, and this diminishes the degree to which it is necessary to hold large cash reserves. This brings us face to face with the important facts that credit reduces the money demand not only in the way assumed in the generally accepted theory—that is, by acting as a medium in transactions which would otherwise necessitate ready money—but also by producing turnovers which require no new ready money but save it; that credit encourages the transfer of cash from hand to hand, and thereby increases the volume of transactions which can be effected within a given period of time by one and the same piece of money; in other words, that the rapidity of circulation of money is increased by reason of the fact that credit leads to a more intensive exploitation of the available supplies of money.

Whilst credit is thus an instrument adapted to diminishing the requisite cash reserves which would otherwise be needed for the same sum total of transactions, it is to be observed further that certain types of cash reserves give rise by way of credit to arrangements for effecting payments which make the exploitation of the available supplies of money for economic intercourse as possible, or even more possible, as does any increase in the rapidity of circulation of money. Under this heading we have the large cash reserves of the banks which are the basis of cheque, bank

account, and clearing business. As transactions of this nature presuppose cash reserves, it is incorrect to assume that they are effected with a direct and complete saving of cash. All that is saved by such arrangements is the transfer of ready money. In these transactions the ready money remains at rest in the safes of the banks. But the arrangements represent a more intensive mode of exploiting ready money than could be brought about by the ordinary transfers of cash, and this more intensive exploitation is not, as in the case mentioned above of money-lending, obtained by an increase in the mobility of money, but, on the contrary, as it takes place on the basis of cash reserves remaining at rest, is accompanied by a decrease in the effective rapidity of circulation of money.

Let us, first, consider the transfer of account-keeping by individual concerns to banking institutions and the resulting bank transfer and cheque transactions. It is clear that the concentration of the book-keeping for a large number of households and concerns in a single place implies a saving of cash. A bank which makes and receives payment for one thousand persons need not keep nearly as large a stock of cash as would be necessary if the one thousand persons in question acted without such concentration, because the payments and receipts are spread over different points of time, and as various clients of the same bank often have to make payments to one another, such payments can be made simply by cross-entry in the books of the bank. The clearing arrangements between a large bank and its numerous branches reduce the actual payments to be made to a very small proportion of the total book transfers. By this concentration of payments a given volume of settlements can be effected by means of a fraction of the ready money which would otherwise have been necessary. As a result, the banks are in a position to make a large part of the cash reserves confided to them again available to the market by granting credits, and they can, to some extent, by giving credit, create the very credit accounts on the basis of which they effect settlement of payments, for instance, by discounting bills of exchange, and instead of paying the person tendering the bill in metal money or notes, placing an amount to his credit in the books of the bank.

The possible exploitation of ready money is still further increased when several banks enter into an arrangement to clear each other's accounts and to settle by clearances the claims by one bank on another which result from transactions with customers. The most complete form of this arrangement is seen in the organisation of "clearing-houses," the model and first of which was started in London. Here individual banks settle the claims which they have on each other in such a way that even the residual balances of the banks are not actually

paid out in cash, but are transferred as clearing balances in the books of a central bank, such as the Bank of England or the Reichsbank, without ready money being used at all.

Similarly, in the case of metallic standard currencies with convertible bank notes, the combination of clearing arrangements with the issue of notes results in an extraordinary increase in the intensive exploitation of ready money. On this point we may refer to the interesting experiences of the German Reichsbank.[1] Current-account credits and note circulation are in one respect similar. For while neither has a full cover of metallic money, each nevertheless requires sufficient cover of metallic money for cash payments and for the ultimate redemption of notes. But it has been shown that the maximum and minimum points of the so-called "foreign moneys," which are in the main current-account credits, as well as of the note issues, do not coincide in point of time, and that, therefore, movements of these two liabilities tend to cancel each other in the long run. The variation between the maxima and minima amounts of the total of claims upon the Reichsbank falling due daily (notes plus foreign moneys) was from 1876 until the outbreak of the War, with the exception of one year, smaller in percentage than the variation between the maximum and minimum amounts of the note circulation taken alone. In most years the total variation in the case of the total claims falling due daily was even smaller in absolute amount than that of the note circulation alone. If we compare claims falling due daily, which are not covered by a cash reserve, with the similarly uncovered notes, we find that throughout the period of time in question (from 1876, the date of the creation of the Reichsbank, onwards), with the exception of two years, the variation in absolute amount between the maximum and minimum amount in the case of uncovered notes alone was greater than in the case of the claims not covered by a cash reserve. The greatest degree of compensation of notes and of "foreign money" took place in the year 1892. In that year the variation in the uncovered note circulation was 415 million marks, whereas the variation in all the daily uncovered claims amounted to only 197 million marks. This mutual cancellation enables the bank to keep a substantially smaller stock of cash as cover for notes and for foreign moneys together than would be necessary for two separate banks of which the one had a transfer business of the same amount and the other a note circulation of the same amount. In fact, from the experience so far gained, we can say that a well-organised and well-managed central bank requires for its notes and for foreign moneys together a scarcely larger reserve of cash than it would require for its notes alone. In other words,

[1] *Cf.* the Memorandum, *Die Reichsbank, 1876–1900*, pp. 67 and 68.

the combination of note-issuing with transfer business has made it possible to increase the exploitation of the cash reserves lying in the Reichsbank, and required for the purposes of cover for the notes alone, by nearly the total of the transfer business which, in the year 1913, amounted for the Reichsbank to 287 milliard marks.[1]

There is no doubt that for the above reasons the cheque and clearing business reduces the total amount of cash reserve, which must be held for the purpose of effecting any given volume of settlements in any given time. At the same time, these arrangements increase the "visible reserve," because the money concentrated in the banks becomes a matter of common knowledge through the reports of the banks, whereas this is not the case with the cash reserves of individual households and concerns. Again, these visible reserves of money are permanently at rest and are subject to relatively small changes as compared with the changes in the reserves of cash of ordinary households and concerns, which are alternately exhausted and made up again at a more or less rapid rate. Whereas the cash reserves of the various households and undertakings are included in the "money in circulation," the visible reserves of the large banks are regarded as being withdrawn from circulation.

Scharling [2] has, in his work on banking policy (*Bankpolitik*, published in 1900), used this difference as a starting-point for far-reaching deductions in the theory of money and the practical course of the value of money in the last few decades. He contrasts "circulating money" with "money capital at rest," which latter phrase he takes to mean those sums of money which the banks must keep in reserve in order to have sufficient money in hand to be able at any time to meet their obligations to clients who have deposited sums of money with them. These reserves form the basis of cheque and clearing transactions. Scharling argues that this difference is derived from a difference in the functions of money. In his opinion, in addition to its function as a general medium of circulation, money also has another function in that it represents disposable capital. The former function is fulfilled by "circulating money," and the latter by "money capital at rest." The inferences drawn by Scharling from this fact in regard to the course taken by the value of money cannot be investigated in detail here, but must be briefly indicated for the sake of completeness and in order to see how far Scharling's

[1] [The "total daily liabilities" of the Reichsbank consist of the Notes and the Current Account (or Transfer) Balances; the "Foreign Moneys" of the Reichsbank are the Current Account Balances and any liabilities to third parties other than those arising from the issue of Notes.

[2] Danish economist and statesman.]

analysis will take us. He asserts that a constant increase in stocks of capital requires a constant increase in money capital at rest, and that for this reason it frequently happens that only a very small part of the new output of gold comes into circulation. Money capital, however, so long as it remains at rest, can have no influence on the commodity market, and accordingly also no influence on the value of the circulating money or on the prices of commodities. Only in so far as the bank notes and State notes issued on the basis of the money capital at rest are increased does the money in circulation undergo any increase.

We have here, in its most extreme form, the view that there exists a demand for money, not only for payments in the widest sense of the term, but also for purposes of reserve. But it is just this extreme form which makes it clearly obvious that the differentiation between money demand for purposes of payments and that for purposes of reserve is invalid. The money reserves of the large banks are at rest only in so far as the turnovers and settlements effected on their basis take place without necessitating a transfer from hand to hand of individual pieces of money. But they are not stocks of money at rest in the sense that they are withdrawn from the performance of the function of money as a medium of transfers. They are at rest in a physical but not in an economic sense. The entire banking business involving cheques and clearings is built up on these money reserves "at rest" and serves the very same economic purposes as does "circulating money." Money is an instrument of economic intercourse irrespective of whether it passes from hand to hand as coin or note, or whether it serves as a basis of methods and arrangements for payments which save actual transfers of cash, except that in the latter case its effectiveness as a medium of transfer is substantially greater, and the same sum of ready money can serve the purpose of a much larger volume of payments when it is used as the basis of cheque and clearing transactions and is at rest in a bank, than when it enters physically into the process of payment.

Thus we have established, in considering the effects of credit on the demand for money, that, firstly, actual money-lending increases the rapidity of circulation of money and diminishes the reserves of money which are at rest, not only physically but also economically, and this by transferring money from places at which it is not for the moment required to places which have immediate employment for it; and secondly, that the arrangements for making payments which are based on credit, such as cheques, bank accounts, and clearings, which save transfers of actual cash, make possible a larger volume of settlements on the basis of a smaller stock of money, which is ready money at rest only in the physical but not in the economic sense. In both cases credit brings about a more

intensive exploitation of money. It makes possible a larger number of transactions with the same stock of money, and thus has a restrictive effect upon the demand for money.

There is a third manner in which credit makes itself felt. This consists in instruments of credit, of whatever kind, serving as a medium of transfer in the same way as money itself does, and so leading directly to a saving of cash.

Here we must take into account first and foremost bank notes not covered by cash reserve, and also Government paper notes, if we are not to reckon these forms of paper, whose normal purpose is to act as a medium of transfer, as themselves belonging to "money." In any case such paper, which represents money, must be considered in connection with any study of the demand for money, and must be differentiated from metallic money, because the satisfaction of the demand for money by the issue of such paper is effected under quite different conditions to those which attend the satisfaction of the demand by metallic media of circulation, a problem which we shall have to consider in greater detail when we come to treat of monetary supply. Moreover, the issue of such paper, in so far as it is not simply a representative in circulation of metallic money accumulated somewhere or other, but exceeds in amount the reserves which are its cover, involves a diminution in the demand for metallic money. In addition to Government paper notes and bank notes, which themselves may be regarded as money, other documents, which imply some kind of claim and the normal purpose of which is not that of a medium of transfers, also occasionally serve as instruments of economic intercourse. In our discussion of the limits of the concept of money, in the first chapter of the theoretical part of this book, we dealt in some detail with those credit instruments which are not money, but which at times usurp the function of money. We enumerated within this category the following different types—cheques, bills of exchange, interest and dividend coupons, postage stamps, etc. It might at first sight appear to be a contradiction to enumerate the cheque in this class, seeing that cheque transactions have already been quoted as representing one of the arrangements for payment which make possible a more intensive exploitation of available ready money. But there is really no such contradiction. In point of fact the function of the cheque is different when, on the one hand, the drawer uses it for payment and the recipient for encashment, whether directly or through the agency of a banker, and when, on the other hand, the cheque is given by the recipient in payment to a third person, who gives it to a fourth, and so on, before it is presented at the bank, on which it is drawn, for encashment. In the former case the cheque is simply an instrument which orders the banker who keeps the account of the drawer to make a pay-

ment, and it is nothing more than the vehicle of banking and as such fulfils its normal function. In the latter case, however, the cheque functions as a medium of circulation, just as do coins and bank notes, and this function is in reality so foreign to the normal purpose for which the cheque is intended that, as has been mentioned above, in those States in which cheque business is most highly developed, a definite period of time—a few days—is prescribed, within which the cheque must be presented for payment at the bank on which it is drawn. In so far, however, as the cheque, in addition to its proper function, fulfils also that of a medium of circulation, its employment in this capacity entails a direct saving of ready money.

The same applies even more to the bill of exchange. In its normal employment as a document establishing a short-term commercial credit, the bill of exchange does not save either ready money or, as in the case of a draft, any transfer of cash. It simply shifts the point of time of the transfer of cash from the present to some specified future date. If the spinner causes his supplier of cotton to draw a three months' bill for his acceptance, and if this bill, without having in the meantime served any purposes of payment, is presented for payment at the end of the three months, it has in this way fulfilled simply its normal function without having saved any transfers of ready money. If, however, the cotton dealer on his part gives the bill to a third person in payment, then the bill functions as a medium of transfers in the place of money just in the same way as the cheque did in the case considered above.

Similar remarks may be made in regard to coupons, postage stamps, etc. All these things can perform their normal functions to the full without serving as money. In so far, however, as they serve the purposes of money, they effect a saving of cash and thereby diminish the demand of the country for actual money. The saving of cash is in this case direct and absolute and contrasts with the indirect and relative saving which results from the employment of credit for the more intensive exploitation of available stocks of money.

We can summarise the various aspects discussed above as follows:—

There is no doubt that Menger is right in regarding the sum total of the money stocks required by the individual households and concerns of a country as a measure of the demand for money in that country. But these stocks which the various individual units must hold are subject to certain general conditions, which thereby become general conditions applicable to the monetary demand. They are:

(1) The volume of payments which must actually be, or

may possibly have to be, made within a definite period of time, and also the distribution of receipts and payments in point of time and in regard to the individual concerns within the country.

(2) The intensity of exploitation of money depending on the development of money-lending and on the development of methods and arrangements for payment built up on money reserves at rest.

(3) The use as media of transfers of credit documents and documents involving claims.

The demand for money based on these factors is satisfied in individual countries in a larger or smaller measure in proportion as the prosperity of the country and the equable distribution of wealth over very large sections of the population makes possible a more generous provisioning, and in proportion as the spirit of commerce enhances the degree of economic exploitation of the media of circulation.

The considerable differences in the money reserves of various countries, particularly in the average quota per head of population—differences which existed even in normal times—may be traced back to these factors. In pre-war days France, for example, had a money reserve which per head of population, as well as in the aggregate, was much greater than that of most other important countries, and especially than that of Germany and England. Although France was commercially less flourishing than Germany and England, and her annual turnovers and payments were smaller, this phenomenon can be explained on the following grounds:—

Firstly, the arrangements which conduce to the more intensive exploitation of ready money were not developed in France to the same degree as they were in Germany or England. Thus a far larger amount of ready money was necessary for effecting the same volume of transfers in France. France had, however, a considerable pull, certainly over Germany, in the matter of wealth in relation to its population, and in spite of not equalling England in this respect, the wealth of France was nevertheless distributed over much broader strata of the population and much more evenly than was the case in most other countries. Thus, a much larger portion of the population was in the position amply to cover its demand for cash than was the case elsewhere, and it is a fact that it is the strata of the middle classes which in general require a larger supply of money in relation to their total wealth than do the richer households. Added to this France showed a relatively low state of development of the commercial spirit. The Frenchman does not care as much as, say, the Englishman whether he loses interest on the cash which he carries with him or has locked up in his money-box. This

loss is, to his mind, more than counter-balanced by the convenience of being able at any time to lay his hand on a large supply of ready money.

¶ 3. Fluctuations in the Demand for Money

In establishing the factors which determine the demand for money, we have at the same time arrived at a basis for the investigation of fluctuations in that demand. The variations in this demand over a period of time must be deducible from a study of those same causes which create the differences existing at any given point of time in the demand for money of individual countries.

It we desire to obtain a picture of the fluctuations from time to time in the demand for money within one and the same country, we observe the fact that the movements in the demand are not represented by simple curves which move up or down in large and more or less uniform waves. The large curves of these movements are, in fact, subject to very considerable oscillations.

First and foremost we observe large changes in the demand for money based on, one might say, the secular development of countries, on progress in monetary institutions, increase in population, development of production and of commerce, the raising of the general standard of life, development of money-lending, improved methods and arrangements for payment, and on the general use of substitutes for money. These factors, inherent in the state of a country's general development, partly by reinforcing and partly by counteracting each other, determine the broad outlines of the average demand for money taken over long periods of time.

Within these large movements we observe periodic fluctuations of shorter duration which depend upon the wave-beats of economic life: that is upon the ups and downs of economic circumstances. Even when the general character of a fairly long period is uniform, we still have changes from times of trade boom to times of depression. The enormous development of individual economic areas rendered possible during the last century and continued right up to the outbreak of the War by the reorganisation of the methods of production and transport; the incalculable increases in trade, capital, and production of goods; and the rise in the general standard of well-being have all occurred, not in a steady flow, but in fits and starts. We observe tumultuous forward movement in individual periods; the production of commodities appears insufficient to meet the demand, and prices, both of manufactured goods as well as of important raw materials, show a general increase. This causes business men to expand their

undertakings and to establish new ones. The demand for labour increases, as does the demand for materials, and wages rise in consequence. Transactions on the investment market increase as the favourable returns from undertakings cause the public to invest capital and to speculate in dividend-bearing securities, which are consequently quoted at higher rates. At such times the transactions in goods and securities increase not only in quantity, but the higher prices, higher wages, and dearer stocks and shares cause the same quantity of transfers in commodities and in industrial securities, etc., to require a larger quantity of money. The general movement tends, therefore, to raise the demand for money. As in commerce the bill of exchange is the instrument by means of which various undertakings seek to provide themselves with money by way of short-term credits; the aggregate amount of bills of exchange put into circulation at any time is a fairly reliable indication of such movements of the demand for money. During the period of great expansion which started about the middle of the nineties of the last century, the aggregate amount of bills of exchange placed on the market in Germany rose to a tremendous extent. It amounted in the year 1894 to roughly 14·7 milliard marks, and in 1900 to as much as 23·3 milliard marks. In 1902 it stood at 21·5 milliard marks, in 1907 at 30·7 milliard marks, and reached in the year 1913 the total of 34·4 milliard marks.

Such times certainly conduce not only to an increase in the money value of the transfers to be effected, but at the same time increase the intensity of exploitation of the available supply of money. We must here leave out of account the more or less problematic increase in the rapidity of circulation of the circulating money. We must, however, invite attention to the established fact that, under the pressure of an increased demand for money, the large cash reserves of the country lying in the vaults of the banks are diminished by these institutions placing at the disposal of commerce larger amounts of cash by the discounting of bills of exchange, etc., whilst at the same time the contracted reserves serve as a basis for a larger volume of clearing transactions than takes place in normal times. If we examine more closely the great increase in the credit accounts of the Reichsbank from the time of the creation of the bank to the outbreak of the War, we observe that the increase in these accounts was in the main registered during periods of commercial stagnation, whereas the years of economic boom for the most part corresponded to a standstill or even to a set-back in these accounts. Above all, however, we observe that the average turnover of the accounts in the years of business activity was much higher than during the periods of stagnation of trade. For every mark of the average amount

of private credit in the Reichsbank (including the fluctuating transfers) there was a turnover of 274 marks in the years 1894 and 1895. This turnover increased during the following period of upward movement to 405 marks in the year 1900, and at the same time the average ratio of cover, of metallic money to daily liabilities, fell from about 63 per cent. to about 49·5 per cent. In the year 1913 there was for every mark of the average amount of deposits a turnover of 633 marks, the metallic cover of the daily liabilities being only 51·43 per cent. If we divide the cash reserve held by the Reichsbank to meet all its daily obligations *pro rata* amongst the various kinds of obligations (notes, private accounts, etc.), we find that the clearing business of the bank in the year 1913 was done in such a way that 51·43 pfennigs of the reserve accomplished 633 marks of business, whereas in the years 1894 and 1895 as many as 63 pfennigs effected an annual turnover of only 274 marks. In other words, in the clearing business of the Reichsbank 1 pfennig of the reserve resulted in the years 1894 and 1895 in an annual turnover of 4·35 marks, and in the year 1900 of 8·18 marks. In the following years the intensity of exploitation of the metallic reserve in the Reichsbank increased still further. In the year 1913 every pfennig of the reserve resulted in a clearing business of the bank of 12·30 marks.

The typical fluctuations in the intensity of exploitation of the money reserve, which is the basis of clearing business, show that the demand for ready money need not in times of growing economic development rise quite in proportion to the rise in the transfers to be effected by the use of money.

The upward economic movement leads ultimately, as experience has shown, to over-expansion of undertakings, to over-production, and over-speculation, and results, in the natural course of events, in a reaction which takes the form of a fall in prices and in rates for securities and in a resulting contraction of turnover and of new investments of capital. When this happens the movements in the demand for money take place in the opposite direction—the demand for money falls off and the exploitation of the available money reserves is reduced in intensity.

In addition to fluctuations in the economic world, spread over longer periods, acute phenomena may occur which it is customary to describe as crises; these, when they are of an economic nature, mark, as a rule, the transition from an upward tendency to one of depression. The characteristic of such crises is acute disturbance of confidence. These sudden shocks to confidence affect, in the first place, the condition of credit. Money-lending, which is of such importance to the exploitation of the available reserves of money, undergoes marked contraction.

Individual concerns are no longer certain of being able to obtain by way of credit the ready money which may at any time be necessary for purposes of payment. They are, accordingly, forced to keep much larger stocks of ready cash than in normal times. Money which has been lent is called-in in large amounts in so far as it is represented by money at call, or can be called-in upon notice being given, and this happens even though the creditor may not have any immediate use for his money. In this way large amounts of cash are allowed to lie idle, but the extensive withdrawals of loaned capital cause an unusually swollen demand for media of payment. The effect of the withdrawal of money from bank deposits is to diminish very largely those methods of keeping cash accounts which by means of cheques, transfers, and clearing arrangements, economise ready money. The banking institutions, finding it necessary to restrict the granting of loans, in order to repay the sums demanded of them, themselves enter the money market on a large scale as borrowers. Furthermore, the employment of credit instruments, especially of bills of exchange and of cheques, which in normal times restrict the demand for money by acting as media of transfers, also falls largely into abeyance, as by reason of the general lack of confidence the use of such documents is more difficult than in times of unimpaired business confidence. The contraction of credit, and of the arrangements for payment which are based on credit, accordingly results during these critical periods in an acute and considerable rise in the demand for cash, a rise far exceeding the limits of normal development in the demand for money. All these phenomena were sharply defined at the outbreak of the War.

Just as we have observed periodic fluctuations in the demand for money brought about by changes in the trade cycle within the general economic development, which may affect the demand for money for decades and perhaps centuries, so also is it possible to note certain swings of the pendulum of demand within the upward movements brought about by good trade and within the downward movements caused by trade depression. These swings of the pendulum recur with marked regularity in individual years and may be described as the annual curves of monetary demand. They may be clearly seen from the reports published by the large European central banks, where the demand for money of the country, in so far as it exceeds the amount which happens at the time to be in circulation, tries in the long run to find available supplies by the discounting of bills of exchange, by loans on security, and by withdrawals of deposits. Judged by these standards we find the ends of months, and still more the quarter days and ends of the year, as generally registering an increase in demand. At those dates there is a concentration

of settlement of accounts and of all kinds of liabilities resulting from large- and small-scale transactions. Interest and dividend payments, rents, payments for hire and of salaries, are made mainly at these points of time, and bills of exchange also for the most part fall due on these dates. In short, a considerable part of all payments which fall due within a year is, in accordance with our custom, concentrated at such periods. Before the War, it occurred more than once that in the last week of a quarter or of a year, more than 100 million marks in metallic money was withdrawn from the Reichsbank, which had at the same time to place upon the market four times this amount of extra notes. In the first weeks of the new quarter or year, when the acute demand for money fell off, a normal flow-back of these media of payment into the treasury of the Reichsbank set in.

That the annual curves of demand for money show their maximum points at the ends of months and quarters is not their sole characteristic. It is also a fact that the general level of demand for money within the various seasons changes in a regularly recurring manner. When dealing with the factors which constitute the demand for money, we pointed out the extent to which the payments which fall due in a country are distributed over the year, a distribution which depends upon the periods of sale of goods and of payments in the more important branches of production. In agriculture the main period of business is in the autumn after the harvest; during this period by far the largest part of agricultural products is disposed of, and with the means obtained from the sale of these products agriculture procures for itself the wherewithal for carrying on until the next harvest. But numerous and important branches of industry also have their time of maximum business in the last quarter of the year. Our climate has the effect of increasing the demand for certain things in winter, particularly for clothing and heating requisites, and this tendency is accentuated by the custom of giving Christmas presents, which increases the volume of transactions in the last week of the year, and as dealers and retailers must obtain their supplies in advance, this increases the volume of transactions in the last months of the year. Accordingly, year in and year out, there recurs always the phenomenon that from September onwards the demand for money increases, and that the central banks are faced in the last few months of the year with much greater demands for money than in the other quarters. For these reasons the curve of demand usually shows its maximum at the end of the year. Before the War—that is, before the Treaty of Peace with the reparation payments imposed upon Germany had overshadowed the effect in Germany of all other factors in the monetary system—there generally set in at the

beginning of the calendar year a rapid and strong falling-off in the demand for money, and this took place to such an extent—measured by the position of the Reichsbank—that the demand for money registered its minimum generally as early as the second half of February. From that time onwards, right up to September, no considerable changes occurred apart from the increases at the end of each month and quarter. In September the revival of autumn business began again to swell the demand for money.

CHAPTER VIII

THE SUPPLY OF MONEY

¶ 1. The Production of the Precious Metals and the Supply of Money

So long as metallic money constituted the most important form of money, the production of the precious metals was of primary importance in connection with the supply of money in various countries. The upheavals in monetary policy which took place in the last decades before the War and which deprived silver more and more of its position of equality with gold, also deprived the production of silver to a certain extent of its importance in matters connected with the monetary systems of civilised countries. It is true, as has been shown elsewhere by figures which give the amounts of silver minted from 1870 onwards, that this did not take place completely, but the more the principle of a gold standard, which is not compatible with extensive coinage of silver, received acceptance, the more exclusively did gold come to be regarded as the medium for the satisfaction of the universally increasing monetary demand of civilised countries. England, Germany, the countries of the Latin Union, and other European States increased their circulation from the time of turning away from silver right up to the outbreak of the War, exclusively, or nearly so, by coining gold. The United States of America, which under the Bland and Sherman Acts threw into circulation silver to the value of several hundred million dollars, became, from the year 1893 onwards, when the Sherman Act was repealed, also a territory closed to silver, and the whole of the tremendous increase in the metallic circulation of that country was effected from that time onwards exclusively by an increase in gold money. We must thus regard gold production as the source from which, in the international scheme of currency as it existed in the decades before the outbreak of the War, the circulation of the entire civilised world was mainly fed.

The greater the value of a commodity per unit of weight and of volume, the smaller are its relative transport charges and the less important becomes the place of its production for the economics of the world. In the case of gold, cost of transport, even over very long distances, amounts to a fraction, to be measured by thousandth parts of its value. The mobility of gold is thus almost unlimited. Whereas in the case of certain less costly minerals, such as iron or coal, the question of producing them within the country is of enormous importance to the entire economic development of that country; because these important materials are made much more expensive by transport, it is almost wholly immaterial for the provisioning of any country

with money whether or not precious metals are produced within its borders. The European countries, such as England, France, and Germany, which either do not produce gold at all or produce it in only very small quantities, have participated very largely in the gold output of the United States of America, Australia, South Africa, and Russia. At the same time Russia, to take but one example, notwithstanding her considerable production of gold, was not able for many decades to forsake her paper currency and to re-establish a circulation of metal. Similarly the United States of America had in the sixties and seventies of the last century, when they were already far and away ahead of all other countries in the production of gold, a paper currency, and even in the years 1893 and 1894 their currency was seriously threatened, notwithstanding an annual production of gold of several hundred million marks, by a considerable and continuous drainage of gold caused by the coinage of silver and the purchases of that metal.

As the precious metals have such a large degree of mobility, the relation between the general world production of gold or silver and of the general world demand for one or other of these metals can be determined only in general outlines. The question of how supplies available through the production of precious metals become distributed among the several countries is a question by itself, and will be dealt with later.

If the world's demand for metallic money and the world's production of money metal are compared, the first question which arises is whether and how far changes in the demand for money and in the production of the precious metals correspond. A cursory glance at the history of the developments in the production of the precious metals suffices to show that no such correspondence exists. Movements in the demand for money depend upon quite different factors to those causing changes in the production of the precious metals, which, moreover, by the very nature of their occurrence, belong to that class of commodities, the extent of the production of which is almost completely independent of the effects of changes in the demand for them. When rich deposits of gold are discovered, it is of no importance for their exploitation, and accordingly for the output of gold, whether the money demand of the world rises or falls. At times when the known sources of output become exhausted, the diminution in the production of the precious metals is unaffected by the question of whether the demand for money in the world is growing at the same time or not. However, the non-dependence of the production of the money metals upon changes in the demand for money is not absolute. Even without going more closely into the details of the theory of the value of money, we can assume that

a rising money demand with simultaneously stationary or falling production of money metal affords suitable conditions for an increase in the value of the money metal in relation to that of other commodities, and for the working of such sources of the supply of the metal as had been given up as unprofitable to be again to some extent rendered profitable. The contrary is the case when the demand diminishes, whilst the production of the metal remains the same or increases. It is obvious, however, that we are here dealing with effects (as compared with the large divergencies in demand and production) which are quite limited and by which the independence of movement in the production of the precious metals and in the demand for money are unaffected. This fact is of considerable importance when considering the theories of the value of money.

¶ 2. The International Distribution of the Precious Metals

Turning now from the problem of the world supply of money to that of the satisfaction of the demand of individual countries for it, we must establish the fact that the provisioning of various countries with metallic money does not by any means exclusively imply a participation by them in freshly produced supplies of money metal. It often happens that reserves of metallic money which have accumulated over a long period of years in one country serve the purpose of helping to satisfy the demand for it of another country. Gold produced centuries earlier and circulating as coin is just as mobile as gold which is freshly minted, and the metallic circulation of a country is by no means withdrawn from the general metallic supplies of the world and entirely allocated to the purposes of that particular country. Numerous examples exist of mobility in the metallic circulation of individual countries. When, as a result of the Civil War, the United States began in the sixties to use a paper currency, they gave up to Europe not only a large proportion of their new output of gold, but also a considerable share of their already available gold supplies. At the beginning of the seventies Germany introduced a gold standard and procured by means of the French indemnity payments the enormous quantities of gold which were necessary for the first issue of the gold coins of the Reich, afterwards drawing largely upon the gold reserves of France, England, and the United States of America. Similar remarks apply to the gold procured in the nineties by Russia, Austria, and Japan for the purpose of introducing the gold standard, while with the aid of a considerable import of gold in the second half of the nineties, the United States of America

were successful in improving the state of their currency on the gold standard basis. But the largest disturbances ever known in the monetary stocks of the precious metals of individual countries occurred during the War and in the years that followed. It was shown in the historical part of this book (see p. 233 *et seq.*) that the European belligerent countries had to give up a very large part of their monetary reserves of gold, and the neutrals, the United States of America, and Japan registered an influx of gold to an extent many times exceeding the fresh output of gold during the period.

Thus for providing the various countries with money, it is not only the extent to which they can secure for themselves a share of the annual new production of money metal that is of importance, but also how far they can control the metallic money available and how far they can draw upon the stocks of metallic money of other countries. In addition to the world production of the precious metals, the so-called international movements of them are of importance in determining the supplies of the various countries.

This brings us to the question of the factors on which the participation of a country in the international movement of the precious metals depends.

This problem dominated the theories of political economy in the early stages of the science. In the year 1613 the Italian, Serra, writing in a manner characteristic of the theory then current, adopted the following question as the title of his essay: "How can a country which possesses no mines procure wealth of gold and silver?" This point, in view of the failure to differentiate between money and wealth, appeared perforce as the kernel of all economic theory. Men thought they had answered the question by making the import and export of precious metals dependent upon the course of international trade balances. It was assumed that a precious metal enters a country as an equivalent in value for the exported goods, and that it leaves the country as an equivalent in value of imported goods. Accordingly, it was thought that imports of precious metal must take place as soon as the exports of goods exceeded imports. In the former case the balance of trade was accordingly regarded as "favourable," and in the latter case as "unfavourable," such designations being retained to this day side by side with the colourless terms "active" and "passive" balances of trade.

It has been shown above (p. 422 *et seq.*) that the balance of trade is but a part of the "balance of international indebtedness." In the course of the movements of the precious metals from country to country, as well as in the determination of international rates of exchange, it is not the trade balance as such which must be

taken into account, but only the balance of international indebtedness as a whole.

Even this balance of international indebtedness is not necessarily the sole determining factor in the course of the international movements of precious metals. To payments arising out of obligations of all kinds, the voluntary transfers of money capital from country to country must be added as a factor substantially influencing the movement of the precious metals.

In this connection we can differentiate between short-term capital transfers and long-term capital investments. Transfers of the former type take place particularly for the purpose of exploiting differences in the rates of interest in the several countries. International money capital which seeks short-term investment turns preferably towards those countries which show at the time the highest rates of interest.

In contrast to the short-term transfers which are continually in a state of flux, we have large transfers of capital which take place only once, as, for example, international loan operations or undertakings on a large scale which are carried out in a country with the aid of foreign capital (*e.g.* railway construction in such overseas areas as do not dispose of a sufficient accumulation of capital). Displacements in the ownership of international securities and such unilateral transfers as the payments of war indemnities belong to this class.

All those factors which influence the international movement of the precious metals can be derived from the functions of money as a medium of exchange (balance of trade), as a medium of payment (payments of interest, etc.), as a medium of capital transactions (international loan operations), and as a medium of transport of value (travel and migration).

¶ 3. The Effects of the National Demands for Money on the International Movement of the Precious Metals

After determining the causes which underlie the international movement of the precious metals, the further question arises—just as it did before in connection with the production of the precious metals—as to whether the demand for money has any decisive influence. The old mercantile conception, according to which international disturbances in the ownership of the precious metals appear to be dominated solely by the balance of trade, altogether excluded the demand for money from the exercise of any influence. Whilst the sending of all other goods from country to country is regarded as being obviously conditioned by demand for such goods, it is assumed that the precious metals, because they are the basic material of the money serving for payment for these

other goods, are the only goods sent from country to country, not in response to any demand for them as such, but because of an entirely external factor, namely, the import and export of other goods—that is, fundamentally, because of the demand for those other goods. Because Germany has a demand for wheat which is not covered by its own production, and not because America requires gold, is it assumed that gold flows from Germany to America.

This relation is not altered in principle when the wider conception of the balance of international indebtedness is substituted for the balance of trade as the motive factor. All claims and liabilities which arise from the state of reciprocal credits between the various countries, or from the working of undertakings abroad, or, in short, from the operation of international agency business of all kinds, are also determining factors in the international movements of the precious metals, which factors have nothing to do with the demand for money of the various countries *per se*.

On the other hand, it is clear that the demand for money has a direct bearing in the case of those modifications which are made in the movement of the precious metals by international money-lending. Just as the demand for goods finds its expression in the level of prices, and by its effect on price influences the transport of goods, so also does the demand for capital find its expression in the level of rate of interest and thereby influences international movements of capital. But we must, of course, avoid any assumption that the demand for capital and the demand for money are synonymous, and we must beware against assuming that large international transfers of capital, such as those caused by the poorer countries raising capital in countries which are rich in capital, take place exclusively, or even in part, in terms of money. If, for example, a State such as India raises a loan in England for the purpose of building railways, it will receive a large proportion of this loan not in actual precious metals or money, but in the form of railway lines and other materials—that is, in the form of those goods representing capital which are really required, and for the procuring of which the money provided by the loan is simply the means. Of course, the demand which leads to the raising of loans in foreign countries can also be directed towards capital in money form. Such, for example, was the case—and it is here seen in its clearest form—with the large loans which were raised in the course of the last three decades of the nineteenth century by Italy, Austria-Hungary, Russia, and other countries, for the purpose of replacing the existing paper currency by a metallic one.

In the case of foreign loans raised by States, cause and purpose are in the majority of cases clear; in the case of international

capital transactions, on the other hand, which result from the requirements of capital by the individual concerns within every country, the cause and purpose are not so clear, as it is more difficult to make a survey of these transactions. The same remarks apply, however, in both cases. The demand for capital of each undertaking is directed, just as is the demand for capital of the State itself, towards specific forms of capital of which money is but one of many thousands. In so far as the total of this capital demand cannot be covered within the country, and assistance is sought from foreign countries, the forms in which the credited values will be imported must depend entirely on which particular forms of the capital required cannot be supplied by available means in the country itself.

The demand for capital met by way of long-term credits is directed only in exceptional cases towards money. The taking up of short credits, however, is the method by which both the financial administration of the State and that of other corporations, as well as private undertakings and other individual economic units, try to procure for themselves means of payment temporarily required. In this sense we differentiate between the capital market as the market for long-term investment, and the money market as the market for short-term credit. The rates of interest of the individual national money markets depend to a large extent upon the level of the demand for money. As the level of the rates of interest for short-term credit in individual countries exercises, in so far as these countries have a metallic currency with free coinage of the standard metal, a far-reaching influence on the movements of the precious metals, this is a case in which the demand for money of individual countries does have an influence upon international movements of the precious metals.

Money-lending can thus, in fact, neutralise the effect on the transport of money and of bullion, which is exercised by international liabilities to pay, resulting from the trade in commodities and from other causes, just as an economic individual can procure for himself the requisite ready money not only by selling commodities and calling in claims, but also by raising credits.

But as in transactions between individuals, so also in trade between countries, the transfer of money by way of credit is not unlimited. Loans for a long period are only made if there is certainty of repayment. The magnitude or extent of the demand is not the only decisive factor. Confidence in the debtor and his capacity for performance are equally important. A continued deficit in the balance of international indebtedness of a country cannot, therefore, be liquidated by international loans, because, in the long run, the possibility of repayment of the loans taken up by the international money markets and with it the basis for

the compensatory working operations of the international credit system would disappear.

One thing is at all events certain, namely, that any balance of international indebtedness which would not, in its effects on the international movement of the precious metals, satisfy the demand for money of a country, can be reinforced, at least temporarily, by credit operations which thus influence the movement of bullion by influencing the demand for money of individual countries.

A further question remains to be answered, whether, in fact, the demand for money of individual countries can operate on the movements of precious metals only through the agency of international credit, and whether, in fact, the demand for money exercises *no* influence on those other factors which can influence the movement of the precious metals.

The original theory, according to which the inflow and outflow of the precious metals was merely the necessary and obvious consequence of the state of the balance of trade, was already opposed by David Hume, who held that the transmission of money from country to country is ultimately determined by differences in the demand for money, just as is the case with the transport of other commodities. When a country has an unfavourable balance of trade, and must accordingly render up considerable quantities of money to another country, then, other things being equal, the first country will have a shortage and the second country a surplus of money. This difference in the means of satisfying the demand for money must find its expression in the value of money in terms of other commodities. In the country with the reduced circulation, the value of money in terms of goods will rise, and in the other country it will fall; or, in other words, in the former country the prices of commodities in terms of money must fall, and in the latter country they must rise. This shifting of the level of prices in both countries must reverse the balance of trade between them. Whereas previously the first country imported more than it exported, and for that reason was drained of its money by foreign countries, the import of goods becomes now, in view of the lower prices in the country and the higher prices obtaining abroad, more difficult, and export is encouraged. In brief, the balance of trade, which had heretofore been unfavourable, by reason of the outflow of money which it brought about, the consequent shortage of money and the further effect of these conditions upon prices, automatically becomes again favourable and the export of money is replaced by an import.

This theory, instead of postulating a one-sided relation between the balance of trade and the movements of precious metals, as the Mercantilists had done, sets up a reciprocal relation and

enters into the question of factors which determine changes in the value of money and into the effects of such changes. The basis of this theory will have to be tested more closely below. At the present stage we may content ourselves with the general remark, that on closer examination it must appear absolutely natural that the distribution of the precious metals between the various countries is subject to the same influences as is the distribution of other commodities, and that these influences are the strength of the demand on the one side, and the degree to which means for obtaining supplies (purchasing power) are available on the other. Just as every individual, so also every country, can, on the basis of its total economic strength, satisfy its various needs up to a certain point by always using the available means for the satisfaction of those needs which are the most pressing. No reason is apparent why bullion should stand outside this rule, and why a country, which can cover all its needs up to a point by its own production and by foreign trade, should not also be able to cover its demand for metallic media of circulation up to the same point, or should not be able to preserve a metallic circulation corresponding to its requirements.

Of course, if the general economic position of a country declines, if destruction of its productivity adversely affects the degree to which it can satisfy its needs, then it will not be in a position to cover its requirements for metallic media of circulation to the same extent as heretofore, and in certain circumstances it may not be in a position to cover them at all. The fact that it has always been difficult for countries with disorganised economic and financial conditions to maintain a well-ordered circulation of money does not, therefore, contradict the conception that international movements of the precious metals are also influenced by the demand for them and by the capacity to pay of the individual countries concerned. The same applies to the fact that countries which, owing to political and economic catastrophes, have lost their metallic currency find it in most cases impossible to re-establish a circulation of coins without foreign help (by the grant of loans). It is true, however, that just in this matter of the satisfaction of the demand for money we have to consider a special point. When the cover for the demand is insufficiently met, no commodity can be replaced with greater ease by substitutes than can metallic money. In the place of metallic money we can have paper notes, whereas those commodities which are used for food, clothing, habitation, and other needs cannot be replaced in a manner equally simple, almost free of cost, and by things themselves intrinsically valueless. All disturbances resulting from an insufficient cover for the demand for media of circulation almost irresistibly compel the authorities concerned, whether they be the financial adminis-

tration of the State or a bank which has been given the privilege of issuing notes, to issue more paper money tokens for the purpose of meeting the demand for money. Hence the natural reaction indicated by Hume, which an insufficiently satisfied demand for money has on the balance of trade and on the movement of the precious metals, is partly or wholly negatived. The margin between the demand for money and the circulation, a margin which would of itself tend to influence the international movements of the precious metals, is wiped out by the issue of paper money. The fact that countries finding themselves short of circulating media, and having recourse, as a way out of the difficulty to the issue of paper money, do not attract to themselves metallic money proves, therefore, nothing against the theory that the demand for money, if not met in this way, has the tendency to procure for itself the necessary media by influencing the international movement of the precious metals.

The full analysis of these sequences, which have acquired, by reason of the circumstances arising out of the World War, an importance far greater than they had when the first edition of this book was published, can only be undertaken on the basis of the theory of monetary value, still to be dealt with. At this stage, in order to strengthen the view that money metal tends in general to distribute itself between individual countries according to their demand, which again influences both the rate of interest for short-term credit and the course of foreign trade, we must call attention to an important example provided by a disturbance brought about by external circumstances in the international conditions of circulation, namely, the French War Indemnity and the reaction which it brought in its train.

Only a very small part of the 5 milliard francs was handed over to Germany, as is well known, in actual metallic money.[1] Apart from small quantities paid in German and English gold coins, about 273 million francs—that is, 220 million marks—were paid in French gold coins. German silver coins represented about 24 million marks and French silver coins about 270 million marks. By far the largest part of the media of payment transferred by France consisted of bills of exchange and bank drafts on German towns (totalling about 2400 million marks), bills of exchange on England (for more than 500 million marks), on Holland (for about 200 million marks), and on Belgium (for about 116½ million marks). Of all these, the bills of exchange on England were, in particular, largely used for the purchase of gold on the London bullion market. In the whole, the Government of the Reich obtained during the years 1871 to 1873 French War Indemnity payments of about

[1] *Cf.* with what follows the author's *Reform des deutschen Geldwesens nach der Gründung des Reiches*, vol. ii, p. 236 *et seq.*

1040 million marks in gold, partly in actual gold and partly in remittances not consisting of gold, but for which gold was subsequently procured. Germany received by far the largest part of the milliards in the form of securities and goods. The French banks disposed, through the agency of German banks, of large quantities of Austrian, Italian, and other foreign securities to the German public, which was in a position to take up these securities, as large amounts of German State loans were being repaid. As against these sales the French banks were able to draw heavy amounts of bills of exchange on German towns, and these amounts being placed at the disposal of the French Government as payments for their loans, the French Government passed them on as a medium of payment of the indemnity contributions to the German Government. The extent to which the value of the bills and drafts given in payment by France was represented by goods is shown by the course of the German balance of trade. The excess of imports over exports amounted in the year 1872 to 941,460,000 marks, in the year 1873 to 1,454,245,000 marks, and in the year 1874 to 1,251,579,000 marks. It is worthy of notice that in those years France had an excess of exports instead of the excess of imports which she had had hitherto.

Although only about a quarter of the entire indemnity payments were made in gold, the disturbance in the international conditions of circulation caused by these payments made itself strongly felt. The German reserve of metallic money, because of certain counteracting influences brought into play by the currency reform,[1] did not increase by the full amount of the gold received and procured from the indemnity payments, but nevertheless careful calculations [2] show that it grew from about 1985 million marks at the beginning of the currency reform (middle of 1871) to 2810 million marks towards the middle of the year 1873. This represented an increase within two years of 825 million marks, *i.e.* of more than 40 per cent. of the money reserve available in Germany at the beginning of the reform of the currency, and this increase was largely effected at the expense of the metallic reserve of other European countries, particularly of France, Belgium, and England. This produced a relative surplus of money in Germany and a relative shortage in the foreign countries concerned. The reaction to this displacement manifested itself in that, firstly, after the payment of the milliards had finished, and after a stop had been put to the extraordinary demand for money created by excessive

[1] In particular, the expulsion from circulation of large quantities of foreign coins (Austrian gulden, 5-franc pieces, etc.) militated during the first years of the currency reform against the increase in the stock of gold.

[2] See the author's *Reform des deutschen Geldwesens*, vol. ii, p. 365 *et inf.* and p. 402.

speculation and the crisis of 1873, the rates of interest for short-term credit on the German money market were for a long time lower than they were on any foreign money market; and, secondly, in that, even after the contribution payments had been completed, the German balance of trade continued to register a very considerable excess of imports. The stronger demand for money in foreign countries, in so far as it showed itself in higher rates of interest, made it a profitable business for German lenders to invest money in foreign countries. Moreover, the fact that the demand of Germany for money was covered to a much larger extent than was her demand for other commodities gave an impetus to the exchange of the relatively abundant German money for those foreign products for which a higher demand existed in Germany, and this exchange could take place only so long as in Germany higher prices were paid for the commodities in question than were being paid in foreign countries, *i.e.* so long as the relative surplus of money in Germany kept the value of money in terms of commodities, the demand for which was covered to a lesser degree, lower than in foreign countries.

The reaction caused by the enormous transfer of money to Germany was thus partly the result of credit transactions and partly of payments for imported goods, which created a back-flow of money to foreign countries. This back-flow took place from the middle of the year 1874 onwards, whilst foreign rates of exchange were rising considerably, and it lasted on the whole up to the year 1879. At times it was interrupted by the contraction of the German circulation brought about by the German currency reform. This was particularly the case in the second half of the year 1875, when large amounts of circulating paper were withdrawn, this having been made necessary by the coming into force of the new order relating to note-issuing banks. In the following years the calling-in of silver coins contracted for a time, to a not inconsiderable degree, the extent of the German circulation, and even, in its ultimate effect, resulted in a certain diminution of the German circulation, as, with the fall in the price of silver, the silver coins which had been melted down commanded an amount of gold coins much below the original nominal value of the silver coins.

On the whole, the German metallic reserve, which increased from 1985 million marks in about the middle of the year 1871 to 2810 million marks about the middle of the year 1873, fell off, almost without interruption, during the following years to 2420 million marks towards the middle of the year 1879. Of the 825 million marks by which the German metallic reserve increased in the first two years of the currency reform, as a result of the payment of the five milliards, there remained in the

year 1879 only an increase of 435 million marks, an increase which, distributed over the eight years from 1871 to 1879, no longer looks exceptional.

From this example, which is important of its kind, we see the extent to which and the manner in which the demand for money by individual countries has an influence on the international movements of the precious metals.

No similar reaction has so far taken place to the infinitely more serious disturbances in circulation which the War has brought about. The reason of this is to be sought for in the fact that various national economic bodies, particularly those of the defeated countries, had their productive capacity so tremendously impaired that they have not so far been able to muster the forces necessary for such a reaction, which would have to take the form, in the first place, of an increase in their exports. Moreover, the restrictions placed upon their trade (such as boycott and the withdrawal from them of most-favoured-nation privileges) counteracted such reaction, and, lastly, the burden of reparations, which, in the case of France, were lifted within two years of the conclusion of peace, presses indefinitely upon the defeated countries, and does not permit of a natural economic reaction.

¶ 4. The Industrial Employment of the Precious Metals

Of the total quantity of the precious metals available to a country or becoming available from the new output of such metals, only a part is actually employed for monetary purposes, either by being placed in circulation as coin, or by being used in the form of coins or bullion for covering paper currency, or as the basis of special systems of payments. The remainder, like all other commodities, is used for ordinary economic purposes. It serves as raw material for plate and for articles of jewellery, for purposes of gilding and silvering, and for dentistry. These applications of the precious metals for other than monetary purposes are known collectively as the "industrial uses" of the precious metals.

Theoretically there is little to be said regarding the relation between the monetary and industrial uses of the money metals. We have here the same circumstances as apply in the case of all other commodities which may be considered as useful for a variety of purposes. The intensity of the demand and its effectiveness, as far as the different forms of employment are concerned, determine the relative proportions in which the total available stock is distributed among the various uses. This is shown by the prices which one or other of the elements of the demand is prepared to pay. All supplies of the precious metals which cannot be taken up

by the industrial demand at a price which corresponds to the mint price, minus the costs of minting, find their way naturally to the mints and to the banks, which are always open to accept precious metal.

Just as the need for money of individual countries depends on a number of factors of different kinds, so also does the employment of the precious metals for monetary and ordinary uses. In particular, the wealth of a nation and its even or uneven distribution are of great importance in the matter of the degree to which the precious metals are used for the production of jewellery and plate, and are stored in the form of such jewellery and plate, and this from other standpoints than those of the monetary use of the metals. It is true that, as has already been shown above, great national wealth, in view of the larger turnover, of itself causes a rise in the country's demand for money, and enables that demand to be more fully satisfied. At the same time it results also in an increased demand for the precious metals for articles of luxury. The strength with which this effect is felt differs, however, at least after a certain point. Firstly, all arrangements for payments and all media of credit which restrict the demand for money presuppose a certain degree of wealth and can develop to the fullest extent in the case of the richest countries, whilst the demand for articles of luxury can expand without any such counteracting influences when the state of welfare is on the increase. Secondly, the quite general observation applies here also that, other things being equal, the greater the wealth of a country, the greater is the proportion of the aggregate national income which can be used for the satisfaction of less pressing wants: and there can be no doubt that the industrial use of the precious metals serves, as contrasted with the monetary use, for purposes of luxury. A similar observation applies to the question of how the evenness or unevenness of distribution of the national wealth affects the relation between the monetary and industrial uses of the precious metals. The more uneven the distribution of the national wealth, the greater is the wealth accumulated in the hands of a few; and the lower the degree of well-being of the masses of the nation, the greater will be that part of the entire national wealth which is employed for purposes of luxury. We need only visualise the one extreme example of an absolutely even distribution of wealth and income. In such a case the masses would enjoy a somewhat higher standard of living, but no one within the country would be in a position to procure for himself any kind of costly article. The demand for the precious metals for articles of luxury would, therefore, shrink to an extraordinary degree. On the other hand, we have seen—especially in the

case of France before the War—that uniform distribution of wealth tends to increase the stock of the precious metals held in the form of money. The less even is the distribution of wealth within a country, the greater is that part of the national stock of the precious metals which is used for commodity purposes as against the part used for monetary purposes.

The line of demarcation between the monetary and non-monetary stocks of precious metals in a country is by no means fixed. Having regard to the costliness of these metals, the form into which they are wrought has a relatively small effect on their value. Consequently, the precious metals can be transferred from one use to another just as easily as they can be moved from country to country because of their relatively low cost of transport. Coined metal, in particular, is melted down in large quantities and used as material for jewellery, etc., as the value of the "fashion" of large quantities of coins produced by mass production is absolutely negligible as compared with their intrinsic value. For example, the seigniorage on coins charged by the German mints was only 4·3 pfennigs for a 20-mark piece. The difference between the value of coined and uncoined metal being so very small, especially where only small quantities are concerned, it has always been simpler and cheaper to procure the necessary gold by melting down the coins, obtainable at any moment on the open market, than to import gold bars.

But notwithstanding the higher value which attaches to the form of jewellery and plate, the melting down of such articles and the use of the resulting metal for coins is also by no means unusual. This is a common experience, particularly in times of acute increase in the demand for money, such as during war and in political crises. Large quantities of ornaments and plate are then melted down for coinage. During the Great War, in Germany, as well as in other countries, the appeal to the patriotic spirit of the public resulted in vast quantities of gold ornaments being delivered up to the mints and to the central banks in exchange for a moderate payment.

All these remarks apply simply to precious metals which are freely coined. In the case of these the forces of trade, operating on their own account, can determine the degree of employment of the metals for monetary and industrial purposes respectively. Such remarks do not, however, apply where the coinage of one or other of the metals is restricted and depends upon the arbitrary will of the Government, or is even wholly suspended. If coinage is restricted, it is the authority of the State which really determines the amount of the metal which should be used for monetary purposes, and the remaining quantity of the metal is left for ordinary uses and must find its outlet there. If it is the standard

metal whose coinage is restricted or suspended, an increase in the demand for money, which in the case of a free coinage would attract metal to monetary uses and would thus tend to raise the aggregate of the metal used for monetary purposes, shows itself in another direction, namely, in a rise in the value of the money struck from that metal over and above the value of the uncoined metal.

¶ 5. Statistics of the Industrial Consumption of the Precious Metals

The problem of collating statistically the industrial and the monetary consumption of the precious metals is more difficult than the problem of determining the production of the precious metals and of their international movements.

It is difficult to estimate how much gold and silver is annually used for industrial purposes in individual countries owing to the number of activities to be considered in this connection. The most exact figures in regard to the industrial uses of precious metals have been collected for some years past in the United States of America, where the Director of the Mint applied for the necessary information direct to the managers of industrial concerns which worked up precious metals. An investigation by the same method was undertaken in Germany in the years 1896 and 1897. In pursuing this investigation there is the difficulty that some of the firms approached either do not reply at all or else give inaccurate information. Assume, however, that a rough figure has been obtained for the total annual consumption of the precious metals; other questions then arise, namely, what proportion of the worked-up metal is due to freshly produced and what proportion to old material, how much has been withdrawn from the circulation of the country itself, and how much was obtained from the melting down of foreign coins. The latter questions, as to the extent and origin of the precious metals sold to industrialists, can be answered, at least approximately, by data supplied by the mints, official assaying offices, refineries, etc. Statistics so obtained have, since the year 1889, formed the basis of the reports of the Director of the American Mint on the industrial consumption of the precious metals in the United States (data obtained from the mint in Philadelphia, the United States Assay Office in New York, and from private refineries). This method of procedure, however, does not show the quantities of coins melted down by goldsmiths, and by other manufacturers who use the precious metals and who, accordingly, transfer these from monetary to industrial uses. The Director of the American Mint makes a more or less arbitrary estimate of these amounts. The German inquiries of 1896, 1897, and 1908 used both the returns of refineries

concerning the volume and the origin of material sold to manufacturers, and also information obtained through questionnaires sent to individual industrialists. At a later date the Director of the American Mint tried to supplement his reports by again directing inquiries of a similar nature to the individual industrialists. But there are practically no data for determining the origin of the material worked up in industry, etc., in the reports relating to gold and silver articles stamped by assay offices, such as existed in France and Austria-Hungary before the War.

These remarks show the caution with which even the most thorough estimates, based on the most careful investigations, must be treated. In the case of all such estimates we are dealing, at best, with approximate values with an appreciable margin of error.

Soetbeer gave the following table in 1886 [1] concerning the industrial consumption of gold and silver in the most important European countries:—

Country.	Gold.			Silver.		
	Gross Consumption. Kg.	Deduction for Old Material. Per cent.	Nett Consumption. Kg.	Gross Consumption. Kg.	Deduction for Old Material. Per cent.	Nett Consumption. Kg.
United States	21,700	10	19,500	135,000	15	115,000
Great Britain	20,000	15	17,000	90,000	20	72,000
France	21,000	20	16,800	100,000	25	75,000
Germany	15,000	20	12,000	110,000	25	82,000
Switzerland	15,000	30	10,500	32,000	25	24,000
Netherlands and Belgium	3,200	10	2,900	30,000	20	24,000
Austria-Hungary	2,800	15	2,400	40,000	20	32,000
Italy	6,000	25	4,500	25,000	25	19,000
Russia	3,000	20	2,400	40,000	20	32,000
Other civilised countries	2,300	15	2,000	50,000	20	40,000
Total	110,000	..	90,000	652,000	..	515,000

The report of the American Mint for the year 1912 on the industrial consumption (after deducting old material) of gold and silver in the several civilised countries gives the following figures:—

[1] *Materialien usw.*, p. 38.

Country.	Gold. Value in Dollars.	Silver. Fine Ounces.
United States	35,800,000	20,000,000
Germany	20,000,000	10,000,000
Great Britain	18,000,000	10,000,000
France	17,500,000	9,000,000
Switzerland	8,000,000	2,000,000
Austria-Hungary	5,000,000	2,000,000
Russia (including Finland)	5,000,000	4,000,000
Italy	3,500,000	1,500,000
Belgium and Netherlands	3,000,000	5,000,000
Denmark, Norway, and Sweden	1,000,000	600,000
Spain and Portugal	1,800,000	1,000,000
Australia and New Zealand	2,000,000	900,000
Canada	2,500,000	900,000
Other European and American countries	1,000,000	1,000,000
Total	124,100,000	67,900,000
Egypt and Asia	50,000,000	28,841,771
Aggregate total	174,100,000 [1]	96,700,000 [2]

The annual industrial consumption of gold in all civilised countries would, according to the above figures of the Director of the American Mint, appear to represent a total value of about 730 million marks. Even as recently as the year 1900, Lexis estimated that the industrial consumption of gold of the whole world (including India and the other Asiatic countries) amounted in the year 1897 to 250 million marks. In the report of the American Mint it was also estimated that in the year 1897 the amount was still much below what it was in the year 1907, namely, 59 million dollars—that is, about 248 million marks—a figure which more or less corresponds with the estimate of Lexis. Taking the estimate of the Director of the American Mint for 1912 as being more or less correct, the yearly consumption of gold in industry, etc., just before the outbreak of the War, is seen to have amounted to 37 or 38 per cent. of the annual output, 62 to 63 per cent. of that output remaining available for monetary purposes. However

[1] Including about $20,000,000 of melted gold coins. The net consumption of uncoined gold would thus be $154,000,000.

[2] Approximate.

this may be, it is clear that the increase in the production of gold far outdistanced proportionally, as well as in total amounts, the contemporary rise in the industrial consumption of gold in the course of the last decades before the War. When Soetbeer estimated the annual industrial consumption of gold at 250 million marks for the middle of the eighties, he calculated the gold output over the same period as only about 435 million marks. If we follow Lexis and assume that Soetbeer's estimate of the industrial consumption is too high, and if we reduce that estimate by about one-quarter, even then the industrial consumption of gold in those days would be nearly equal to the monetary consumption.

For Germany, in particular, the inquiry conducted in 1896 and 1897 showed an annual industrial consumption of gold of about 16,000 kg. to the value of 45 million marks. This total contained about 5300 kg., valued at 15 million marks, produced by refineries from old native material, *i.e.* from old jewellery and plate as well as from industrial waste. Deducting this quantity of gold, we obtain for Germany a net annual consumption of about 10,700 kg. to the value of 30 million marks, figures which have been incorporated in the report of the Director of the American Mint. Of this net consumption 7100 kg., valued at 20 million marks, fell to the share of German gold coins, and 1800 kg., valued at 5 million marks, to foreign gold coins, and the same was the share of gold bars supplied to industrialists by German refineries, and to a small extent also by the Reichsbank. The statistics collected in the year 1908 regarding the industrial consumption of gold in Germany in the years 1906 and 1907 gave substantially higher results. The average yearly consumption by industry amounted to 31,400 kg., to the value of 87·7 million marks. German gold coins which had been melted down represented no less than 47·5 million marks, and foreign gold coins only 2·5 million marks.

The estimates of the industrial consumption of silver have lost much of their erstwhile importance since silver no longer occupies its position as a standard metal. The industrial use of silver in all civilised countries has, from the time of the suspension of coinage of silver, ceased to be a factor which has any importance in connection with the supply of money. The contraction of the monetary consumption of silver, especially from the year 1893 onwards, coupled with the increase in the production of silver during the last decades could not but increase the consumption of silver in European countries. In the United States, where statistics are most reliable, the industrial consumption of silver in the year 1883 was found to have a mint value of only 5·6 million dollars, in 1900 it had a mint value of

14·8 million dollars, and in 1907 one of nearly 30 million dollars. The returns of the Director of the American Mint for the year 1900 give the consumption of silver for industrial purposes in Europe and America as 1,277,000 kg., a figure more than twice as high as that of the 515,000 kg. calculated by Soetbeer for the middle of the eighties, but still far below the contemporary output, which amounted to more than 5½ million kg. This fact created considerable doubts as to even the approximate accuracy of the estimates which had been put forward. The data collected by the Director of the American Mint for the year 1910 led him to assume for the industrial consumption of silver in Europe and America a figure of 67·9 million ounces, to which was added a further 28·8 million ounces for Egypt and Asia. This makes in all about 96¾ million ounces—that is, about 3·1 million kg.—while the production of silver was nearly 7 million kg. Thus, no satisfactory returns were available for the consumption of about half of the annual silver output.

¶ 6. The Definitive Consumption of the Precious Metals

By being turned into coin or employed for articles of ornament, etc., the precious metals are by no means finally consumed. In fact they accumulate in very large quantities in these multifarious forms, and these stocks can be again converted into bars by being melted down and can at any time be translated from one form into another and turned from one purpose to another. For the problem of the money-supply of the civilised world, it is not only of interest to find out how much of the quantity of gold produced annually becomes available for industrial and for monetary purposes, but also how much precious metal finds its definitive consumption in both these branches of its utility.

The definitive consumption of the precious metals results from the wear of coins in circulation, the wear of jewellery and plate, and from the employment of the metals for purposes in which it is impossible to recover the metal again—above all, for gilding. To this must be added the unavoidable waste in melting and recoinage and the losses caused by careless use, burying, shipwreck, etc.

It is quite impossible to obtain accurate statistics of this ultimate consumption of gold and silver. For the wear of coins, however, certain data are available. In England in the nineties of the last century, when the gold coins struck before the reign of Queen Victoria were called in and melted down, the loss in weight of the sovereign averaged ·3 thousandth parts per annum and of the half-sovereign ·8 thousandth parts. The average annual abrasion of the 20-franc pieces was calculated in France

and Switzerland to be ·2 thousandth parts. Soetbeer states that careful weighings of larger quantities of German double crowns showed that after many years the average annual abrasion was no more than $\frac{1}{7}$th of a thousandth part. Smaller coins are more subject to abrasion than larger ones, as the surface exposed to rubbing is larger in proportion to the metallic content. Similarly, it may be assumed that the abrasion increases in later stages, because the raised edge of a new coin protects from exposure the greater part of its surface. Subject to these considerations, the annual loss of gold due to abrasion can be estimated at about ·4 thousandth parts of the total monetary stock of gold.

Loss by abrasion of silver coins is relatively greater, if only because these pieces, which represent a smaller value, pass more rapidly from hand to hand than do gold coins. For large silver coins, numerous investigations enable us to estimate the average annual abrasion at between ·2 and ·3 thousandth parts. Observations of the abrasion of the silver 5-franc pieces give more or less this figure. The melting down of talers during the German currency reform showed an average yearly abrasion of ·25 thousandth parts in the case of coins dating from 1817 to 1822, ·21 thousandth parts for coins from 1823 to 1856, and ·22 thousandth parts for coins from 1857 to 1871. On the other hand, the abrasion of the $\frac{1}{3}$rd taler pieces was found to be 1·3 thousandth parts per annum. The smaller silver coins showed a still greater loss of weight. The abrasion of the French 1-franc pieces is alleged to have averaged 1·6 thousandth parts per annum.

No reliable data are available for determining the abrasion to which gold and silver metal is liable when in the form of jewellery and plate.

The loss of the precious metals resulting from waste, shipwreck, etc., is clearly unimportant in relation to the total stock as well as in proportion to the yearly output of gold and silver. The same applies to losses in melting. Improved technical methods have reduced the waste from the latter cause, so that, for example, the loss in the melting and coining by the United States mint amounts to only about ·1 of a thousandth part.

On the other hand, a large amount of both metals is put to uses which as a rule make it impossible for the metal to be recovered. This is the case in the production of gold leaf and of rolled gold goods, in galvanic gilding, in photography, etc. In America about $7\frac{1}{2}$ per cent. of the total industrial consumption of gold is in the manufacture of gold leaf alone, and of the industrial consumption of silver about 9 per cent. is absorbed by the production of chemicals for photography. The German inquiry of 1896 and 1897 showed that of the industrial consumption of gold in Germany an amount of about 4800 kg., valued at 13·5 million

marks—that is, about 30 per cent. of the total industrial consumption of gold—fell to the share of so-called "irrecoverable gold."

Lexis estimates that the irrecoverable gold amounts to at least 20 per cent. of the annual industrial consumption of gold. On this estimate we find that, before the War, the total definitive consumption of gold amounted to about 225 million marks per annum. This would be between $\frac{1}{100}$th to $\frac{1}{800}$th of the total stock in those days of gold in the form of coins, articles of ornament, etc.

For silver Lexis' last estimate of definitive consumption was about $\frac{1}{400}$th of the total stock.

¶ 7. The Supply of the Circulation with Paper Money

The question of meeting the demand for money by the issue of paper currency requires special consideration.

The State can exercise greater arbitrary powers in the issue of paper money of all kinds than it can in the issue of metallic currency, which is dependent on the production and movements of the precious metals. Thus it would at first sight appear that this provides the means of systematically adjusting the supply of money to the demand for it.

The money machine can include the following different kinds of paper tokens:—

(1) Paper notes which are issued against a deposit, to the full value of the notes, of coined or uncoined money metal. Such notes are called "certificates." They do not add to a country's total currency circulation, but simply give the public a more convenient in place of a less convenient medium of circulation. Thus, for example, the United States of America had recourse to the issue of certificates when it became apparent that it was inconvenient to throw into circulation as coin the large quantities of silver purchased in accordance with the Silver Acts of 1878 and 1890.

(2) Paper notes which are issued as part of a metallic standard system, without any specific metallic cover, or in amounts considerably in excess of their metallic cover.

(3) Paper notes which are an independent currency, not based on any metal.

In cases under (2) the paper circulation is intended simply to supplement the metallic circulation. The notes are, accordingly, either because of their convertibility or in some other way derived from the metallic currency. The issue can be regulated in accordance with the existing state of the demand for money, not, however, to an unlimited extent, but within limits imposed by the convertibility of the notes. As a rule, the issue of paper notes

takes place through the agency of a bank, by the grant of short-term credits. Cases in which, a metallic standard being in force, paper notes are issued in addition to bank notes by the State itself, without the agency of a bank, are exceptional. In such cases the amounts—as, for example, the Treasury notes of the Reich before the War—were always very small.

The issue of paper currency through banks offers the following advantages: in the first place, the issuing institution finds it necessary, in the interests of its own solvency, to preserve the continued convertibility of its notes and accordingly their incorporation in an unobjectionable manner in the metallic standard system. Secondly, the fluctuations in the demand for money in the country make their influence immediately felt on those issuing banks through demands for credits directed to them. Such an institution finds it necessary, therefore, when the demand for money is rising, to expand its note issue, whereas when the demand for money falls off the notes which had been issued flow back to the bank of their own accord by the closing of the credits granted. Within the limit set by the necessity of preserving equality of value between paper and metallic currency, a limit which is dependent upon the special circumstances of the currency and on the banking organisation of the country, there is thus a certain automatic adjustment of the paper in circulation to the changes in the demand for money. Finally, it must be noted that the issue of paper currency by banks makes it possible for banks of issue, by regulating the rate of interest at which notes are placed at the disposal of the market for short-term credit, to exercise control, within certain limits, upon the extent of the demand for money.

As against paper notes incorporated as part of a metallic standard currency there is the separate paper currency which can be regulated without any restriction on its own account. Here it is immaterial whether the State issues the paper itself or whether it delegates the issue to a bank freed from the liability to convert. Theoretically, it would be possible completely to adapt the issue of a pure and simple paper currency to the fluctuations of the country's economic demand for money and to obviate thereby certain disturbances which may occur in the case of a metallic standard currency through displacements in the equilibrium between money supply and demand. In practice, however, the amounts of paper money issued in the past in paper standard countries were chiefly determined by other considerations than the country's money requirements, except where, as in Russia and Austria-Hungary in the nineties of the last century, it was sought to establish an artificial connection with a metallic basis by regulating the rates of foreign exchange and by adopting thereby the principle, necessary in a metallic standard currency, of

restricting the issue of paper. The very establishment of a paper standard and the multiplication of the circulating paper are, as a rule, brought about not by the impossibility of satisfying the country's economic demand for money with metallic money, but by Treasury requirements caused by exceptional circumstances or by financial mismanagement.

In particular, an increase in the circulation of paper such as occurred during the War in all belligerent and in most neutral countries, and which continued to an unprecedented extent in the defeated countries after the conclusion of peace, is not attributable in the first place to a rise in the countries' demand for currency, but rather to the financial troubles of those countries. The impossibility of balancing their internal budgets by re-establishing equilibrium between revenue and expenditure, together with the burden of reparations, compel those States to procure for themselves the means which they require by discounting Treasury bills at their note-issuing banks, and thus increasing by this process the quantity of paper in circulation independently of the country's economic demand for currency.

In any event, these matters are not as simple as they would appear at first sight. The circumstances of indebtedness created by the War and the Treaties of Peace exercise, particularly in the case of the hardest hit countries, a heavy pressure on the value of their money on the international market, and this necessarily reacts on the purchasing power of the money at home. Prices and wages rise and, independently of the State's demand for money, this makes the expansion of the paper currency an economic necessity. This interesting position of affairs, for which the course of events in Germany in the last few years provides a most important and instructive example, can only be touched upon here. We shall deal with it fully when we examine the relations between the quantitative changes of the circulating currency and the value of money during the War and the years that followed.

CHAPTER IX

THE VALUE OF MONEY

¶ 1. The Essential Character of the Value of Money

In the prefatory note to this section we explained that the examination of the demand for and the supply of money itself leads to a study of what is the "value of money," a value which, like that of all other goods, is affected by the magnitude and the nature of the requirements and by the stocks available to meet these requirements. When, however, we come to study this problem, we find our way barred by a question which was present to the minds of the earliest serious students of the nature of money. The question is: Must money have a "value" by its very nature? Does it stand on an equality with all economic goods in so far as the quality of value is concerned? Is it itself an economic good, *i.e.* "a commodity"? Or can money as such be without the property of value? Is it, as compared with economic goods, merely a "token" and a "symbol"? [1]

[1] A discussion of these problems will be sought in vain in Knapp's work. The omission is the necessary consequence of Knapp's study of the subject purely from the legal point of view. We have already had occasion to remark that this method excludes economic aspects, which are just as important and essential to a complete understanding of the money machine as are the legal aspects. This is most clearly brought out in the problem of value which is, in its nature, an economic problem. Knapp knows money only as a "creation of law," *i.e.* as a medium for the settlement of debts which is regulated by legal rules. Consequently, he knows only a historically defined "validity" of money and not an economically determined "value."

Knapp even goes so far as to deny the very existence of the problem of monetary value, arguing as follows: In order to make clear the idea of value we must each time quote a commodity with which to compare it. "If the commodity of comparison is not expressly mentioned, then in speaking of the value of a thing we mean the 'ltrical value,'—that is, the value obtained by comparison with what has come to be the general medium of exchange. From this again it follows that we cannot in this sense speak of the value of the medium of exchange itself" (p. 7). In this argument there is still the limitation "in this sense," but that limitation is soon dropped. A few pages later (p. 25) Knapp writes: "Neither ought we, as is well known, apply the conception of value to the media of payment themselves, and, therefore, also not to money, but only to things which are not themselves media of payment, as in speaking of value we always presuppose the existing medium of payment to be an object of comparison."

The mental jump, by which the problem of value in money is here eliminated and to some extent relegated to the sphere of metaphysics, is obvious. We, however, remain absolutely on solid ground and within the sphere of problems to be explained by science if we put the question: What are the factors which condition the usually variable exchange relations between money and other objects of economic intercourse, and in what way do these variations in the exchange relations take place? This and nothing else is the problem of the value of money. And that this problem is no mere phantom of the mind, but a reality, and at times a terrible reality,

The view that money has no value of its own, and need have no such value, was very strongly held, especially at the time of reaction against the Mercantilists, who held emphatically that money represented the embodiment, in quite an especial degree, of value and wealth. Even Locke expressed the view that humanity had agreed upon giving to gold and silver an "imaginary value." He asserted that by universal consent gold and silver were a "common pledge," for which economic individuals were able to receive with certainty things to a value equal to that of the things which they had given in exchange for money. David Hume described money as a mere "representation of labour and commodities," as a token which serves only for the purpose of measuring and estimating the value of labour and commodities. Similar views were expressed by Montesquieu and by a number of more modern writers (such as Oppenheim, Macleod, etc.).

The opposite view was held mainly by the Physiocrats (Turgot), the classical school of English economists, and by their followers in France and Germany, as also by Karl Marx in his *Capital*. Roscher made the following pointed and oft-quoted remark in regard to the contrast of these two views: "The false definitions of money are divisible into two groups: Those which regard it as something more, and those which regard it as something less, than an economic commodity."

Quite recently certain phenomena connected with paper cur-

there can no longer be any doubt in our times, marked as they are by an unexampled revolution in the exchange relations between money and all other objects of economic intercourse.

In the second edition of his book, which appeared in 1917, Knapp added a concluding paragraph "Regarding the value of money and prices." His theory is pregnantly expressed in the following sentences :—

"The State makes it a primary condition that on all occasions on which the question of price arises use should be made of those units of value which are sanctioned by law, and payments should be made in this value-expressing ["Valutarisches"] money. Whatever might be the results of a statistical investigation into prices has not the slightest effect in law. The State has no cognisance of any changes in the 'value of money.' The declaration by the State that certain pieces are current implies that existing debts can be settled with those pieces ; the same applies to new debts, and in the case of these it is assumed that the contracting parties preserve their advantage." The revolution in gold prices which began during the course of the War does, in fact, cause Knapp to make observations regarding the interests affected by this process. "The situation in regard to class interests is a matter of great importance, but it has nothing to do with the constitution of the monetary system as outlined in the State theory of money." "Is it not possible in every monetary system that the relative powers of the economic parties should become disturbed and that far-reaching changes in prices should ensue ? War compels us to revolutionise our normal civic life, and paper money is only a means of carrying out the necessary revolution. Surely it betrays remarkable narrowness of outlook to throw all the blame on paper currency."

rencies and with currencies with restricted coinage have fanned anew the controversy regarding the value of money.

In conformity with the emphasis hitherto placed by most theoretical writers on the function of money as a "measure of value," the question whether money must have a "value of its own" has been treated in the main from the point of view of whether the function of money as a measure of value necessarily involves an intrinsic value of its own or not. Thus Knies writes as follows:—[1]

"The laws of nature necessitate that for measuring, *i.e.* for determining the quantitative relation in terms of some quantitatively determinable object, we can employ only such an object as a measuring instrument or standard of measure as itself possesses to a special degree the quality which is to be measured. The unknown quantity in the object to be measured is then determined by the application to it of the known quantity of the same kind in the instrument of measurement." A distance of length can be determined only by a medium which in itself has length, such as the foot, the pace, the yard rule, etc., and an expanse of surface only by an area, such as a square having the standard area of a square foot or a square yard, etc. It may, of course, happen that the form of the words in which a relation as to magnitude is expressed is in contradiction with the statement made above, but in all such cases a little careful consideration is sufficient to disperse the apparent contradiction. Thus, for example, if we measure a distance in space by a length of time, such as "hours" or "days" of travel, or if we measure time by space, such as the space through which the hands of a watch travel, then in actual fact we measure nothing more than, in the first case, a space length by a space length in paces, of which a definite number of consecutive steps is to be counted as falling within an hour or a day, and, in the second case, we calculate duration of time by the length of time of minutes or hours which the hands of a clock take to pass from one mark on the face of a clock to another. "It has therefore been absolutely established that if and so far as this special quantity of *economic value* which concrete goods contain can be and is to be estimated and measured, that is possible only by means of an object which itself has economic value—that is, which is itself an economic commodity."

This apparently convincing line of argument is based on the assumption of the "measure of value function" of money, which was rejected by us after careful consideration (Book 2, Chap. III, para. 5). It is a fact that money does not, in analogy with measuring instruments, serve the purpose of determining an objectively fixed "quantity of value" contained in goods, but

[1] On page 147 of his work already referred to.

that it is, more strictly speaking, the common denominator for expressing the value of other exchangeable commodities resulting from actual exchange transactions.

Before, however, entering upon a discussion of the conclusions to be drawn from this, we must mention a very ingenious and clever attempt, based on the same assumptions regarding the function of money as a measure of value on which Knies based his arguments, to disprove Knies' conclusions. In his work on the philosophy of money Simmel argues as follows:—[1]

It is certainly correct to say that the quantities of two different objects can be compared only when these are of one and the same quality. Where, therefore, measuring can be performed only by directly equating two quantities, this presupposes that the quantities have the same quality. But in addition to such direct comparison there is still a second kind of measuring which is possible. Where we have to measure a change, a difference, or a relation between any two quantities, it is sufficient that the *proportions* of the measuring substances should be mirrored in those to be measured in order to determine these completely, without the necessary existence between these measuring and measured substances of any kind of constitutional similarity.

In elucidation of his view Simmel points out that the force of wind which breaks a branch of a tree can be compared with the hand that does the same thing only in so far as this force is available qualitatively in both wind and hand. But the force of wind can also be measured by the thickness of the branch which it bent. The bent twig does not in fact express in itself the quantity of energy of the wind in the same sense as that could be expressed by the application of the force of the hand, but the relation between the forces of two gusts of wind, and accordingly the relative strength of each gust, can be measured by the fact that the one has broken a twig which the other has not even succeeded in hurting. Simmel regards the following example as conclusive:—

"The most dissimilar objects known to us, which are as poles asunder and which neither metaphysics nor natural science has succeeded in reducing to a common factor, are the material movements and the phenomena of consciousness. In the pure extensiveness of the one and in the pure intensity of the others it has not so far been possible to discover a point which can in an absolute manner be convincingly regarded as their unit. Nevertheless, the student of psycho-physics can, by changes in external movements which affect our senses by exciting them, measure the relative variation in the intensity of conscious sensations."

If, therefore, a *constant relation* subsists between the quantities of the one factor and those of the other, the magnitudes of

[1] *Philosophie des Geldes*, 2nd ed., p. 101 *et inf.*

the one determine the relative magnitudes of the other without any kind of qualitative relation or equality existing between them. This disproves the logic of the principle that the ability of money to measure value must in effect depend on money having a value of its own.

Without forsaking for the present the ground trodden by Knies and Simmel, let us turn to the arguments in turn directed against these criticisms.

As a matter of fact we have to differentiate between two different types of measurement. In the case of the first, the object to be measured is directly compared with the measuring object, and in such a case it is absolutely necessary that the two objects should be the same in kind. The second type is more complicated. Magnitudes exist, the direct measure of which by similar magnitudes is not possible, because it is impossible to place them directly side by side and to compare them directly with each other. This applies to all abstract magnitudes, to the force of wind and the strength of conscious sensations such as, say, heat and time. In reality only magnitudes which have concrete dimensions are directly comparable. Accordingly we find it necessary in the case of most measurements, *i.e.* in determining the quantitative relation of two qualitatively similar substances or forces, to make use of an intermediate object by means of which we can establish a constant relation between the two magnitudes which are to be compared, but which are not directly measurable on the one hand, and those magnitudes and processes which are directly comparable on the other hand. Thus we measure time by movements in space, and in fact by all kinds of methods, whether by direct observation of changes in the position of the sun or by making use of a sundial, an hour-glass, or a clockwork mechanism which moves a pointer. Thus also we measure heat by the varying expansion in space of a column of mercury exposed to the effects of different quantities of heat, the relation of two masses by the movement in space of the two scales of a balance; and we can further, to use the examples of Simmel, measure the strength of the wind by the thickness of branches which it can break, and the differences in the strength of conscious sensations by variations in external movements.

Clearly, Knies is right in so far as the desired result of a process of measurement in all cases, whether involving direct or indirect comparison, is that a heretofore unknown quantity of an entity of any kind should be expressed in terms of a quantity known, or regarded as known, of an entity similar in kind. Just as in the example given by Knies a quantity of time when measured by means of the watch is expressed in a unit of time during which the hand of the watch passes through a certain distance on the

watch dial, so also, in the examples of Simmel, the force of wind when measured by the thickness of branches is expressed in terms of a definite quantity of energy which is required to bend a branch of given thickness, and the intensity of conscious sensations when measured by movements is expressed in terms of other intensities of sensations which presuppose or release certain definite processes of movement. But having established the fact that the aim and final result of a process of measurement is only to determine a quantitative relation between magnitudes of a similar kind, we have not yet justified a complete rejection of Simmel's contention. The "instrument of measurement" or "standard of measure," of which Knies speaks, must itself possess the quality which it is to measure only when it is a question of measuring by direct comparison. A yard measure must have length, and a measure of capacity must have volume; but processes in space and the relations of magnitudes in space by means of which we measure time "intervals" or "spaces of time," as we significantly call them, quantities of heat, quantities of energy, intensity of sensations, etc., are not of a kind similar to those of the magnitudes to be measured.

The application of these results to money would, to be sure, still leave open the question whether money functions as a measure of value by way of direct comparison and must, therefore, necessarily itself have the quality of value, or whether it is simply an indirect instrument of measure for the purpose of comparing the value of commodities and can accordingly itself be without the quality of value.

Simmel elucidates the latter possibility as follows:—

He assumes that we are given some quite general relation, which he does not further define, between quantity of goods and quantity of money: a relation such as is exemplified by the connection—often obscure and subject to numerous exceptions—between growing supplies of money and rising prices, on the one hand, and growing supplies of goods and falling prices on the other hand. "We form thereupon—without for the present defining things any more closely—the conceptions of a total supply of goods and a total supply of money, and of a mutual interdependence between the two. Every article is then a definite part of that available total quantity of goods. Let us call this latter a. The former is then $\frac{1}{m}\,a$. The price which it commands is the corresponding part of that total quantity of money. If we call this latter b, then the price is $\frac{1}{m}\,b$. If, then, the magnitudes a and b were known to us, and if we also knew how large a part of the saleable values generally a specific object represents, then we should know its money price, and *vice versa*.

Quite independently, therefore, of whether money and that particular object of value are in any way qualitatively equated, and *independently, therefore, of whether the former is itself even a value or not*, we have the result that a definite sum of money can determine or measure the value of the object" (p. 104).[1]

We need not pursue the details upon which this theory is based, nor its consequences. The fundamental error in the whole construction, of which Simmel himself was obviously aware, can be seen from what has already been said. The error consists in the fact that the assumed general relation between the total supply of money and the total supply of commodities is, in so far as such a relation can be admitted at all, not otherwise conceivable than as a relation of value realisable in a possible exchange transaction. It is true that Simmel asserts that his construction by no means involves the circular argument that the ability of any given sum of money to measure the value of a single commodity is based on the equation between all money and all goods, but that this in itself already presupposes the possibility of measuring the one by the other; because the measuring of relative quantities is made possible when their absolute quantities stand to each other in some kind of relation which need not constitute measurement or equality. What kind of relation, apart from an equation of value between the total quantities of goods and money, this may be conceived to be, Simmel does not say. If we measure time by a space relation involving movement, the connection between the spatial standard of measure and the time which is to be measured is given by the fact that movement in its very nature belongs equally to both time and space. If we measure conscious sensations by external movements, we have here—although the logical connection has not yet been explained—an empirically determined relation of cause and effect, just as we have in the other cases in which the force of the wind was measured by the thickness of the branch which it could break, or in which temperature

[1] Simmel's hypothesis is found wanting when considered, for example, from the following point of view to which S. P. Altmann (in his contribution *Zur deutschen Geldlehre des 19 Jahrhunderts* to the *Festgabe* for Prof. Schmoller, 1908) drew attention in a manner which is very much to the point :—

The expression $\frac{1}{m}\,a$ for the value of individual goods presupposes that the value of all goods has been reduced to a common denominator. Only then can there be a comparison between particular goods and the total stock of goods. The common denominator is, however, nothing else than the expression of value in terms of money as seen in commodity prices. The existence of money prices for all goods is, therefore, a condition antecedent to comparison between particular goods and the total stock of goods, whereas Simmel aims at calculating—or at least considers such a calculation to be theoretically possible—the money price of particular goods from the relation between these goods and the total quantity of goods.

was measured by the changes in the length of a column of mercury. But what could be the nature of the connection between the total quantities of money and of goods if we do not assume a relation of value realisable in exchange? Locke himself, though he gave to money merely the position of a subsidiary pledge of fictitious value, nevertheless urged that the value of the total quantity of money must always be equal to the value of the total quantity of goods,[1] and thus he indirectly admitted the necessary existence in the case of money of the quality of value. So long as no other possible connection has been proved to exist between the total supply of money and the total supply of goods than a relation of value which can be realised in exchange, we come to the conclusion, even on the lines of Simmel's argument, that money must possess the quality of value.[2]

Let us, then, drop the hypotheses on which Knies as well as Simmel base their arguments, namely, that goods contain a definite "quantity of exchange value," and that we have in money an actual instrument for measuring this quantity of exchange value. If we return to a more realistic method of studying the qualitative nature of the value of money, we shall find a clearer light thrown upon it than can be cast by any more or less artificial hypotheses and constructions. The "exchange value" or "value in economic intercourse" of an economic object is, as we have seen,[3] merely an abstraction from the fact that economic objects are exchanged for one another in some kind of quantitative relation. To the process which takes place in the mind of the individual in estimating the value of things, we have, as has been shown above, as a counterpart, only one objective fact for the concept of exchange value, namely, the ratio in which economic objects of different kinds are exchanged one for another. From the exchange transaction, and from the quantitative relation between the objects exchanged to which the transaction has given concrete shape, we deduce the abstraction that each of the two objects is endowed with a definite objective quantity of value, which is designated as its exchange value. Such an abstraction is not only a thing of everyday language, but it is also scientifically quite admissible. We must, however, always keep clearly before

[1] See above, p. 446.

[2] Dr August Koppel (*Für und wider Karl Marx*, Karlsruhe, 1905, p. 85) fails to distinguish between "quality of value" and "intrinsic value" ("Wertqualität" from "Substanzwert") if he concludes from the above remarks, taken bodily from the first edition of this work, that I hold that money must have "intrinsic value." Koppel need only have read what is said in the following paragraph concerning the "intrinsic and functional values of money" to have seen that any interpretation of the conception of the "quality of value" is much wider than what is commonly known as "intrinsic value."

[3] *Cf.* above, p. 322 *et inf.*

our minds the fact that we are dealing with an abstraction derived from certain actual assumptions.

Each of the two objects exchanged finds the expression of, or, if we so prefer to call it, the measure of its exchange value in the object given as an equivalent for it, and as soon as all other economic objects come to be exchanged almost exclusively for money, the price in money, and, therefore, money as such, becomes the common measure of all other economic objects. The function of money as a measure of value has thus been logically derived from the function of money as a general medium of exchange, and if exchange value is nothing else than an abstraction from acts of exchange, then we must admit that money—primarily because of its function as a medium of exchange, and therefore indirectly because of its function as a measure of value, which is conditioned by its function as a medium of exchange—can have exchange value just as all other economic objects can, which are exchanged for each other or for money.

But even if we leave out of account the conception of "exchange value" obtained by abstraction, and revert to the original phenomenon of value, our argument still leads us to the conclusion that the possession of value cannot be denied to money. We share the view of Simmel, who, as has already been mentioned above,[1] argues that every definition or determination of value only make known the conditions which give rise to value without, however, creating it, and that all proofs that an object possesses value establish nothing more nor less than the necessity of ascribing the value assumed for one object to another object. If we assume that goods have a value, can there exist any more cogent necessity for assigning such value also to money than the fact that exchanges between money and goods are continually taking place? If value, in all the forms in which it appears, is derived from the judgment or estimate formed by the individual in regard to the importance to him, or to humanity in general, of the objects of the external world, and if the individual decides to give or to receive money for goods in a definite ratio, then this can only mean that money, just like goods, is an object of estimates of value, or, in other words, that it possesses, and must possess, the quality of value in order to be able to fulfil its function as a general medium of exchange.

This line of argument is open to only one objection, already mentioned at the very beginning, namely, that in exchanging goods for money we do not receive a thing as such, but only a claim, a representation, or a symbol for other things, and therefore, that in a transaction in which a commodity is exchanged for money, we really have an exchange of one commodity for another commodity,

[1] Page 318.

obtainable for the money received, whilst the money itself is only an inessential intermediary or agent in the transaction.

This objection is, however, in no way justified by the position occupied by money in our economic scheme of things. If money were not goods, but only a token or a claim for actual goods, then in exchange for it there would perforce be obtainable specific goods in specific quantities from specific sources, because it is not conceivable that there should exist any kind of claim or substitute or symbol without that which is claimed, substituted, or symbolised being definitely determined. It is, in theory, conceivable that an economic mechanism might be brought about in which the position occupied by money as a medium of transfer would be occupied by claims to goods. The idea discussed above, of an "exchange bank,"[1] is based on this principle. But this very principle is regarded, and rightly so, by those who support it as something diametrically opposed to the principle which operates in our economic intercourse. When an individual receives money he obtains nothing which gives him the right of enforcing against anyone else a definite claim for another commodity, and in so far as the money is taken in exchange for other things, it is, as is any commodity which is exchanged for another, subject to a free valuation in terms of those things. The fact that in our economic scheme of things all transferable articles are, in general, actually obtainable in exchange for money is, in so far as concerns goods produced for a market, a difference in degree but not of kind. Just as money is taken mainly in order that other goods should be procured for it, so also are goods in our economic system produced to serve as a means by which the things actually needed by the individual producer can be procured. If we deprive the claim of its content: implying a definite claim on specific persons for specific goods, and if we restrict it to right of acquisition of unspecified commodities in unspecified quantities and from unspecified persons, then not only money, but also every commodity which is put on the market, becomes a claim. From this definition of the concept of a claim, however, two things follow: either we must deny to all goods brought to market the possession of the independent quality of value, or else we must admit that "claims," in the wider sense discussed, can also possess independently the quality of value. If, however, we are not to strain the meaning of words unduly, and if we are not to obliterate the limits of the concepts, we must definitely keep in mind the fact that the contents of a claim can only be such as are *definitely* specified, and that accordingly a claim cannot be exchanged or transferred for the things specified therein on a fluctuating basis; but where in an act of exchange the valuation fluctuates, it is a basic condition

[1] See p. 339.

that the objects exchanged should possess the characteristic of an independent and mutually exclusive value. Money as such is thus not a claim upon any particular objects of value, but is itself an object of value.

This conclusion, however, does not, of course, in any way prejudice the investigation of the special conditions and assumptions upon which the value of money and that of other economic objects rest.

¶ 2. Intrinsic and Functional Values of Money

The fact being established that money by its nature possesses the quality of value, leads us to consider the nature of this value.

The question to be answered here, whether only a "substance which itself has intrinsic value" can be money, or whether money as such can be conceived of as existing without its being based upon a substance of value, has been frequently enough discussed as if it were inseparable from the problems just dealt with, viz. the indispensability of the quality of value to money. As a result of discussing these two questions together, which ought really to be kept apart, writers have sacrificed a good deal in clearness.

The view that the quality of value is an integral property of money by no means stands or falls with the more far-reaching view that money can derive its quality of value only from a "substance which itself is of intrinsic value," or, as has been said, that the value of money must be an *intrinsic value*. Equally, the observation that money may exist without any intrinsically valuable content need not necessarily lead to the conclusion that money can do without the quality of value. In fact, it is possible that quite a different basis than that of the value of its substance can be provided for the value of money.

As against the view, which was so largely held in former times, that money must have "intrinsic value," we have the modern phenomena of "free currencies," *i.e.* paper currencies as well as those with suspended coinage of the original standard metal, and these phenomena have led people more and more to recognise the fact that the value of money can, under certain conditions, be independent of the value of any monetary substance. Both in the historical part of this book, as well as in the section which dealt with monetary systems, we came across systems in which the value of money is not determined by its substance, and is not even derived on the basis of credit or of convertibility from some intrinsically valuable substance, but in which it is based wholly and solely on the fact that the coins and notes declared to be money have been given by law the privilege of fulfilling the monetary functions which are indispensable to the economic life of the country. Even though, in the case of a paper currency, the substance of

which the money is composed is valueless, and furthermore, even though the paper notes carry no right of claim to a substance of intrinsic value, yet the paper money, so long as it is accepted in exchange for all sorts of other economic goods, has none the less a value which is variable in relation to all other values, and which is accordingly independent of all other values. This value, as the paper notes cannot be put to any other economic use, must be based solely on its function as money. If, further, in a silver standard currency with suspended coinage, the value of the money unit is substantially higher than that of the quantity of silver of which it is composed, then the higher value of the coined money can only be due to the fact that this money fulfils functions which in the existing monetary system cannot be fulfilled by the metal in uncoined form.

For these reasons the *functional value* of money has been recognised as being distinct from the *intrinsic value*.

If the phenomena which have been mentioned as existing in the sphere of modern monetary systems actually prove that money can possess a value independent of any intrinsic value, then a theoretical study of the relation between "intrinsic" and "functional" values will show that both types of value, although regarded as essentially different in kind, yet have their roots in the same general conditions upon which every economic value is based, and, in fact, so much so that the apparent opposition between functional value and intrinsic value completely vanishes.

We have already, when discussing the functions of money as a measure of value, used as a starting-point the fact that value is not a property inherent in things themselves, such as are dimension, hardness, colour, etc., but that it is rather something based simply on the relation of man to the external world. The value of things is thus shown neither to be contained in the substance of things, nor to be the result of the mere existence of things. In fact, we have seen that the conditions which govern the economic value of things are the phenomena that, on the one hand, these things are objects of human needs, and that, on the other hand, the satisfaction of those needs meets with obstacles which can be overcome only by labour and sacrifice. Objects of need are by no means only those things which serve directly for the satisfaction of human needs, but they include also all those things which can be employed indirectly for the purpose of producing or procuring consumable goods. Foodstuffs and clothing, articles of ornament and dwelling-places are, in this matter, on an equal footing with tools and machines, with raw materials and auxiliaries serving for the manufacture of directly consumable goods, and also with means of transport, which do not only enter into the process of production but transfer the finished products to the places of consumption.

But money too, which performs the important duty of acting as an agent for the transfer of goods, of utilities, and of services from person to person, belongs to this category. By bringing together, in the process of production, the material means of production and the forces of labour, and by transferring the finished goods from the hands of the producers to those of the users, it serves for the satisfaction of wants exactly in the same way as do all those other kinds of goods which are in the nature of intermediaries or agents. The only difference is that consumption goods, and the actual agents of production and of transport, are in every economic system objects of a need, whereas money simply serves for the purpose of meeting a need which exists only in our particular economic system, based as it is on the free self-determination of individuals, on the private ownership of property, and on division of labour. So long, however, as this economic order of things continues, money must, like all other economic goods, comply with the one condition of economic value, which requires that it should be an object of human needs. At the same time all other goods share with money the property that they possess value not by the fact of their mere existence, nor by virtue of their mere substance, but only because, by performing certain economic "functions," they serve directly or indirectly for the satisfaction of human needs. In fact, the precious metals themselves, as soon as they are employed as money, derive their value just as much from their function as money as from their usefulness as raw material for jewellery and plate. Strictly speaking, therefore, every economic value is a "functional value," and there does not exist any such thing as "intrinsic value." [1]

The second condition of economic value, namely, that labour and sacrifice must be involved in the attainment of the object concerned, is clearly fulfilled in the case of money if the money substance can be produced only at a considerable cost, or if the money substance is, on the one hand, naturally rare, whilst, on the other hand, it is subject to any considerable demand for purposes other than money. This is the case with money made of the precious metals.

If, however, money is manufactured from a substance which, like paper, can be produced almost without cost when compared with the value of the money produced therefrom—is, then, the second condition of economic value also sufficiently met? We must bear in mind that the difficulty of attainment need not lie in the resistance and parsimony of Nature, which places at the disposal of man the means of satisfying his needs at the cost only of labour and sacrifice, and to an extent only which cannot suffice for the complete satisfaction of all his wants. Difficulty of attainment may also be due to the law of the land or to the

[1] *Cf.* also Simmel, p. 151.

usages of society. This is the case, for instance, where a person or a corporation has the monopoly of producing or of owning things which are objects of necessity to others. These others will then be obliged, in order to obtain these things, to offer something in exchange. The natural difficulty of attainment is, therefore, replaced or supplemented by a social difficulty rooted in the organisation of society; a social difficulty which is capable of bestowing a value upon the objects concerned or of increasing their value. In the case of money this is particularly clear. According to our law, the State has the exclusive right of producing or of delegating the right to produce those coins and notes which have the property of money. The individual can obtain money from the State only by giving or by performing some service. The State is thus undoubtedly in the position, even when its natural difficulties in the way of obtaining money (the "costs of production") are negligible, to create, by exploiting its monopoly, an artificial scarcity of the money which it produces, and thus to secure for it the second condition of economic value.

The apparent contradiction in principle between money with intrinsic value and money with merely functional value is, by reason of the above explanations, removed in the following way:—

The value of both the above types of money depends on the two cardinal conditions of all economic value, viz. the ability to satisfy human need and the difficulty of attainment. There remains only the difference in degree in that money which has merely "functional value" can, by its constitution, perform only the duties of money, whilst money with so-called "intrinsic value" can, by reason of the substance of which it is made, serve also for the satisfaction of other requirements.

It is true that one may argue against the above that it is a *petitio principii*, that an object which cannot be used for any other purpose should nevertheless be able to perform the function of money. This objection is in one respect not unjustified, because there is this difference between money and all other economic goods. In the case of the latter the ability to satisfy wants is simply one of the two conditions of value, but it is not a fact that they acquire, as a result of the difficulty involved in their attainment, actual value, which would show itself in their being given and taken in exchange for other valuables. Water quenches thirst quite irrespective of whether, by reason of its scarcity and difficulty of attainment, it represents value or not. Only in the case of money is the position different. Money can clearly fulfil its function as a medium of transfers of value solely on the condition that it is valuable. A money without value, for which therefore no one would give anything, can neither serve as a medium of exchange and measure of value, nor as a medium of capital

transfers; contracts of payment would not be made in such a medium, and it could not be considered as a carrier of value through time and space. If, then, money can be of use only in so far as it possesses the quality of value, then it does not seem feasible that it should derive its quality of value solely from its utility as money. In fact, it would appear that only such things can function as money as already have a value by reason of other utilities.

As was shown in the historical part of this book, the goods which first actually served as media of exchange and payment and as a measure of value were such as also possessed value as useful commodities. It was only after such goods were used as money, and had so altered the economic scheme of things as to render money indispensable, that the value of the things employed as money was based upon their money function. In order, however, that money should be entirely based on such a function, the regulation of the monetary system by the State and the evolution of an obligation to pay became necessary. As has just been explained, it must be taken for granted that no one would accept a thing without value in exchange for a valuable commodity. Moreover, the legislature of a country could not compulsorily impose upon the public as a medium of exchange a commodity which would be rejected as such by the public, and this is equivalent to saying that a thing which is not already of value for other reasons cannot acquire value either from its voluntary or from its compulsory employment as a medium of exchange. On the other hand, the position is different in the case of the function of money as a medium of payment. It is true that no one would be inclined to stipulate for a future payment in a valueless thing. Once, however, the practice has become widespread that contracts of payment should be concluded in money, and once the legislature of the State is in a position to determine the things in which the creditor must accept payment, then the State can bestow the power of legal tender even on things which in themselves are of no other use, and thereby give them a utility capable, in conjunction with the State's monopoly of producing money, of forming an independent basis of value. No one who has to make payments need question whether the thing in which he has legally to make the payment can be used for any other purpose. The function of acting as medium for the fulfilment of an already existing obligation to pay thus becomes a utility which is independent of all other utilities, and so long as the article used simply as a medium of payment can only be obtained by those who are under a liability to pay, by overcoming difficulties, a condition which applies in the case of restricted issue, this is in itself sufficient to give the article a value. As a result of such value, evolved simply from the power of legal tender and from the difficulty of attain-

ment, the thing itself can then serve also as a medium of exchange and can be used for the performance of all the other functions of money. Chronologically, of course, money must have come into existence before contracts of payments in terms of money, and accordingly before a money was evolved which was useful only as money. The evolution of money had, therefore, to begin in the manner already explained, by the employment of economic goods as media of exchange and of payment, etc. As soon, however, as at a later stage of evolution we find obligations to pay expressed in terms of money, as soon as the State reserves to itself the task of making regulations regarding the settlement of money debts and the production of money, we have the logical and practical possibility of creating money whose utility and value depend simply on its function as money.[1]

This possibility naturally exists in a higher degree in proportion as, by the development of credit institutions, obligations to pay increase in number, and the function of money as a medium of settling such obligations gains in importance as compared with the function, which is outside the sphere of influence of legislation, as a medium of voluntary transfer (especially as a medium of exchange), and in proportion as the organisation of the State grows more intricate and influences to an ever-increasing extent the economic relations between individuals. But the possibility indicated is nevertheless not absolute, whatever may be the stage of development of the State and of the country's economic life. The commercial world can, in fact, when the money supplied to it by the State does not correspond to its requirements, deprive the possibility of the requisite conditions. If the State cannot, by a wise management of its monopoly of money production, secure that the trading community should have confidence in the money which it produces from valueless or inferior substances, a confidence which is enjoyed by money of intrinsic value by reason of the value of its substance for other purposes, then, as many historical examples show, the commercial world can, in the case of new debts, agree upon modes of payment which withdraw the debts from the influence of the State, and it can thus create for itself a new money. Examples of this are the return of the commercial world to the use of bars of precious metal in place of coins in times of considerable abuse by the State of its sovereign powers in currency matters, and the use of foreign metallic money in States whose paper currency becomes strongly depreciated. If no fresh

[1] This line of argument coincides with that of Knapp, who (on p. 45) says as follows: "Previously the unit of value had to be defined in terms of real things; debts then in turn evolved in terms of these units of value; now we know debts in terms of the old units of value, and from these debts we define the unit of value—no longer in terms of real things, but historically.'

contracts are entered into in the money of the State, then gradually the sole basis on which money without "intrinsic value" is conceivable must vanish.[1]

A good and recent example of this phenomenon is provided by the most recent developments in the German monetary system. Notwithstanding all counter-measures taken by the State, the public is gradually turning away from the German paper mark, which to all appearances is condemned to unlimited depreciation. Contracts in foreign currencies are obviously gaining ascendency even in the home trade.[2] The State is finding it necessary to make concessions in the matter of foreign moneys. Although the Order dealing with foreign exchanges, dated the 12th October 1922, provided that, in transactions between parties both of whom were domiciled or resided in the country, it was prohibited to demand, offer, agree to give or to accept payment in foreign currencies except in the case of payments for deliveries of goods intended for export, yet the second Order of the 27th October 1922 found it necessary to make many exceptions in the principle laid down by the first Order. Apart from this, we have witnessed attempts to introduce some remarkable innovations. Special mention need only be made of leases requiring payment not in the Imperial mark, but in specific quantities of rye. Moreover, we have instances of mortgages on land secured by "rye bonds," and the issue of "rye mortgage bonds" or "rye drafts" secured by such "rye bonds."

The State Bank of Oldenburg was the first to give this new idea practical shape in the following form:—

It issues "rye bills," which have a currency of four years (1st April 1923 to 1st April 1927). The price of issue is to correspond to the value at the time of issue of 125 kg. of rye. The repayment of capital and of accrued interest is to be effected on the basis of the future value of 150 kg. of rye. This gives a rate of interest in rye value of 20 per cent. for four years, or of 5 per cent. for one year. The amounts which the bank obtains from the sale of such rye bills are used exclusively for granting productive credits to landlords and to communities, and the aggregate amount of the rye bills issued must be covered by letters of lien issued on a similar basis, which must, therefore, also be repaid, both as to capital and interest, in rye values.

A similar innovation has occurred with industrial bonds. At the beginning of the year 1923 the company supplying the province of Baden with electricity[3] issued for public subscription a

[1] This condition, to which the power of the State over the monetary system is subject, is overlooked by Knapp.

[2] [What is said in the text as to conditions in Germany previous to stabilisation is now (August 1926) true of France and Belgium.]

[3] Badische Landes-Elektrizitätsversorgung, A.G. (Badenwerk).

"coal value loan" at 5 per cent. The issue, which met with great success, consisted of bearer bonds to the money value of 10,000, 5000, 2000, 1000, and 500 kg. of coal (Westphalian nuts, grade 4, sifted and washed, as at pit mouth, including tax). The capital and interest to be paid when the bonds are redeemed is, in point of fact, paid in German money, but the amount is calculated on the basis of the average price of the coal during the half-year preceding the payment. Should the Government officially create a "definitive new German currency," every bondholder has the option of having his bond exchanged by the company for one in terms of the new currency on the basis of the price of coal on the day of the coming into force of the currency in question.

The Free State of Saxony issued in January 1923 a "coal and electricity loan" on a similar basis. In March 1923 the city of Breslau announced the issue of a "coal value loan" at 6 per cent. Other local authorities and corporations followed these examples.

Such recent developments do not altogether exclude the State's money, because the issue, as well as the payment of interest and capital, of these rye and coal value loans does not take place actually in rye or coal but in legal tender German money. These bonds, therefore, are still money bonds, but they are no longer expressed in terms of specific sums of German money, and the value which they represent is determined by specified quantities of rye or of coal, as the case may be, at a price expressed in German money.

The numerous proposals and attempts to make contracts of payment of the most varied kinds, particularly as to wages and salaries, no longer in definite, but in variable, sums of money, the amounts of which depend on index numbers, also come to the same thing, and are, in fact, intended to separate the value of money debts from the money in which payment is to take place. This strikes at the root of the nominalist value theory of money as developed in a modern State. Money becomes deprived of its essential characteristic and degenerates into a mere form, a form without definite content which cannot remain permanently in being and must crumble into nothing.

In the autumn of 1922 a new idea was started. It was that the State Treasury should issue exchequer bills in gold marks or in foreign currencies. This idea assumed actual shape in March 1923 in the dollar exchequer bills which were issued by the Reich for the specific purpose of supporting the Reichsbank's policy of bolstering up the mark. This is a simple recognition by the State that German State money, as such, has ceased to be a suitable medium of capital transactions and of storage of value. Should this idea be extended in practice it would amount to the Reich

itself sacrificing the monopoly position of the German paper mark, which was defended even in the most recent Order regarding foreign exchanges, and would introduce side by side with the mark a second currency meeting the elementary economic needs of the country for a currency with value and with the greatest possible stability.

The most recent developments in the monetary system and in the theory of money shed a new light on the problem of value and on the question already put by Aristotle, whether money is "*νόμῳ*" or "*φύσει*," that is, whether it rests on an order of things created by law or by Nature.

¶ 3. Changes in the Quantitative Purchasing Power of Money

We have seen in the previous paragraph that the value of money is subject to the same conditions as apply to all economic values—ability to satisfy wants, and attainment only by sacrifice. Having dealt with the qualitative problem, we now come to the quantitative problem. In common parlance, we now have to discuss the question of how the "purchasing power of money" is determined.

In the treatment of this new problem we must also bear in mind that the theory according to which various goods are endowed with a variable but measurable quantity of exchange value is simply an abstraction from the fact that various economic goods are exchanged for each other in quantitative ratios which are subject to continual changes. Now, no exchange whatever of two economic objects can take place without the quantitative ratios in which the two objects are exchanged one for the other being determined by factors operating on both sides. If an ox is given for eight sheep, then this ratio of exchange can only be the result of considerations and facts which relate both to the ox and to the sheep. The degree of utility and the intensity of the demand based upon it, the greater or lesser difficulty of attainment and accordingly the intensity of supply, all these facts which exist in varying degree in both the objects to be exchanged form the basis of the ratio in which the exchange takes place. It is possible, however, that the variations which take place in the ratio of exchange between any exchangeable objects may be caused by *one* only of the two objects, namely, by the factors which determine the ratio of exchange on the side of that one object changing, while those operating on the side of the other object remain unchanged. This applies to the fact that the value of money is based on the same conditions as is the value of all other economic objects, and it applies to the ratio of exchange between money and

other objects as well as it does to the ratios of exchange of other economic objects amongst themselves.

The problem of the purchasing power of money and of the changes therein comprises therefore two essentially different questions.

(1) The question relating to the ratio of exchange actually existing between money and the other economic objects. As exchanges of money for other objects are designated by the word "purchase," and the equivalent in terms of money in such an exchange is called "price," this aspect of the problem is identical with the amount of and changes in the "general purchasing power of money" and in the "general level of prices." The question is merely one of a *statistical* nature, and its task is to determine the prices (in the widest sense of the word) actually ruling and the changes therein.

(2) The question relating to the factors which determine changes in the ratio of exchange between money and other economic objects. This question is of an *analytical* character. It goes beyond that of determining the actual ratio, and its solution necessitates the determination of the causes of certain facts and phenomena of economic intercourse.

The first question has been described as the problem of the "outer exchange value," and the second as the problem of the "inner exchange value" of money.[1] The latter description of the factors operative on the monetary side, which determine the ratio of exchange between money and other goods, is, as we must ever keep in mind, only possible upon the hypothesis that each of two economic objects which are exchanged for one another in some kind of quantitative ratio contains a definite quantity of exchange value. The factors which, on the side of money, determine the ratio of exchange are regarded as to some extent concretised forms by this quantity of exchange value, which is, however, hardly conceivable as an absolute at all.

For the sake of simplicity there is something to be said in favour of including all the factors which operate on the side of money and which thus determine the ratio between money and other goods in the comprehensive term "inner exchange value of money," or, more simply still, in the designation "value of money." In the earlier editions of this book the author expressed himself in favour of the differentiation recommended by Menger of an "outer" and an "inner exchange value" of money, and the description "outer exchange value of money" was used for the purchasing power of money in the sense defined above, whilst the description "inner exchange value of money," or simply "value of money," was employed in relation to the effects of the factors on

[1] Thus by Menger in his article "Geld" in the *Handwörterbuch der Staatswissenschaften*, 3rd ed., vol. iv, pp. 588–593.

the side of money which determine the "outer exchange value" of money and the changes therein.

The disturbances in the ratios of exchange between money and other goods which the War, the Revolution, and the Peace Treaties have brought in their train have caused the author to examine anew the question of whether this terminology can be retained. The decision appears to depend upon whether the factors which are primarily responsible for changes in the ratios of exchange can be divided with sufficient precision into those which operate on the side of money and those which operate on the side of other economic objects.

This division is not altogether possible.

The last few years have furnished instances in which the determining factors on the side of money and those on the side of other economic objects, not only of goods but also of services of all kinds, are inseparably interwoven with each other and dependent upon each other. We shall give a few important examples of this.

The pressing need for the necessaries of life and for war materials called forth by the War caused abundant offers of money from the belligerent States. These States were able to make these offers by meeting the home demand for money with a large circulation of paper money and by using their existing gold circulation to a large extent for purchases of goods in neutral countries and in the United States of America. Are we, then, to regard the general rise in prices and in wages, which from the beginning of the War occurred throughout the world, as having been caused by the increase in the demand for goods or by more abundant offers of money? In other words, was the cause to be found in factors on the side of the goods or in those on the side of money? We cannot tell, because both processes—the increased demand and the increased offers—are simply two forms of the same basic fact.

The actual state of affairs becomes particularly clear if we study a little more closely the course of events in neutral countries. Here the politico-financial measures taken by the States did not, as they did in the belligerent States, play any important part. The belligerents, governments as well as private individuals, entered the neutral markets with an urgent demand for necessaries of life, raw materials, munitions of war, etc., and offered, in so far as they could not buy on credit, payment in cash, which in the last resource mainly took place by transfers of actual gold. Was the rise in prices which was brought about by these circumstances to be considered as having been caused by the demand for goods or by the supply of new money? The offer of gold—the "gold inflation"—against which, for instance, the Scandinavian States tried to defend themselves by special protective measures

directed against gold,[1] was only one of the most important forms in which the demand for goods made itself felt. Without the very urgent and extensive need of the belligerent States for the products of neutral countries the inflow of gold would not have occurred, and, at the same time, if the belligerent States had not been able to give up gold, a large part of the demand for the products of the neutrals could not, however great might have been the need, have become effective, and could not, therefore, have influenced the level of prices.

Let us take another case. During the period immediately after the Revolution in Germany it was found that the then unlimited power of the working-classes enabled these, whilst producing considerably less, not only to keep wages at their high war level but even to increase them further. This fact must of itself necessarily have conduced to a rise in the prices of commodities and accordingly to a reduction in the purchasing power of money. The tendency set in motion by this was reinforced at times by the depreciation of the German currency, but it continued also at times in which the German currency remained relatively stable or even rose in value. The rise in wages and prices contributed without doubt to inflation through the issue of paper money, if only by increasing all the expenditure of the Reich on goods and services. If the Reich had not been able to issue paper money, the forcing upward of wages and thereby also of prices would assuredly have found a serious obstacle in the impossiblity of procuring the means of payment of wages and of prices. Thus also in this case factors operative on the side of money and on the side of wages and prices are so interwoven that it is impossible to ascribe the decisive influence either to the money or to the goods side of the equation. The one thing which is certain is the simple fact of the alteration in the exchange ratio between German money and all other exchangeable objects. But it is not possible to say in what measure this alteration was brought about by factors operating on the side of money and in what measure by those operating on the side of the other goods, or, in order to express it in Menger's terminology, what share of the change in the "outer exchange value of money" falls to the change in its "inner exchange value," and what share falls to changes in the value of the other economic objects.

In view, therefore, of the lessons taught by the events of the last eight years, it does not appear to be desirable to retain the abstraction that the factors on the side of money which detemine the changes in the exchange ratio express themselves in the "inner exchange value" conceived as an absolute quantity of value. If we are to remain on safe ground we must be content

[1] See above, p. 217.

to recognise that the only real fact is the alteration in the ratio of exchange between money and other goods, and that it is vain to attempt to deduce from the existing ratio of exchange absolute and measurable quantities of value on the one side or the other, and to deduce from variations in such exchange ratios variations in these absolute quantities of value.

As regards terminology, we then obtain the result that the conception of value in its application to the exchange ratio and to changes therein must be retained in its strict relative sense, that the value of money appears only in its purchasing power (the phrase "purchasing power" being taken in its widest sense as covering also utilities and services of all kinds), and that changes in the value of money merely reflect changes in prices, wages, etc.

One is even tempted to draw from this the further conclusion that it is superfluous and perhaps even misleading to employ the phrase "value of money" at all in a quantitative sense, to speak of changes in the value of money, and that it would in fact be sufficient to use only the phrase "purchasing power of money."

This terminology could be adopted if our language—and the languages of all other civilised countries—were to be formed anew; but as things are, the word "value" has established itself so firmly in everyday language in connection with matters such as those which we are considering, that our conceptions would not gain in clearness were we absolutely to eradicate the word from our scientific terminology. The whole world speaks nowadays of the "depreciation in the value" of German money. Should science declare that there is no such thing as a "depreciated value" of money, that there can be only a rise in prices and wages, etc., expressed in terms of money, or only a change in the purchasing power of money? I see but little reason for thus attacking the common usage, especially as those who are in the forefront of the attack on the use of the word "value" in connection with the exchange relations between money and other economic goods raise no objection to our speaking of a "value" arising from exchange relations in regard to objects which do not represent money. But we must always bear in mind that the phrases "depreciation of money" or "rise in the value of money," when used in this sense, give us no information as to the *causes* underlying the changes in the exchange relations implied in those phrases. The analytical problem enunciated under (2) above remains. The question, well worth examining, still remains to be answered as to the causes which can bring about, and have in important cases actually brought about, alterations in the exchange ratios between money and other goods. It might then be found that these causes may be partly on the side of money, partly on that of the other economic

goods, and partly also in complicated and many-sided processes, and that it is not possible to allocate them definitely to money, on the one hand, or to the other goods on the other.

¶ 4. Statistical Aspects of the Value of Money

The statistical problem of the value of money comprises the study of the actual movements in the monetary equivalents of all goods, utilities, and services which can be exchanged and obtained for money.

The problem to be solved cannot, however, be confined to the ascertainment of prices and quotations of building or ground rents, of wages and salaries, and to the evaluation of local differences and periodic changes in those prices, etc. In point of fact, it must build up from a confused medley of innumerable individual cases a comprehensive picture of the purchasing power of money, of its local differences, and of its periodic variations.

But even the preliminary statistical work cannot be completely performed. It is quite impossible to collect and tabulate statistics of all prices paid in any given economic area for movable and immovable goods, of all retail and wholesale prices, of all property and ground rents, wages, state and private salaries, fees for professional services, etc. It is usually only possible to consider characteristic groupings of the phenomena which illustrate the purchasing power of money.

The ascertainment of the *wholesale* prices of the principal staple commodities is relatively simple. Official quotations of prices are continually being issued for specific groups of these.

But even if we confine ourselves in the first place to wholesale prices, it is not possible to obtain a uniform and comprehensive picture of the variations in prices of the selected commodities simply by taking the average of those prices for the different points of time to be compared. If, when the German gold standard currency was operative, a ton of wheat cost 160 marks, a ton of coal 20 marks, a ton of silver 120,000 marks, it is clear that one could not take as the average price of the three articles the figure of 40,060, a price which, in the event of the cost of wheat rising to 200 marks, the price of coal dropping to 10 marks, and of silver to 90,000 marks, would fall to 30,070.

In order to obtain some kind of useful common measure of the movement of wholesale prices, the method of so-called *index numbers* has been used. This method proceeds as follows: Certain articles are selected for the purpose of determining "general price levels." The price of these articles at a definite point of time and at a definite place is called 100, and the relative numbers for prices at subsequent points of time are calculated on this

basis. The average is then taken, not from the actual prices, but from the relative figures for each point of time. The relative figures thus obtained for the various points of time have been called the "index numbers."

In the example quoted above the index numbers for the three articles would work out as follows:—

	Wheat.		Coal.		Silver.		
	Ton Mark.	Relative.	Ton Mark.	Relative.	Ton Mark.	Relative.	Index Number.
1st point of time .	160	100	20	100	120,000	100	100
2nd point of time .	200	125	10	50	90,000	75	83·35

This method was elaborated on broad lines in the year 1865 by Jevons. He worked out the average prices for the six years 1845–1850 for a number of important wholesale articles, and on this basis he calculated the relative figures and their average for the following years. The statistician Newmarch and the editors of the London *Economist* continued and improved this system in the years that followed. The index numbers of the *Economist*, which are issued regularly to this day, are based on the prices of twenty-two articles, and on the averages adopted by Jevons for the years 1845–1850. The index numbers of the English statistician Sauerbeck, published in the *Statist*, are constructed on a similar system, except that forty-five wholesale prices are taken and the average of the years 1867–1877 is set down as 100. In Germany Adolf Soetbeer was the first to introduce comprehensive calculations of wholesale index numbers. At his instigation the Department of Trade Statistics in Hamburg worked out at the beginning of the eighties of the last century "a table of percentages of change in the average prices of 100 articles of commerce during the period from 1851 to 1888 in five-yearly and ten-yearly periods, comparing them with the average prices in the years 1847–1850." This work was subsequently continued, but unfortunately only up to the year 1890.[1]

The results yielded by index numbers depend in these calculations largely upon the choice of the commodities. Thus, for example, the twenty-two articles chosen by the *Economist* include cotton in four of its various stages of manufacture, and also raw

[1] The calculations were published up to 1885 in Soetbeer's *Materialen zur Erläuterung und Beurteilung der wirtschaftlichen Edelmetallverhältnisse und der Währungsfrage*, 2nd ed., Berlin, 1886, and up to 1890 in the *Jahrbücher für Nationalökonomie und Statistik*, 3rd issue, vol. iii.

silk, flax, hemp, and wool once each. Thus the materials which are important to the textile industry appear eight times. At the same time foodstuffs appear only five times. The index numbers must therefore in this case necessarily give a different result to that given, for example, by Sauerbeck's numbers, in which, out of forty-five articles, textiles appear only eight times and foodstuffs nineteen times.

This leads us to the question whether a simple addition of the index numbers of the various commodity prices can give at all useful results when the different degrees of importance of the several commodities are considered. The point was raised and tested in connection with the earliest calculations of index numbers. The *Economist* used to append to its index-number tables a note to the effect that the index number does not correctly express changes in prices, as it leaves out of account the factor of the relative importance of the various commodities. Wheat ranks equally with indigo, and during the years when prices of cotton and cotton manufactures soared this circumstance unduly increased the general index number. The note added, however, that subject to certain reservations the general index number nevertheless yields important conclusions.

Other economists and statisticians have held the view that it is necessary and possible to work out index numbers on a more complicated basis with due regard to the relative importance of the several kinds of commodities. This is done in the following way. The relative numbers calculated for the individual types of commodities are multiplied by coefficients, which correspond to the economic importance of these commodities, and the numbers so obtained are averaged for each point of time ("weighting"). Interesting attempts of this kind were first made by Inglis Palgrave.[1] He took the statistics of the *Economist* as his starting-point, calculated for each of the twenty-two articles the value of their consumption in the United Kingdom, and deduced from this the coefficient of importance of each group of commodities. His example was followed by the American statistician, Roland P. Falkner, in his index numbers built up on the basis of 223 American wholesale prices.[2]

The index numbers which take into account the relative importance of the several commodities are called—in contrast to "simple" index numbers—"weighted" index numbers.

Both systems have continued in use since then. The system of weighted index numbers is theoretically preferable, but in practice

[1] Published in Appendix B to the third report of the "Royal Commission on the Depression of Trade and Industry," London, 1886.

[2] Published under the title, *Wholesale Prices, Wages, and Transportation*, Washington, 1893.

it is found that the difference between the final results which follow from the employment of each of these systems is so remarkably small [1] that it is scarcely worth while to go to the considerable additional trouble involved in working out the weighted numbers, especially as these can only represent approximate values, owing to the impossibility of including all kinds of goods and of exactly evaluating their economic importance.

The War and the disturbances in the various monetary systems which followed in its train have given particular importance to questions of changes in price levels. Previously, movements of index numbers were of interest only to a narrow circle of scientific economists and persons interested in trade and industry. They were regarded as a kind of trade-barometer. Nowadays, however, they directly influence the daily life and earnings of the masses. Accordingly, greater care has been bestowed in all countries on their preparation, and the results have received greater attention. Not only the official statistical departments of the various States, but also local authorities and private concerns—especially technical and trade periodicals—have concerned themselves with the preparation of continuous statistics of prices and with the calculation of index numbers.

Among the German wholesale index numbers we must mention, in addition to those of the Imperial Statistical Office (Statistisches Reichsamt), those of the *Frankfurter Zeitung* and those of the *Industrie und Handelszeitung*.

The *wholesale index numbers of the Imperial Statistical Office* are based on the prices of thirty-eight commodities, divided into seven groups, namely:

Group 1. Rye, wheat, barley, oats, potatoes.
Group 2. Butter, fats, sugar, beef, pig-meat, haddock, codfish.
Group 3. Hops, cocoa, coffee, tea, pepper.
Group 4. Ox-hides, cow-hides, calf-skins, sole-leather, box-calf.
Group 5. Cotton, cotton yarn, cretonnes, linen yarn, raw jute, jute yarn.
Group 6. Lead, copper, zinc, tin, aluminium, pure nickel, petroleum.
Group 7. Pig-iron, coal, brown coal.

These subgroups are collected together into the following main groups:—

Foodstuffs (Groups 1, 2, 3).
Domestic articles (Groups 1, 2, 7).
Imported commodities (Groups 3, 4, 5, 6).

[1] See Irving Fisher, *The Purchasing Power of Money*.

These prices are compared with those ruling in the year 1913 by the average prices of that year being taken as equal to 100, and by the present-day prices being calculated relatively to those pre-war prices. The numbers which are thus obtained for a particular date or period of time for the various commodity prices are added together within the individual groups, and the sum is divided by the number of the prices. The result is the index number for the group. From the seven group indices the index numbers for the three principal groups mentioned above and the aggregate index numbers are calculated, by each group number being first multiplied or weighted by a coefficient corresponding to the economic importance of the group, and the sum of the products thus obtained being then divided by the sum of the coefficients or weights. The weights have been calculated on the basis of the consumption during the years 1908–1912, and they amount to:

For Group 1 . .	30	For Group 5 . .	4
,, ,, 2 . .	10	,, ,, 6 . .	3
,, ,, 3 . .	3	,, ,, 7 . .	15
,, ,, 4 . .	1		

The index numbers of the Imperial Statistical Office are thus weighted numbers.

The index numbers are calculated for three key days in the month, namely, the 5th, 15th, and 25th, and for the averages of the month.

The *Frankfurter Zeitung* bases its number on the prices of ninety-eight commodities, which it divides into five groups. Group 1: Foodstuffs—26 articles. Group 2: Textiles, leather, etc.—13 articles. Group 3: Minerals—18 articles. Group 4: Miscellaneous—18 articles. Group 5: Manufactured articles—23 articles. In contrast to the calculations of the Imperial Statistical Office and to those of the *Industrie und Handelszeitung*, the *Frankfurter Zeitung* includes also manufactured goods (such as motor-cars, bicycles, steam-kettles, typewriters, furniture, bottles, boots, stockings, and string)—that is, articles for which it is very much more difficult to determine exact prices than it is for the actual staple articles of wholesale trade. The point of departure and comparison for the index numbers was at first taken to be the 1st January 1920. In 1922, however, the *Frankfurter Zeitung* found it necessary to work out the prices of the commodities on which its statistics are based retrospectively for the middle of the year 1914, and to use these for calculating the relative and index numbers. The calculation is made every month for a key day chosen at the beginning of the month.

The calculations of the *Industrie und Handelszeitung* are based on the prices of forty-four commodities, as follows:—

Group 1. Coal (6), iron (4), other metals (4), building materials (2), oils (3)—total, 19 commodities.
Group 2. Textiles: cotton (1), wool (1), yarn (1), flax (1)—total, 4 commodities.
Group 3. Hides (1), skins (1), leather (1), rubber (1)—total, 4 commodities.
Group 4. Cereals (4), flour (1), potatoes (2), fertilisers (1)—total, 8 commodities.
Group 5. Meat (3), fish (1), milk (1), sugar (1), fats (3)—total, 9 commodities.

The basis is the last week of the year 1913. Average prices of the various commodities are worked out for each week, and they are recalculated into relative figures on the basis of the average prices ruling in the last week of the year 1913. From these relative figures the arithmetical mean is derived for the calculation of the group and aggregate index numbers.

Although the construction of these three systems varies enormously, the resulting curves of the general index number agree to a very large extent, which proves that the errors compensate each other to a considerable degree.

Although the collection of index numbers of wholesale prices is interesting and important, it does not lead to any theoretically or practically conclusive survey of changes in the purchasing power of money. The actual economic purpose, the satisfaction of human wants, is not a thing for which prices of staple articles of wholesale trade are directly and primarily the most important factors; for this purpose *retail prices* of articles ready for use are incomparably more important. But the difficulties of collecting and working out satisfactory statistics of retail prices are much greater than those concerning wholesale prices, which are based upon standard types. This is the reason why attempts to work out index numbers of retail prices have not yielded results as generally recognised as the results of calculations of wholesale prices.

Furthermore, retail prices (as they are the prices charged to the consumer) do not of themselves give a picture of any theoretical or practical utility. In general, the statistics of retail prices are collected less as a preliminary for the preparation of a retail index number than as a preliminary for the purpose of determining the so-called "cost of living." In this connection, in addition to the necessary expenditure on food and clothing, we must also take into account rents, light and fuel, expenditure on travel and transport, and, to a small extent also, expenditure on intellectual needs. The estimation of prices and of charges for all such expenses is of incomparably greater importance, but also of incomparably greater

difficulty, if only because of the strongly individualistic character of the needs to be met. In fact, it cannot be solved in any way which is quite free from objection. Various attempts to work out the "cost of living" have, therefore, led to very divergent results.

The Imperial Statistical Office works out index numbers for the cost of living on the following basis:—

The groundwork is supplied every month by the official inquiries into prices in seventy-one German cities—large, medium, and small, partly industrial and partly agricultural, distributed over the whole Empire. The statistics are based upon the requirements for four weeks of a family of five on the following lines:—

Foodstuffs

Rye bread	47 kg.
Flour	4 ,,
Miscellaneous (oatmeal, groats, peas and beans, macaroni, etc.)	11 ,,
Potatoes	70 ,,
Vegetables	15 ,,
Meat	3 ,,
Haddock	1·5 ,,
Bacon	1·5 ,,
Fats	4·5 ,,
Salt herrings	1·0 ,,
Dried fruit	3·0 ,,
Sugar	3·5 ,,
Eggs	10 pieces
Milk (full cream)	28·1 kg.
Cheese (of skimmed milk)	1·75 ,,

Fuel

Pit coal	3 cwts.
Or brown coal	5 ,,
,, brown coal briquettes	4 ,,
,, coke	3 ,,
,, peat	6 ,,
,, firewood	6 ,,
,, gas (cooking)	40 cu. metres.

Light

Gas	15 cu. metres
Electricity	5 kw.

Data regarding expenditure on clothing are collected for fifteen typical articles of clothing.

The sum of all these figures, which are collected monthly, gives the *cost of living figures*. The actual *index number of cost of living for the whole Reich* is obtained by taking the average of the index numbers for the seventy-one local areas and relating it to the corresponding figure for the year 1913–14, which is taken as the basis. The calculation of the average is performed by the method of weighting, the "weights" being fixed with regard to the size of the populations of the local areas which supply the information.

Separate index numbers for the Reich are published for foodstuffs, light and fuel, rent and clothing. These are then combined into a general index number of the cost of living, including clothing, and a similar general number, excluding clothing.

In addition to the cost of living figures, which are continually published by the Imperial Statistical Office, other similar statistics are collected. Of these the statistics of Richard Calwer are par-

ticularly well known. He bases his calculations on the weekly expenditure of a family of four persons, which he takes to be three times the peace-time ration of a soldier in the marines. Of the other statistics the following should be mentioned:—

Kuczynski, Director of the Statistical Office of Berlin-Schöneberg, continues to give calculations of the monthly average minimum cost of living for a married couple with two children in Berlin (foodstuffs, rent, fuel and light, clothing, and miscellaneous expenditure).

Silbergleit, Director of the Berlin Statistical Office, takes into account simply the food requirements of an adult. He bases these on a specified number of calories.

Elsas bases his calculations on the requirements of a family of four in Frankfurt a/M., adopts the figures of Calwer for foodstuffs, and adds to these figures the cost of clothing, rent, heating, lighting, and miscellaneous expenditure.

The calculation of the cost of living, in so far as it comprises all the necessaries of life, presupposes that in addition to retail prices of foodstuffs, clothing, and fuel, comprehensive statistics must be collected in regard to *utilities and services*, particularly in regard to *rents*. Here, however, it is not possible to calculate index numbers which would express in one number a complex of phenomena, and all that can be done is to sample and observe typical phenomena.

It is even less possible to embody movements in the prices of *land*, both rural and urban, built upon or not, in index numbers. Here, too, the data necessary for a general estimate must be supplied from the observation of isolated cases, and must depend upon the judgment of the statistician.

On the other hand, there is another sphere of activity to which the method of index numbers has been largely applied—namely, that of stock exchange *securities*.

Of the many calculations made in this sphere we need only mention, as an illustration, the method adopted by the Imperial Statistical Office.

This office calculates separate index numbers for stocks and shares, rates of interest, and foreign exchanges. The numbers are worked out on the basis of the weekly and monthly averages of the daily quotations on the Stock Exchange. The rates of the 31st December 1913 are taken as 100.

The *stocks and shares index number* is worked out from the prices of 300 stocks and shares quoted on the Berlin Stock Exchange. These are divided into thirty-three groups. The method of weighting is applied in the formation of these groups by the number of securities included in each group being adjusted to the total nominal capital invested in the corresponding industry

on the 31st December 1920. The thirty-three groups are split up into three main groups:

1. Mining and heavy industries.
2. Manufacturing industries.
3. Trade and commerce.

The values of the application-rights from the 31st December 1913 are added to the prices on which the calculation is based.

The *bond-index* is worked out on the basis of the prices of ninety-five fixed interest-bearing securities (exclusively paper with 4 per cent. interest). These are collected into six groups:

1. German state loans.
2. German provincial loans.
3. German city loans.
4. Prussian mortgage bonds.
5. Land mortgage bonds.
6. Industrial bonds.

Finally, *the index of foreign securities* is worked out from the rate of twenty so-called "valuta stocks."

These three stock exchange index numbers differ so much in significance that it would be ridiculous to combine them into one index number. The rates of the foreign securities are influenced primarily by movements in the rates of the foreign currencies in which they are expressed. The prices of home fixed interest-bearing securities reflect, in general, movements in the long-term rate of interest. In times of violent fluctuations in the value of domestic currency, the prices of such bonds are not, except in quite special circumstances, influenced by these exchange movements, as these bonds themselves represent only claims to domestic currency, and their prices are expressed in such currency. On the other hand, shares imply participation in industrial and commercial undertakings, and accordingly, even when their nominal amounts are expressed in the currency of the country, they embody "commodity values," the movement of which is essentially independent of that of the value of the currency, but need not be on lines parallel to that of foreign currencies. While the index of foreign securities scarcely reflects more than the course taken by foreign currencies, and the index of fixed interest bonds is, in general, indicative only of the rate of interest, but not of the changes in the exchange relations between money and other values, the index of stocks and shares gives important indications in regard to the purchasing power of money in terms of industrial and commercial undertakings.

In recent years much time and trouble has been bestowed throughout the world upon the study of the problem of statistics of *wages and salaries*. Collective agreements have unquestionably

made this problem easier to solve. Nevertheless, the difficulties of collecting exact statistics of wages are extraordinary, even where such agreements are customary. Mention need only be made of the differences in piece-rates, which vary with locality, branch of industry, individual output, and the state of business; nor are the additions representing marriage and family allowances by any means uniform; special payments are, moreover, made for overtime.

The Imperial Statistical Office is continually working on the statistics of wages paid in the various branches of industry. It calculates, from data supplied by various industries, average index numbers for the several localities, using the method of "weighting." Special figures are calculated for the several groups of labour—male and female, skilled, semi-skilled, and unskilled workers, married and single, etc. The data available of the wages paid in State undertakings and of the salaries of State officials supplement these statistics. These absolute figures of wages and salaries are then worked up into relative figures; the wages and salaries at the end of 1913 being taken as 1. Recently the Imperial Statistical Office started to calculate, from the average figures of wages paid under collective agreements and the wages of the State workers, a general average for the several groups of labour.

The statistical problem of the value of money thus divides itself into a number of individual problems, the subject-matter of each of which is a complex of economic phenomena allied to, dependent on, and yet differing from each other. How greatly the exchange relations between money and its counter-values can vary within each of these different complexes has been strikingly shown by the course of events in Germany since the outbreak of war, of which we shall have more to say below.

¶ 5. The Analytical Problem of the Value of Money

We have defined the analytical problem of the value of money as being the problem of the factors which determine the movements in the exchange ratio between money and other goods.

The problem can be considered theoretically and practically. Each of these methods of approach must supplement the other.

The theoretical treatment must start from the general principles of the theory of money. The question of the factors which determine movements in the ratio of exchange between money and its counter-equivalents must link up with the fundamental facts which are the basic conditions of every "value"—that is to say, the utility and the difficulty of attainment of the objects to be exchanged.

We have, of course, in the so-called "theory of marginal or final utility" a brilliant attempt to place the exchange value of goods into direct relation with the degree of their utility. If a definite supply of a commodity is available, then from this supply first the most pressing needs, and then those which are the next most pressing, are satisfied. If the commodity can be used for the satisfaction of only a single want, then the more units of the commodity are consumed, the greater is the degree of satiation reached, and the smaller is the degree of the unsatisfied needs. The minimum utility which a commodity can afford, given a definite quantity thereof, is called its "marginal utility" or "final utility." The marginal utility, as will be seen from the remarks just made, falls with increasing supply and rises with increasing demand. The marginal utility of individual commodities is supposed directly to determine their exchange value. A person will only give up a unit of a commodity in his possession in exchange for another commodity if he can secure in the form of the latter a higher utility than that given by the smallest utility which he can still obtain from the commodity to be exchanged. The exchange value which can be realised in actual transactions can thus fluctuate only between the limits which are given by the differences in the marginal utilities, for the two exchanging individuals, of the commodities to be exchanged. If we consider a market with a number of buyers and sellers, then the marginal utility would find its expression in the fact that the sellers are forced to be satisfied with a price which corresponds to the lowest estimate of utility at which supply must accommodate demand—that is, with a price determined by, and expressing in money, the lowest degree of utility which the existing supply can afford to the demand.

Opinions differ as to the success of representing prices and exchange values in terms of utilities. In particular it has been pointed out that the degree of utility to individuals of units of goods is not by any means quantitatively determinable, and that it therefore cannot give an actual basis for quantitatively determining the exchange value of goods.

We need not here launch upon a critical examination of the theme, especially as there is a peculiar obstacle which prevents the application of the theory of marginal utility of money.

This theory sets out to determine the exchange value of goods from the degree of their utility to individuals, but the degree of utility of money to individuals obviously follows from its exchange value. We are here face to face with the same phenomenon as we met in paragraph 2 when dealing with the "functional value" of money. There we saw that money can operate usefully only on condition that it possesses the quality of value.

Here we observe that the degree of utility of money is also determined by the quantitative factor of the ratio of exchange between money and goods—that is, by the amount of the "exchange value" which it realises in actual transactions. What estimate the individual will form as to money will therefore depend on what goods for direct use or consumption—whether in a household or productively—can be obtained by him for the money, or what other goods he must surrender for the purpose of obtaining the money necessary for payments due. The marginal or final utility of money to a given individual is, therefore, the smallest utility which he can derive from the goods which he can procure for the available money, or must give for the requisite money, and this marginal utility is already conditioned by a definite exchange value of money, so that the latter cannot be deduced from the former.

If we consider the economic life of a country as a whole, we see that the theory of marginal utility is not applicable to money for the following reason: The conception of marginal or final utility is based upon the fact that with a given quantity of goods only a definite amount of needs can be satisfied, and that accordingly only a definite series of utilities can be yielded thereby. The smallest utility which can still be obtained is, given the demand and the supply, a fixed quantity. It determines, according to the theory of marginal utility, the value of the commodity in relation to the other goods offered in exchange by excluding a part of the demand which the existing supply cannot meet, and, further, that part of the demand is excluded which is unable to offer in return *for* the supply a marginal utility equal to the marginal utility represented *by* the supply. The primary condition that, given a *quantity of goods*, this in itself gives the possible utility which in turn will determine the value, applies in fact to all other commodities but not to money. With a thousand tons of wheat a definite number of human beings can be satisfied up to a given point, and this irrespective of the exchange value of the wheat. On the other hand, the utility of a given quantity of money is, not only for individuals but also for the country as a whole, directly dependent on the exchange value of the money. The higher the value of the money unit as against other goods, the greater are the quantities of goods which can be exchanged through the agency of the same number of money units. Of course, the demand of an individual for settling an old debt relates to a definite sum of money which, as such, is independent of the present value of money; but the demand for money as a medium of exchange in the present, and the extent of the undertakings to pay which result at any point of time from the buying of goods for credit, etc., is guided absolutely by the value, in relation to

other goods, which money actually has at that given point of time. Even David Hume had already put forward the proposition, which is in the main undoubtedly true, that the quantity of money as such is of no importance in so far as the economic importance of the money is concerned, that half the quantity of the money available in a country would, if doubled in value, perform the same services in regard to the other goods as the whole quantity of money would originally have done. Whereas in the case of all other goods the value results from the restriction of the possible utilities when the supply is given, and is in general higher, the higher is the class of utilities which are shut out by the contraction of supply—the utilities of the supply as such, however, not being increased by its exchange value—in the case of money the utility of a given supply can expand at will by the rise of the exchange value of the money unit.

We thus see that in an individual household, as in the national economy as a whole, the utilities of money—in contrast to those of all other goods—are not limited by its quantity, but are conditioned by its exchange value, and that its exchange value itself cannot therefore be derived from the limitation of its utilities by a limitation of supply. In the case of money, therefore, we must, even more than in the case of other goods, refrain from attempting to compute the amount of the value directly from the factors which condition value.

But even though the conditions which govern value—that is to say, utility for satisfying a want and the difficulty of attainment—do not enable us directly to deduce the amount of exchange value possessed by commodities, nevertheless the different and varying degrees in which these conditions obtain in the case of the various goods afford certain general indications as to the course of, and the changes in, their exchange value.

As soon as we cease to be concerned with exchange transactions between isolated economic individuals, and come to deal with exchanges in the "market," *i.e.* with transactions between a multitude of competing individuals, supply and demand are the factors directly regulating the exchange relations. The greater the supply, the smaller in general will be the equivalent value to be obtained, because some at least of the sellers will prefer to accept a smaller equivalent rather than have the goods left on their hands. The more intense the demand, the greater will, in general, the equivalent value obtainable be, because some at least of the buyers will be willing, if necessary, to satisfy their demand at higher prices.

The relation is, however, not quite as simple as it would at first sight appear. It is not only supply and demand that affect the price to be obtained, but the very price obtained can also

exercise a certain reflex influence on supply and demand. A high price can restrict demand and increase supply, and a low price tends the other way.

In the degree of this reciprocity we find the root of the most important characteristics of the price formation of the various categories of economic commodities. The more indispensable a commodity, and accordingly the greater and more pressing the demand for it, the higher will the price have to rise when supply is short, in order, correspondingly, to limit demand. The smaller the margin of expansion in the demand, the more must rising supply depress prices to enable stocks to be disposed of. This explains the well-known fact that the prices of those commodities which up to a certain quantity are necessary to everyone, but whose accumulation beyond a certain measure is of no interest to anyone—such as, for example, the principal foodstuffs—are liable to greater price fluctuations than are articles of luxury, which, although dispensable, can at the same time be disposed of to a degree which has no limit in practice.

On the side of supply the possibility of expansion and contraction also varies considerably with the commodity. The less the supply of a commodity can contract, the more will the price drop when demand falls off. Thus, for example, the price of rapidly perishable commodities is liable to fall much more than is the price of durable goods, the supply of which can, at all events temporarily, be withheld. At the same time, the more difficult it is to expand the supply, the higher must prices rise when demand is on the increase. This explains why movements of prices differ so much for commodities, the supply of which can be increased at will without a rise in cost, and commodities the supply of which cannot be increased at all, or only at a rising cost —in which connection the impossibility or difficulty of increasing supply may be due to natural as well as to legal causes (monopolies).

We need not emphasise the fact that, as regards the conditions which operate on the side of supply, we have the factor of difficulty of attainment, and in the case of those which affect demand, the factor of utility for satisfying needs.

Applying these general principles, which we have just elaborated for the exchange value of goods, to the particular problem before us, the result is that those factors also which, operating on the side of money, determine the ratio of exchange between money and other goods, are to be sought in supply and demand, *i.e.* in the changes of money supply and money demand. The real inward significance of this statement, which alone does not convey much, is gathered from the detailed analysis to which we subjected money demand and money supply in the first two chapters of this

section. A study of the particular characteristics of each of these two factors gives the following results for the value of money:—

The supply of money is, in the case of metallic money, in general, a relatively stable quantity. The durability of the precious metals has resulted in such large stocks of them having accumulated in the course of centuries that the annual production of fresh supplies and the variations therein have an infinitesimal influence on the stock of the precious metals available in a country. Only such enormous changes in the production of the precious metals as those brought about by the discovery of America, and in the nineteenth century by the opening up of the Californian and Australian goldfields, or such very great displacements in the distribution of the world's stock of the precious metals as were caused by the Great War, can cause sudden and sharp alterations in the monetary stock of the precious metals of individual countries.

In a country provisioned with money by the issue of paper notes, no general statement can be made, as the extent of, and changes in, supply depend in such a case on the policy of the State or of the bank issuing the notes, which may or may not be voluntary, but is certainly not conditioned solely by the requirements of the monetary system. The money hunger of the State, not that of the country itself, is often the decisive factor in such a case.

The demand for money, which depends upon the many and complicated conditions explained above, is subject to certain definite changes in the long run, as well as within the shorter periods of the economic evolution of countries. As to the general development of the monetary demand of nations whose institutions are completely based on money, we observe that the various factors which affect the demand for money tend to compensate each other. The economic progress of a country is accompanied by increases, on the one hand, in the numbers of transactions which take place through the agency of money, and, on the other hand, in the intensity of exploitation of the supply of money; and these two processes cancel each other up to a certain point, in their effect on the aggregate demand for money.

As to the reflex action exercised on the supply of money by its purchasing power, we may remind the reader of the remarks which we made when analysing the supply of money. The first factor which enters into the question of provisioning countries on a metallic standard, that of the newly produced supplies of precious metal, can be influenced only to a small degree by the course taken by the purchasing power of money. When this rises, the profitable exploitation of poorer sources becomes possible, for of course an increased purchasing power may mean an increased command over labour and mining materials, whereas when the

purchasing power falls off, the working of the least profitable mines is suspended.

In considering this factor, however, we must not forget that the supply of any individual country with metallic money—and this is the only thing which matters in this particular case—is not directly influenced by the general circumstances relating to the production of the precious metals, but by the movements of the metals, including the accumulated stocks of all countries which participate in the world's commerce. These movements are very decidedly influenced, within the limits indicated above, by the relative intensity of the demand for money in the several countries and by the purchasing power of the metallic money in various areas, whether in terms of goods, securities, etc., or by interest on money loans. The international freedom of movement of the precious metals, as it existed before the War, meant that each country was in a measure insured by the others against fluctuations in the demand for money. The direction of the changes in that demand varied, but the changes tended to cancel each other in their effect on the value of the money metal.

Further, the precious metals are largely used for luxury purposes. Here demand is just as easily contracted as expanded by changes in the supply and by the effect of these changes on the obtainable equivalent. Moreover, stocks of money metal accumulated in the form of jewellery and plate furnish an important reserve against any considerable rise in the demand for money and in the *quid pro quo* obtainable for money. The first years of the War showed the extent to which this reserve could be mobilised in case of need. The degree to which the supply of money can adjust itself to the demand is thus enhanced by the fact that the precious metals can be used for luxury purposes.

Finally, in the case of monetary systems on a metallic basis, the circulation of money can be closely adjusted to changes in the demand by the issue through banks of paper tokens. When banking is rationally regulated and the policy of the banks properly handled, an elastic note circulation should suffice to meet the fluctuations in the demand for money caused by changes in economic circumstances and by the uneven distribution of payments within the individual years, so that these periodic fluctuations in the demand for money drop out of consideration, or at least lose importance as factors determining the value of money.

In those monetary systems in which the issue of currency is entirely at the pleasure of the Government—that is, especially in the case of paper currencies—it is theoretically conceivable that the circulation should absolutely adjust itself to changes in the demand for money. It is a fact, however, that in most cases of paper currencies these are not issued at the "will" of the

Government, but are due to sheer necessity, and as often as not the State is not a free agent in manipulating the printing-presses, and cannot follow sensible principles of adjusting the circulation to the changes in the country's demand, but finds itself forced by circumstances which are stronger than any considerations of a well-ordered monetary system.

As to the degree to which the demand for money can be adjusted, in normal circumstances, the fluctuations in the transfers to be effected by the agency of money can to a very large extent be met by a more or less intensive exploitation of the available media of circulation, by the elastic issue of notes, and by supplementing the circulation proper by credit documents, the normal purpose of which is not the actual performance of the functions of money. Accordingly, it follows that an increase in the transfers to be effected through the agency of money, as exemplified above in particular by clearing-house transactions, need not by any means lead to an increase in the demand for media of circulation in general, and for metallic money in particular.

Above all, however, the reflex effect which the purchasing power of money has on the demand is more intensive than in the case of any other commodity, and this is so because, as already repeatedly mentioned, money is the only commodity which derives its utility from its exchange value and which rises or falls with that exchange value. In the case of all other commodities, when the relation between supply and demand changes, these two factors can be brought into equilibrium again only by means such that, should demand exceed supply, that part of the demand which cannot be covered by the supply is forcibly excluded by rising prices; and that, on the contrary, should supply exceed demand, the volume of demand is increased by a fall in prices and new and less effective purchasers are attracted and the existing purchasers are induced to extend their demand. The fluctuations in prices must thus be the wider the greater is the resistance of demand to the reflex action of prices. Now, in the case of money, the resistance of demand both to the restrictive and to the stimulating influences of changes in the exchange value is almost non-existent. As soon as the determinant factors operating on the side of money have prevailed in regard to the exchange relation between money and other objects, and have led to a rise in the volume of other objects which can be obtained for a given quantity of money, a greater *demand* for money can be met by the same *quantity* of money seeing that it now possesses a higher exchange value. On the other hand, a drop in the exchange value of money leads to the same quantity of money being required for the satisfaction of a smaller demand. The demand in an economic system for money

does not call for a specific *quantity* of pieces of precious metal or of paper notes, but for a specific volume of purchasing power. For that reason any money demand whatever can be brought into equilibrium with any supply of money by way of a corresponding alteration in the exchange relation between money and other goods. A discrepancy between the demand for and supply of money can, because of this special position of money, occur only in so far and so long as any alteration in the determinant factors affecting the exchange ratio has not yet fully adjusted that ratio itself. The effects of such discrepancies will be further discussed below.

The idea that the stock of money available in a country can adjust itself, and strives to adjust itself, to the demand for money by alterations in its exchange value, lies at the root of practically all theories of the value of money. The shortcomings of individual theories are due to the complicated factors of monetary demand and supply not having been correctly judged. The old theory of Locke assumes that the demand for money in a country is given by the total supply of its goods. Certain modern variants of the "quantity theory" see the changing factor amongst all the determinants of the value of money solely or mainly in the supply of money, as represented by the current production of the precious metals, in the case of metallic currencies, and by the extent of the issue of paper money in the case of paper currencies. These theories, which take into account only *one* factor amongst all those which operate upon the exchange relation between money and goods, and regard it as decisive, overlook, or at least underestimate, the numerous counterbalancing factors, and this must necessarily lead to an overestimate of the fluctuations in the purchasing power of money, and thereby to an overestimate of the effect which money has on changes of prices, etc. A fuller and deeper analysis, such as has been attempted here, of the demand for and supply of money and the reciprocal relation between these two factors, leads to the result that, in the case of scarcely any other commodity, do the factors which are of primary importance for determining exchange value guarantee in their total effect such a degree of stability as they do in the case of money, because of its special economic position, and, above all, because of the organisation of modern monetary systems based on metal and supplemented by an elastic note issue.[1] Of course, if the quantitative changes in the monetary system take place to such an excessive degree as the War brought about, not only in the case of the belligerents but also in the case of neutrals, the exchange relation between money and its manifold equivalent

[1] *Cf.* herewith Lexis, *Allgemeine Volkswirtschaftslehre*, 1910, pp. 100 *et inf.*, 115, 116, 127.

values must be shaken to the utmost notwithstanding the corrective effects which flow from the nature of money as such.

¶ 6. The Organisation of Monetary Systems as a Problem of Value

Having seen the presuppositions and determinative factors of value in general and of money value in particular, we are now in a position to obtain an idea of the deeper significance and of the effective limits of those measures by which the State co-ordinates the several types of money, consisting of different materials, into a uniform system, and gives to this system a foundation of value in one of the precious metals. We have now to elucidate from the principles of the theory of value the internal structure, with the effects of which we have already had to deal in the historical part, and in the section of the theoretical part which deals with the organisation of money.

The two primary conditions of value are utility and difficulty of attainment. The absolute amount of value is conditioned by the extent of the demand, which is in turn dependent upon utility, and the magnitude of supply, depending upon difficulty of attainment. Considered from these points of view, how will the measures appear by which the ratio of value between money and the money metal, or between a third object of value and the individual types of money is fixed?

In free coinage we found the means by which a fixed ratio can be established between coined money and the uncoined metal. The question which still remains to be answered is what effect free coinage has on the degree of utility and on the difficulty of procuring money and money metal.

From the fact that the precious metals can *ipso facto* be transformed by free coinage into money, we obtain first and foremost the result that the value of the precious metals is no longer governed exclusively by their usefulness for the manufacture of jewellery, plate, etc., but is derived very largely from their employment as money. The fact that the so-called "intrinsic value" and the "functional value" of money are essentially synonymous is seen with especial clearness here, because, in the event of free coinage, the value of the monetary substance (the standard metal) is in part conditioned by the possibility of utilising this substance in the money function. All quantities of the precious metal which fulfil monetary purposes are withdrawn from their employment for ordinary purposes, not permanently and irrevocably, but at all events for such time as they are employed for monetary purposes. In previous editions of this book we summed up this point as follows: "If the whole enormous stock of the precious

metals which functions as money to-day could be replaced in that function by something else and thrown on the industrial market, then by such contraction of its sphere of employment we should bring about a considerable diminution in the value of the precious metals. In the case of silver, the course of events in the last decades has given us sufficient opportunity to observe the effects of a contraction in monetary employment on the value of the metal." Nowadays we can add the fact that the mobilisation of the gold contained in jewellery and plate, such as was carried out during the War in the belligerent countries, and especially in Germany, combined with the actual restriction of the employment of gold for monetary purposes in belligerent countries, has greatly reduced the value of gold as against other economic objects all over the world.

Whilst, then, on the one hand, the value of a freely coined metal is conditioned to a preponderating extent by its employment for monetary purposes, free coinage, on the other hand, places the value of the coined money in a definite relation with the value of its metallic contents. When the State declares itself ready to strike gold coins free of charge or for only a very small charge for anyone who delivers to it any quantity of gold whatever, it limits the difficulty of obtaining[1] gold coins to the difficulty of obtaining the quantity of gold which such coins contain by regulation, plus a fixed seigniorage and any other costs involved in coining (loss of interest, etc.). The value of gold in the form of money can, therefore, only exceed the value of bar gold by very small amounts, whilst at the same time the value of gold coins can naturally be no lower than the value of the gold which they actually contain.

As every demand for money can be met, when gold is freely coined, by procuring gold, all factors which have an influence on the value of money affect also the value of gold. In recent times people have been inclined to overestimate this aspect of the reciprocal relation between money and money metal. In fact, some have even gone so far as to challenge the statement that free coinage makes the value of money depend upon the value of the money metal, by asserting that the value of the so-called standard full-value gold money is derived from functions as means of exchange and means of payment, just as independently of its intrinsic value as in the case of any inconvertible paper currency. One of the most notable adherents of this view, Otto Heyn, put forward the following proposition with regard to, not the German paper currency of to-day, but the German gold currency as it existed before the War: the value of the mark, determined by its purchasing power and power of legal tender, and not the gold

[1] The "difficulty of acquisition" should be distinguished from "cost of production."

contained in the gold coins of the Reich, is the decisive factor regulating the value of German money, and it is accordingly wrong to call the German currency a "gold currency"; it is a "mark currency."

As under free coinage there is a definite ratio of value between the money metal and the coined money, it would necessarily follow from the view set forth above that the value of the uncoined money metals would be determined by the value of the gold coins. But a brief consideration will show that this view is incorrect. The factors which influence the value of money of any particular gold standard country—factors which, as we have seen, affect the value of gold—could completely determine the value of gold only if the metal were to be employed for no other purposes than those of money in that particular State. But just as its use for German money, so also its use in English, French, American, and other currencies influenced the value of the gold metal, as long as all these States were actually on a gold standard. In a similar way, though perhaps in a smaller degree, the value of gold is influenced by its use for industrial purposes. These various possible uses of the metal, taken together, give the degree of the utility of gold and accordingly furnish one of the factors in the determination of its value. This factor determines, together with the difficulty of procuring gold, the value of the metal. Where free coinage sets up a definite ratio of value between the money unit and a specific quantity of metal we obtain a double-sided relation, in that the value of the money unit is placed in a fixed relation with the value of the money metal, which, in its turn, is influenced to a certain degree by the demand for the money of the country in question.[1]

A clear recognition of this relation is important not only because of the nature of free coinage and of the scheme of things to which it gives rise, but for an understanding of the general construction of monetary systems.

If in the equation between money and its substance, resulting from free coinage, the value of the substance were unconditionally and one-sidedly dependent upon the value of the money, there would be no difficulty whatever in placing the various types of money, differing in substance, in a fixed relation of value towards each other. If the value of the mark is a given quantity, and if, gold being freely coined, the value of a pound weight of fine gold were fixed at the value of 1395 marks, then silver, being also freely coined, the value of a pound weight of fine silver could be fixed at any arbitrary amount in marks, and the same would apply to the value of nickel and copper. The co-ordination of coins made of different substances into a uniform monetary

[1] *Cf.* Heyn, *Irrtümer auf dem Gebiete des Geldwesens*, 1900, pp. 1–12.

system, and, above all, the introduction of bimetallism, would thus never have constituted a problem. The nature of the historical difficulties arising in these two directions becomes, however, clear as soon as we recognise the real relation between the metal and the coins struck from it which exists under free coinage. Just as the value of gold was not determined by the provision that from a pound weight of fine gold 1395 marks of German legal tender money were to be struck, but by the possibilities of using it for all other monetary and industrial purposes in addition to its use for German money, as well as by the conditions affecting the supply of gold, so it was with silver and the other monetary substances. The State, which gives the right of free coinage both to gold and to silver, assigns the power of legal tender at a fixed ratio of nominal value to coins struck from both metals, and which declares these coins to be interchangeable on the basis of this relation, does, in effect, regulate the utility and usefulness of both precious metals, but this regulation applies only to the usefulness of the metals for specific purposes and not to the entire complex of purposes for which they can be used. At the same time, the difficulty of procuring gold as well as silver remains wholly unaffected by any regulations relating to the monetary employment of the two metals. In the case of neither of these metals, therefore, can the legislature of the State, by provisions regarding free coinage and the legal tender power of the coins produced by it, exercise a *dominating* influence on even one of the two factors which condition the amount of value. State legislation in currency matters cannot do more than simply *modify* in a more or less far-reaching degree the effect of one of the factors which determine value—the factor of utility. It is, however, clear that the setting up of a fixed ratio of value between two objects is conceivable only on condition that either the possibility of use of the one is absolutely dependent on that of the other, or else that a similar relation exists between their respective conditions of production.

This shows the theoretical impossibility of the double standard, the impracticability of which has already been proved in the historical part. There is no doubt that the double standard can have an influence on the ratio of value between the two precious metals by placing their use for a specific purpose in a definite relation. This influence would, moreover, be necessarily greater in proportion to the extent of the sphere of employment of the precious metals affected by it. An isolated double standard regulates only the monetary employment of gold and silver in a particular country, and not that of both metals in other countries. Just as little does it regulate the general sphere of the industrial uses of the metals. A double standard set up by a convention, including most of the important trading countries,

would, on the other hand, fix the relation of the monetary employment of gold and silver for the whole area covered by the convention, and would thus regulate a far larger proportion of the general sphere of employment of the two metals. If France and England had a double standard based on the same ratio of value, then a demand on the part of France for media of payment to England could be satisfied by either gold or silver. It could not, therefore, disturb the French ratio of value between the two metals in the same way as would happen if England had free coinage only for gold, and a money demand for payments to England could therefore be met only by gold. But in the case of such a contractual double standard the field of industrial employment, and also the difficulty of procuring both metals, would remain outside the sphere of influence of currency legislation.

Thus, even in the case of a world-wide bimetallic system, the possibility of fluctuations in the ratios of value between silver and gold could by no means be wholly excluded.

If, then, when both metals are freely coined, the gold coins are placed in a fixed relation to a definite quantity of gold, and the silver coins to a definite quantity of silver, what in such a case is the effect on the monetary system of fluctuations in the ratio of value between gold and silver? There are two alternatives.

1. Either the assignment of the quality of legal tender to the freely coined silver and gold pieces has the actual effect up till now assumed, that the monetary employability of a specific quantity of gold is absolutely the same as the monetary employability of a specific quantity of silver. If, however, for a particular purpose two different commodities are absolutely interchangeable, then, as demand seeks to satisfy itself with the least possible sacrifice, only that commodity which is the easiest to procure finds employment for that purpose, whilst the other commodity is set free for those employments in which the commodity, easier to procure, cannot be substituted for it. In such a case, therefore, only the metal which, in relation to the face value assigned to it, is the easier to procure would find employment as money.

2. Or else, the assignment of the quality of legal tender at a definite ratio of nominal value to two types of money composed of different substances has not an unconditional effect on the ratio of value in which the two types are employed as money. In such a case the fluctuations of value between silver and gold could, and necessarily would be, transferred to the freely coined gold and silver pieces.

The same applies to paper currencies. If paper money is made by law equally utilisable as a means of settling money debts, and if the difficulty of procuring paper money is not by special arrangements maintained at the level of difficulty of procuring metallic

money, then it will not be long before the paper money is used as a medium of payment and the metallic money is used for the other purposes for which it can be employed, or is retained in circulation only whilst commanding a premium.

We have in fact seen above that the provisions by means of which the State gives to specific objects the capacity of serving as a medium of settling existing money debts do not by any means give to the State an absolute power over money. The State can compel the creditor to accept in settlement of his outstanding claim the objects which have been endowed with the power of legal tender; but it cannot permanently prevent new loan contracts from being concluded in other objects of value than those which it has declared legal tender; it cannot permanently prevent the creditor from accepting a specific type of current money, which for some reason or other he values more highly, at a higher value than the legal face value; it cannot permanently prevent sellers from selling only in terms of specific types of money, or from making different prices in different types of money, or from adjusting their prices to the value of the inferior types of money which alone are still in circulation. Finally, it cannot prevent the demand for hoarding purposes from being in the main, or exclusively, directed towards types of money made of a specific substance or from turning away completely from the money of the State. For all these reasons the assignment of the power of legal tender and of reciprocal interchangeability at a definite ratio to two types of money consisting of different materials is by no means synonymous with the establishment of a definite ratio even in regard to the monetary employment of both types.

If the State desires to establish a fixed ratio of value between types of money of two different substances, it can do so only by regulating the conditions of acquisition, at least in so far as one of these types of money is concerned. If the value of the gold coins is brought by free coinage into a fixed relation with the value of their gold equivalent, then the assignment of a definite power of legal tender to types of money made of different substances can link these types up with the gold coins in a definite ratio of value only if the State, by actually exercising its monopoly of production of money, *i.e.* by restricted coinage and issue, raises the degree of difficulty of obtaining these types of money up to the point at which equality of value with gold coins is secured. If, in addition to gold coins, silver coins are also freely struck, then the difficulty of procuring silver coins is determined by the difficulty of procuring a definite quantity of silver plus the charges of coinage. Only by the State being disinclined to transform whatever quantity is desired of silver into money can it raise the difficulty of meeting the demand for silver money over and above the difficulty of

procuring silver metal to such an extent that it corresponds to the difficulty of procuring gold money. Similarly, in the case of the issue of paper money, a stringent restriction of the issue is the only means by which the difficulty of acquisition can be maintained at the level of that of metallic money. Correspondence between these can be secured absolutely by the State's undertaking to exchange the money placed by it in circulation—in so far as it consists of other substances than the freely coined standard metal —at its nominal value for money of the latter type. So long as for money made of silver, base metals, and paper, the same amount of gold money as their nominal value can be obtained without further trouble, the difficulty of procuring gold money is equal to that of obtaining the inferior types of money. But this latter safeguard as such is not necessary so long as the issue of money which consists of inferior content is kept within such limits that the difficulty of procuring it in money form appears as a sufficient addition to the difficulty of procuring the substance of which it is made.

The impossibility of uniting types of money which consist of different substances into a uniform system in any way other than by free coinage for one only of the currency metals, and by State regulation of the issue of types consisting of the other substances, is thus to be traced back to the basic fact of value, namely, that the amount of value is regulated by the degree of utility and by the degree of difficulty of attainment.

¶ 7. Concomitants and Consequences of Changes in the Value of Money

The fact established above, that any arbitrary quantity of money can be completely adjusted to the demand for it by alterations in its value must not mislead us into concluding that economic conditions are unaffected by changes in the quantity of, or in the demand for, money as manifested by displacements in the exchange ratios between it and other goods. In fact such displacements, as our experiences of the last few years have demonstrated more fully than ever before, do not take place without important concomitants and without lasting consequences to the entire economic system.

In order to obtain a picture of the phenomena concomitant with changes in the value of money, we have to observe how the factors operating on the side of money work themselves out in the exchange relations between money and other objects, and what are the consequences arising from a period of transition during which there is maladjustment between the demand for, and the supply of, money.

The manner in which these maladjustments affect exchange ratios, prices of goods, wages of labour, etc., is not immediately obvious. Observation of the actual course of events during the time when the gold standard was universally in force shows us that when there was a considerable rise in the production of gold, or a considerable influx of gold from abroad, the new money did not always come into immediate juxtaposition with other economic goods, or that by reason of the greater supply of money, owners of money were immediately forced to be satisfied with a smaller equivalent in goods. In point of fact, the greater influx of metallic money manifested itself, first of all, in quite another direction, namely, in the stock of ready money of the large banks and on the money market. We noted that the central banks were the agents for international financial business. The metal coming from abroad flowed into their coffers, and at the same time the demand for money for foreign countries drew upon the stocks in these coffers. Maladjustments in the supply of money therefore, in the first instance, manifested themselves in their effect on the size of these cash reserves. But the cash reserves of the central banks and the money market were, on the whole, as much affected by fluctuations in the home demand as by changes in the stock of money. In times of falling demand the metallic stocks of these banks grew, and in times of increasing demand fell. The changes in the position of the trade cycle, the regular seasonal fluctuations in the demand for money, and the individual periods of large payments were all clearly mirrored therein.

It is obvious that there is no direct connection between the money reserves which lie in banks and the alterations in the prices of commodities, and of wages of labour, etc. There does, however, exist a relation to the rates of interest for short-period credits. The banks, so long as they continue to be under an obligation to convert their notes for metallic money, find it necessary, in the interest of their own solvency, to preserve a certain relation between their reserves and their liabilities. This relation becomes the more unfavourable the greater are the calls for money made on the banks by the demand for short-term credit which is met by the issue of notes, by book entries which increase clients' accounts, or by the issue of metallic money. Accordingly, in the case of a currency on a metallic basis, the banks find it necessary to counter a rising demand for money by increasing the rates of interest. Only in this way can they curtail the calls made upon them without recourse to the oppressive measure of actually refusing credits. A rise in the bank rate, moreover, encourages the import of bullion from abroad, or discourages the export of bullion to foreign countries. On the other hand, the business interests of the banks make it necessary that no superfluous cash should

lie idle and produce no interest. If the cash reserve rises above the requisite level, the banks are thereby enabled to reduce their loan rates and thus to attract a fresh demand for credits. As the large central banks represent the focal points of the money market in their area, there exists a very close interaction between the changes in their rates of interest and those of the other banks and of the money market as a whole. The immediate effect of changes in the supply of and demand for money is thus, in the case of a currency on a metallic basis, clearly a general alteration of rates of interest for short-term credit, and, as the main form of this is the discounting of bills of exchange, chiefly of discount rates.

High rates of discount are frequently regarded as synonymous with a rise, and low rates of discount as synonymous with a fall in the value of money, and changes in the "loan rate" for money have often been inextricably mixed up with changes in the exchange ratio of money in terms of other economic objects, *i.e.* with the purchasing power of money. Really, however, these phenomena belong to essentially different spheres. If the value of a commodity can take shape only in being exchanged for another commodity, if, in fact, it is only an abstraction from the act of exchange and from the exchange relation, then the loan rate paid in money for the temporary loan of a sum of money tells us nothing regarding the purchasing power of money.

The fact that changes in the supply of money and in the demand for money have, in the case of a currency on a metallic basis, a tendency to affect, in the first instance, the loan rate for money does not by any means completely answer the question whether this exhausts the effect of such changes. In order to answer this question we must consider the causes of the direct effects of the indicated change on the rate of interest.

Those who require money, whether for purchases or for making payments, can obtain it in one of two ways. They can either dispose of other goods for money, or they can have recourse to credit. On the other hand, those who have at their disposal a surplus of money can either exchange it for other objects, or they can lend it out at interest. The acquisition of money by way of credit is, as a general rule, preferred when rates of interest are low, and prices which can be obtained by the sale of goods, etc., are unfavourable. Similarly, it is preferable to dispose of money by way of credit in proportion as rates of interest are high and the advantage to be reaped by exchanging the money for other goods is small. To this must be added that high rates of interest prevent many a purchase on credit from taking place, whilst low rates encourage such purchases.

We have already found in credit the medium which brings about the more or less intensive exploitation of the available stock

of money. An increasing demand for money or a diminishing supply can, by an intensive exploitation, be neutralised in its effect on the prices of goods, etc. As, however, such an increased exploitation of the supply of money is only possible by the greater use of credit, a rising discount rate must be its necessary concomitant. The opposite is the case when the stock of money increases or the demand for it diminishes. In so far as the maladjustments in the relation between the supply of, and demand for, money remain within such limits that they can be cancelled out by increasing or diminishing the intensity of exploitation of money through credit, the effect of these displacements need not spread to the exchange relation between money and other goods.

The intensity of exploitation of media of circulation has, however, both upper and lower limits. Unlimited sums can neither be offered by way of credit nor yet disposed of. If, when there is a maladjustment between the demand for money and the supply of it, the acquisition or disposal of money by way of credit becomes, by reason of too high or too low rates of interest, impossible or uneconomic, there remains only the way of exchange of other goods for money or of money for other goods. As soon, however, as this point is reached, the maladjustment in the monetary supply and demand begins to operate on the exchange ratio. The demand for money, which up to that point was directed only to the banks and to the money market, now leads to offers of goods being made, and therefore tends to reduce prices. In the opposite case, the offers of money, which have heretofore made themselves felt only on the loan market, lead to a demand for other goods and bring about a tendency to rising prices. In this way the alteration in the factors which determine the value of money at last come to affect the course taken by the exchange ratios, and thereby to re-establish the position of normal equilibrium between the supply of money and the demand for it.

Thus, in the case of metallic currencies, the loan market acts to some extent as a buffer, which is the first to receive and considerably softens the impact on the exchange relations between money and commodities resulting from fluctuations in the supply of and demand for money. This buffer, for the most part, does not exist in the case of paper currencies. As the convertibility of bank notes has been suspended, the question of preserving a definite relation between the metallic cover and the note circulation has here lost its practical importance, even though certain formal regulations for the note cover have been retained. Consequently, a true "Discount Policy," *i.e.* the methodical manipulation by the central note-issuing bank of the rates of interest on the loan market, loses its main driving force. This driving force is still more in abeyance if, in critical times, the State, as the principal

vehicle of the demand for money does not desire that this demand should be checked by a rise in the rates of interest, or if force of circumstances and considerations affecting the very existence of the State forbid that such counter-action should be instituted by the central note-issuing bank. In point of fact, we have seen that during the War, which brought about a greater disturbance in the sphere of monetary demand than had ever previously been witnessed, apart from the first weeks of panic, the attempt was nowhere made to influence the demand for money by tightening the screw of the discount rate, and that, in fact, both the official discount rates of the large central note-issuing banks as well as the rates of interest on the open market were everywhere only moderately high and showed marked stability. From the year 1915 onwards the discount rate of the Reichsbank stood unchanged at 5 per cent. until long after the end of the War. The same applies to the rate of the Bank of France. The discount rate of the Bank of England moved in the years 1915–1919 between 5 per cent. and 6 per cent.

In the case of a paper currency there is even a smaller possibility of stopping a sudden rise in the supply of money by means of the intervention of the central note-issuing banks than of counteracting a rise in the demand for money by using bank rate. Whilst with a gold currency the central note-issuing banks, when the production of gold greatly increases or there is a considerable influx of gold from abroad, at first strengthen their gold reserve and reduce the amount of their uncovered note issue, with a paper currency, on the other hand, the increase in the supply of money proceeds mostly from the central banks themselves, mainly by the State's making calls upon the credit of the central banks and forcing upon the market, by payment of wages and salaries or by its demand for materials and necessaries of all kinds, the quantities of new paper money thus obtained.

The changes proceeding on the side of money will therefore, in the case of a paper currency, influence the exchange relations between money and other goods in general more directly, and for that reason more strongly, than in the case of a metallic currency supplemented by a properly organised banking machine.

It is in the nature of the occurrences which are here to be explained that changes proceeding on the side of money do not equally or simultaneously affect all the exchange relations between money and other goods. If the factors operating on the side of money tend to produce maladjustment in the exchange relations in favour of money, and if, therefore, a rise in the value of money takes place, then a drop in commodity prices, in wages, and in the other price-equivalents will show itself most quickly where the least resistance can be offered to an unfavourable tendency in the

exchange relation. The degree to which prices, etc., can offer resistance changes with each stage of economic development. In the early stages of commerce, custom and tradition, as we have seen in the historical part, give considerable stability to the exchange relation. The more trade develops and the more parties oppose each other in trade—each seeking to exploit to his advantage even the smallest variations in market conditions—the more directly and intensively will changes in the factors of price formation operate on the exchange ratio.

In this respect not only do the various stages of development of an economic system differ, but so also do the various spheres of economic intercourse, and the various objects within one and the same economic system. Prices are more sensitive in wholesale than in retail trade. They are more sensitive in the case of raw materials and of semi-manufactured articles which, being dealt with in large quantities, are objects of wholesale trade, than in the case of finished products which are disposed of by retail. Wages and, still more so, salaries fixed for longer periods remain more stationary in general than commodities which market conditions revalue from day to day. Then again there are differences in the position of the individual groups of buyers and sellers. He who finds it necessary to sell will, when the value of money rises, feel the effects of such a rise earlier and more strongly than he who can afford to bide his time with his sales. He who must buy will, in case of a fall in the value of money, find it necessary to pay higher money prices for the objects of his desire earlier than he who can wait. In both cases those who are economically strongest are in a position to exploit the maladjustments to their advantage, at the expense of those who are economically weaker.

Until an absolute equilibrium in the exchange relation has been reached through a rise in money value, those stand to gain who can continue to obtain the old prices for their goods, services, etc., for the longest time, while at the same time being in a position to pay less for other goods; when the value of money falls, those are the gainers who can first obtain higher prices for their goods, services, etc., if, at the same time, they need not immediately pay higher prices for the other goods, or at least not proportionately higher prices.

The relative stability of wages has led to the assumption, which has grown to a general conviction, that of all prices, wages are those which are the last to adjust themselves to changes in the value of money, and that, therefore, when the value of money rises, the workmen gain for the time being at the cost of the employers, whilst, when the value of money falls, the profits of employers are increased at the cost of the standard of living of the workmen. How far these results accrue depends to

a large extent upon the power of labour in the social system. The weaker this power the easier it is for employers, when they obtain lower prices for their products on a rise in money value, to reduce wages correspondingly, or, when, in the event of money depreciating, they obtain higher prices for their goods, to deprive the workmen wholly or in part from a participation in these. The greater the power of labour, the easier it is for the workers to bring about, when money depreciates and the prices of the necessaries of life rise, a corresponding increase in their wages, and in certain circumstances they may even be in a position, by means of increased wages, to steal a march on the rise in prices.

Changes in the value of money bring about a permanent displacement in the relations between debtor and creditor. An increase in the value of money means that those who have to claim money are placed in a more favourable position, whether in regard to loans granted to them, or whether in regard to fixed interest or salary payments. A depreciation of money means that all who are under an obligation to make such fixed payments are placed in a more favourable position. Not infrequently creditors have been described as being "economically the stronger" class which suffers no damage by such unfavourable circumstances, and debtors as being "economically the weaker" class whose position ought to be alleviated. We must, therefore, point out that the term "creditor" in the sense used here includes not only the large capitalist but also the small investor, often involuntarily so situated, as well as the workman who has deposited his savings in a savings bank. The "debtor" class includes not only the small peasants whose land is heavily mortgaged, but also the large and powerful *entrepreneurs*, particularly companies which work in part with borrowed capital, bank credits, and money raised against debentures. As a general rule, the working-classes are not in debt, as credit is granted to them only to a restricted extent. On the other hand, it is just the best elements among the workmen who are in a position to make small savings.

Apart from changes to the advantage or disadvantage of individual classes and groups within an economic system, changes in the value of money affect the general course of economic life. A drop in the value of money which gradually works itself out in a rise of all prices and of all other price-equivalents of money encourages speculation. The very reduction of rates of interest, which is the immediate consequence of a preponderance of money supply over money demand, in itself tends to favour an expansion of undertakings. Many a transaction which would bring no profit when discount rates are at 5 per cent. appears to be still profitable when the rate is 3 per cent. Moreover, the fluidity of money, if of long duration, generally results in a rise in the prices of gilt-

edged and fixed interest-bearing securities. This encourages the public to take up dividend-yielding securities. The demand for these leads to the establishment of new undertakings and to increases in the capital of existing companies, which are not justified by the conditions of the commodity market, but which are brought about more by considerations of favourable opportunities which arise for the placing of industrial and bank shares. The rise in prices, gradually spreading from one group of commodities to another, makes it possible, so long as it has not become general, for individual branches of production to make higher profits, and reinforces the upward tendency which was initiated on false assumptions. Whilst the new and extended undertakings produce goods for which the actual demand is not correspondingly increased, they lead to over-production. Whilst the temporary high profits of individual undertakings, the low rates of interest, and the high prices of gilt-edged securities conduce to an excessive demand for industrial shares, they lead to over-speculation and ultimately to an unavoidable reaction.

The effects of an increase in the value of money are of an opposite nature. The rise in rates of interest, in which a demand for money which exceeds the supply first manifests itself, restricts business activity. The gradual fall in prices diminishes profits and paralyses enterprise. Undertakings which are the first and the most heavily hit by the fall in prices are those which cannot reduce their costs of production, particularly wages, to correspond to the reduced income from their products, and thereby suffer losses, and are forced to restrict their activities or even to close down altogether. The reduced demand for labour ultimately depresses wages, and does so under conditions distressing both to the employer and to the employee.

Changes in the value of money, no matter in which direction they take place, thus produce conditions which create serious alterations in the distribution of income and of wealth, disturbances in the bases of all economic calculations, and accordingly in the economic life of the community. Both in the interests of the economic system as well as of justice, it therefore appears most desirable to maintain the value of money as stable as possible, *i.e.* to keep the factors which determine exchange relations on the side of money as fixed as possible.

In the attempt made above to outline the nature of the concomitants and consequences of changes in the value of money, we must point out that we are not dealing with unavoidable concomitants and consequences, but that, on the contrary, factors operating on the side of the other goods are capable of cancelling or minimising the effect of factors operating on the side of money. Having regard to the fact that the special nature of the factors

operating on the side of money secures to the value of money a far greater degree of stability than can be expected in the case of most other objects, we can be certain, so long as the monetary system is not subjected to the most serious disturbances, that the effects which are produced by money on the exchange ratio and on the dynamic aspects of economic life will be driven into the background by the effects emanating from the "commodity side." The smaller the influence which money exercises and the less the course of economic life is affected by money, the more closely does money approach that ideal which is commonly described as the "stability in the value of money."

The above remarks have intentionally been taken almost unchanged from the earlier editions of this book, published before the War. At that time they were the result of theoretical considerations, of previous experiences, and of observations of conditions in certain more or less distant countries with disorganised monetary systems. In the meantime the German nation has learnt from personal experience what it means when the value of money falls almost to vanishing point. The events which we have witnessed and are still witnessing have confirmed in all essential respects the correctness of the theory developed above. The degree to which these events have shown the workings of the theory in the unprecedented misfortune of large sections of the nation, and in the breakdown of a great and hitherto flourishing economic, system, will be dealt with when we come (in Chap. X, para. 12 below) to treat of the actual developments in the value of money during the last few years.

¶ 8. Effects of Fluctuations in Rates of Exchange

Before, however, we can demonstrate by the unexampled events of the last few years the consequences of a depreciation of the value of money, we must first refer to a factor not yet taken into account, though it is of the greatest importance in regard to alterations in the exchange relations between money and goods.

The outline given above surveyed the monetary system and the economic life of a given area as a complete entity. In reality, however, each individual economic area of the world is interwoven by foreign trade, credit, and other relations into the general world economic complex. Only when the factors which determine changes in the exchange relations between money and goods are universal in direction and degree can they operate without affecting the factors which determine the relative values of the curriencies of individual countries. This is axiomatic. If, for example, when the gold standard was universal, there suddenly occurred a rise in the production of gold leading to a fall in its value, and thereby to a fall in the value of the currencies of the gold standard

countries, then all the gold standard countries were equally affected. Such a proceeding neither gave rise to nor rendered possible any serious disturbance in the reciprocal relations between the currencies of individual gold standard countries.

Even when the displacements in the primary factors are not universal they can affect the foreign exchanges, in so far as countries with similar normative currencies are concerned, solely within limits drawn by the common standard—that is, only within the margin set by the "gold-points." Nevertheless, we have here the possibility that the changes in such factors may be sufficiently great to make impossible the retention of the gold standard and thereby to disturb international exchanges.

If, however, it has happened that the common metallic basis of the currency has been lost, and the disturbances in the ratio of exchange between money and goods spring from factors which are not universal in their nature, but which have their origin in the special circumstances of the several States and economic systems, then it necessarily follows that the disturbances must also affect the rates of foreign exchange.

The simplest example as it has been developed, particularly by the English classical economists, is as follows:—

The finances of State A collapse. The financial administration of the State makes excessive calls on the central note-issuing bank, and the convertibility of the notes must, therefore, be suspended. The circulation of currency is increased by the issue of paper money in quantities in excess of the economic requirements of the country (inflation). The increase in the amount of currency issued is translated into a demand for goods and services, and accordingly leads to a rise in the level of prices and of wages. It thus leads to a depreciation of the currency—a depreciation which is at first only internal. But the discrepancy which thus arises between the level of home and that of world prices leads to a disturbance in the trade balance and in the balance of international indebtedness. The high prices and wages ruling at home favour importation of goods from countries where prices and wages have remained lower. Export to those countries becomes more difficult. The balance of trade, and thereby the balance of international indebtedness, thus become unfavourable. It becomes necessary to meet the increasingly unfavourable balance and the demand for foreign currencies rises. This drives upwards the rates for foreign exchange. The initial link of this chain of cause and effect is thus the "inflation" in the country itself. The final link is the rise in foreign rates of exchange and the depreciation of the native currency.

In numerous historical cases the course of events has been as outlined above. Cases can, however, be conceived—and in fact

have become actual in recent times—in which the course of development is different and may be even exactly the opposite, *i.e.* in which for some reason or reasons wholly independent of the internal monetary conditions of a State, international exchanges become disturbed, and in which this disturbance of the currency of the country, *i.e.* of the foreign value of the country's money, reacts strongly upon the internal exchange relations, *i.e.* on the value of the money at home. Before we illustrate, as will be done in Chap. X, para. 11, below, the latter type of case in the light of actual events in post-war days, we shall recapitulate here the theory regarding such cases as it was developed in the earlier editions of this work. We said there:

The effect of alterations in the ratio of exchange first shows itself in the prices of those commodities in regard to which the two countries are most dependent upon one another. If the exporter in the gold standard country desires to obtain for the goods to be disposed of in the paper standard country, the exchange of which has fallen, the same price in gold money as before, he finds it necessary to raise the prices demanded by him in paper money to an extent corresponding to the drop in the exchange. Again, if it is a question of a commodity exported by the country whose exchange is falling, the exporter in that country obtains for the same gold price a higher amount in the paper money of his country, and this fact must, of course, react on the home price of the commodity in question. As regards goods which both countries produce in competition with each other, the opposite is, to be sure, also conceivable, namely, the case in which the exporter in the gold standard country cannot raise his prices to the full extent necessary for him to obtain the same result in gold money, this fact then exercising a certain pressure on the home prices of the gold standard country. Or the exporter of the country with a falling exchange, in order to retain or extend his market, may content himself with a lower price in gold money, which price may still represent the same or even a higher amount for him in the paper money of his country, and by thus contenting himself with a lower price he depresses the price of the commodity in the gold standard country. Which of these two possibilities, or the extent to which either of them is realised, namely, a fall in prices in the country with a high exchange, or a rise in prices in the country with a falling exchange, depends largely on the relative economic importance of the two countries and on the conditions of competition in the world market. If the possible absorption of goods by the country with a silver or a paper currency represents only a small fraction of the consumption of the exporting gold standard country, or of absorption by the other gold standard countries; and if, furthermore, the exports of the

country with a silver or a paper currency constitute only a small fraction of the supply in the world market, then the effect of the exchange fluctuations on the prices of gold standard countries must be far less than the reaction which the variation in the exchange produces on the prices of the silver and paper standard countries. Moreover, a fall in the exchange of a silver or a paper standard country affects the price of its export commodities in the world market in a way which differs with the situation on the market. When demand exceeds supply there is no reason why the exporter in the country whose exchange is falling should be satisfied with lower gold prices. In fact, he will desire to take his full share of the favourable course of prices. When the situation on the market is, however, the reverse, he may find it necessary, in order to dispose of his goods, to take lower prices. The ultimate effect on the level of prices of the two currency areas must, however, depend, essentially, upon the area in which lies the cause of the exchange fluctuations. If, for example, by reason of a considerable rise in the production of silver the price of silver and with it the rate of the silver currencies falls, and consequently the exportable articles of the silver standard countries—the price remaining the same in silver money—can be obtained at a cheaper price in gold money; if, on that account, the exports of these goods and the imports of silver necessary for the payment of these exports take on larger proportions, then those conditions, which in no way affect the circulation of gold standard countries, lead to an increase in the circulation in the silver standard countries which, if only by reason of the increase having been caused by a rise in the demand for the exports of the silver standard country, tends to bring about a rise in price.

The rapidity with which an alteration in the relative level of prices, which correspond to the alteration in the exchanges, will extend to all goods will be the greater, the closer are the commercial relations between the two countries, and will be proportionately slower when the points of contact between both areas are few.

So long as complete equilibrium has not been established, the production of the country with a falling exchange enjoys a certain advantage in competition with the other country. Because of the fall in the exchange, and so long as the prices of factors of production and of wages have not risen correspondingly, the cost of production in native money represents smaller amounts in terms of gold money than heretofore. The home producer can, therefore, compete more successfully with the producer of gold standard countries. It has accordingly been asserted that a falling exchange operates for the country in question as a protective tariff against foreign imports and as a premium on its own exports (dumping).

To a certain extent this assertion is correct. But its truth is subject to the following reservations:—

An alteration in favour of the country with a falling exchange comes into operation only in regard to a section of the costs of production. In so far as the costs of production are not entirely composed of domestic money payments, but, as frequently happens in the case of agricultural wage-payments, may also be in kind; in so far as the means of production are obtained from countries with a gold standard and must be paid for at a higher price corresponding to the fall in the rates of exchange, as often happens in the case of machinery and of coal, the fall in the exchange has obviously no effect on the relation between the costs of production in the two countries. The same applies to the most important industrial raw materials, the cheapening of which, by reason of the depreciation of the currency of the producing country, is to the advantage also of the gold standard countries. Thus the depreciation of silver and the fall of the Indian exchanges could not operate to the disadvantage of the gold standard countries in so far as concerned that part of the costs of production of Indian spinners which was covered by raw cotton, any more than it could do so in regard to the part covered by machinery imported from Europe. Just as these latter had to be paid for at a higher price because of the fall in exchange, so also, if the price had remained the same in Indian money, Indian cotton could have been imported by the European spinners at a cheaper price in gold currency. Relevant calculations which have been made have shown that only about 10 per cent. of the costs of production of yarn of medium quality could conceivably have been affected by the depreciation of the Indian currency in favour of the Indian and to the disadvantage of European spinners.[1]

Moreover, the possible divergence in the costs of production is only temporary. It vanishes of itself as soon as the necessary equilibrium in the level of prices between the two countries has been established, on the basis of a new rate of exchange between the two currencies.

Even with these restrictions and reservations, the effect of the falling exchange, which has been compared to a protective tariff and to a premium on exports, cannot be regarded as an undoubted advantage. Firstly, opinions may differ even as to the advantages of a protective tariff and of an export premium, especially when these affect without differentiation the various import and export goods: the "protective tariff" affecting, *inter alia*, the means of production necessary to the country's own economic development, such as coal, iron, machinery, etc., and the "export premium"

[1] *Cf.* the author's *Aussenhandel und Valutaschwankungen* in Schmoller's *Jahrbuch*, vol. xxi, 2.

affecting, *inter alia*, the necessaries of life of the population and the raw materials of its industries. Moreover, as against the small and temporary advantages which may perhaps be reaped, serious disadvantages may accrue. The countries which are most liable to falling exchanges are those whose economic and financial strength is least developed. Such countries require for the opening up and exploitation of their resources the support of the capital of the more advanced gold standard countries. Unsettled currency conditions are always a great hindrance to the attraction of such capital. The capitalists of gold standard countries who invest their capital in such areas run the risk that the profits earned by their investments in terms of the fluctuating currency may depreciate in terms of gold money. In so far as they are not altogether frightened away by this risk, they must cover themselves against the possibility of loss by demanding higher rates of interest or larger dividends. It frequently happens that the financial administration of the State as well as private *entrepreneurs* in such countries find it necessary to attract capital by promising to pay interest and to repay capital in terms of gold currency. The country with the unstable exchange must then bear the whole risk, as for the future gold payments a larger amount of its currency will be required with each successive fall in its exchange. The difficulties in the way of the importation of capital which result from such conditions represent a handicap to the economic and financial development of countries with a fluctuating exchange, a handicap which is much more important than any temporary impetus which can possibly result from the fall in the exchange for isolated branches of production. This explains the fact that the countries which have themselves experienced the effects of a fluctuating exchange are deaf to the claims of the benefits of a depreciated currency, and are in fact ready to make considerable sacrifices in order to re-establish a fixed rate of exchange between their money and the money of gold standard countries.

Thus far we have followed the lines of previous editions of this book. Doubtless in the light of the experiences of the recent catastrophic depreciation of the German currency, the above remarks may appear colourless and anæmic. But the theory deducted from the earlier and much more modest fluctuations of silver and paper currencies has been confirmed in all essential respects by the events of the recent German collapse, even though the gigantic dimensions of this collapse would make the old truths appear as almost new, and even though the peculiar nature of the circumstances under which the depreciation of the German currency has taken place have made it possible to work out and to perfect the theory in greater detail.

CHAPTER X

CHANGES IN THE VALUE OF MONEY FROM 1850 TO THE PRESENT DAY

¶ 1. Wholesale Prices from 1850 up to the Outbreak of the War

IF we desire to survey the changes in the value of money from the middle of the nineteenth century, and the influence exercised during this period by the factors operating on the side of money on the general economic situation, we must first investigate the data which are to lead us to our conclusions.

As an important starting-point for investigations into the variations in the purchasing power of money we have the *wholesale prices of important commodities*, which we have found to be the easiest to ascertain with the greatest degree of certainty, even over a long period; such prices being expressed for purposes of comparison in "index numbers" (see above, Chap. IX, para. 4). For the earlier periods we have the index numbers worked out by Sauerbeck for England and by Soetbeer for Hamburg. For the period from 1847 to 1890, the last year for which statistics are given by Soetbeer, they are as follows:—

Index Numbers of Soetbeer and Sauerbeck

Year.	Soetbeer.	Sauerbeck.	Year.	Soetbeer.	Sauerbeck.
1847–50	100	81	1871	127·03	100
1851	100·21	75	1872	135·62	109
1852	100·69	78	1873	138·28	111
1853	113·69	95	1874	136·20	102
1854	121·25	102	1875	129·85	96
1855	124·23	101	1876	128·33	95
1856	123·27	101	1877	127·70	94
1857	130·11	105	1878	120·60	87
1858	113·52	91	1879	117·10	83
1859	116·34	94	1880	121·89	88
1860	120·98	99	1881	121·07	85
1861	118·10	98	1882	122·14	84
1862	122·65	101	1883	122·24	82
1863	125·49	103	1884	114·25	76
1864	129·28	105	1885	108·72	72
1865	122·63	101	1886	103·99	69
1866	125·85	102	1887	102·02	68
1867	124·44	100	1888	102·04	70
1868	121·99	99	1889	106·13	72
1869	123·38	98	1890	108·12	72
1870	122·87	96			

In order to complete the picture, we give below the course of wholesale prices in Germany, England, France, Sweden, and the United States of America for the years from 1860 to 1913 in a table worked out by the Imperial Statistical Office (Statistisches Reichsamt).

Movements of Wholesale Prices (Wholesale Index Numbers in Germany, England, France, Sweden, and the United States of America from 1860 to 1913)

(1861–1870 = 100.) [1]

Year.	Germany (*Stat. Reichsamt*).	England (Sauerbeck).	France (*Annuaire Statistique*).	Sweden (*Kommerskoll. Svensk Handelstid.*).	U.S.A. (*Dun's Review*).
1860	99	99	106	100	65
1861	100	98	104	98	58
1862	96	101	105	103	67
1863	94	103	105	108	98
1864	94	105	104	109	159
1865	96	101	97	104	110
1866	101	102	99	98	118
1867	110	100	97	97	107
1868	109	99	97	96	104
1869	103	98	95	94	94
1870	96	96	98	93	85
1871	103	100	101	96	86
1872	116	109	105	107	86
1873	125	111	105	115	81
1874	119	102	97	108	81
1875	110	96	95	103	77
1876	107	95	95	98	66
1877	109	94	96	100	62
1878	98	87	88	89	55
1879	89	83	86	88	55
1880	100	88	88	92	62
1881	96	85	86	90	64
1882	91	84	84	89	70
1883	90	82	81	86	61
1884	82	76	74	83	57
1885	78	72	73	79	52
1886	73	69	70	76	51
1887	73	68	68	73	53
1888	79	70	71	80	54
1889	87	72	74	80	51
1890	93	72	74	83	52
1891	99	72	72	83	55
1892	87	68	70	78	51
1893	81	68	69	75	51
1894	75	63	64	72	47
1895	73	62	62	71	46

[1] Vide *Wirtschaft und Statistik*, 2nd year, vol. iii, p. 31.

Movements of Wholesale Prices—continued

Year.	Germany (*Stat. Reichsamt*).	England (Sauerbeck).	France (*Annuaire Statistique*).	Sweden (*Kommerskoll. Svensk Handelstid.*).	U.S.A. (*Dun's Review*).
1896	74	61	60	72	42
1897	80	62	61	74	41
1898	85	64	63	77	44
1899	85	68	68	82	48
1900	91	75	73	85	52
1901	85	70	70	83	52
1902	84	69	68	82	58
1903	83	69	69	82	57
1904	87	70	68	83	55
1905	90	72	72	84	56
1906	92	77	76	89	60
1907	103	80	80	93	65
1908	97	73	74	89	61
1909	96	74	74	90	68
1910	94	78	79	92	68
1911	99	80	83	95	67
1912	112	85	87	99	69
1913	97	85	85	101	66

The above table shows first and foremost that in the five decades from 1860 almost up to the outbreak of the War the changes in the index numbers were confined within relatively narrow limits.

The annual averages of the index numbers fluctuated between the following limits:—

In the Years.	In Germany.	In England.	In France.	In Sweden.	In U.S.A.
1860–1869	94–109	98–105	106–95	109–94	58–159[1]
1870–1879	125– 89	111– 83	105–80	115–88	80– 55
1880–1889	100– 73	88– 68	88–68	92–73	70– 51
1890–1899	99– 73	72– 61	72–60	83–71	55– 41
1900–1909	83–103	69– 80	68–80	82–93	52– 68

It is further seen that the periodic wave movements of the index numbers in the several countries correspond to a remarkable extent. They coincide with the waves of economic booms and depressions, which, since the various national economic systems

[1] Period of the Boer War and of the American Civil War.

are so closely interwoven, had an international character. The periods of economic expansion in the years 1871–1873 and in the second half of the nineties, and again from 1903 to 1907 and in the last year before the War, appear in sharp contrast to the reactions which followed them.

If we consider the general curve, we find at first that from 1850 to 1873 there was a marked rise in the index numbers. In the following decades all statistics show that there was on the whole a downward reaction in wholesale prices, which reached their lowest point in the years 1895–1897. The reaction was by no means uniform and uninterrupted. The movement in the prices of the various types of commodities on the basis of which the index numbers are constructed shows, in fact, considerable deviations, and the decline of the final figures was from time to time interrupted by rises. From the second half of the nineties of the last century the movement was on the whole again upward.

¶ 2. Wholesale Prices and the Production of Gold from 1850 to 1873

The course of wholesale prices follows lines which are strikingly parallel to those of the developments in the production of gold. The period of the rise in wholesale prices from 1850 to 1873 coincides with the enormous rise in the output of gold consequent upon the discovery of the Californian and Australian goldfields. The period of the marked fall in wholesale prices from 1873 up to the second half of the nineties reminds us of the fact that gold production showed a falling-off from the end of the sixties onwards, a fall which reached its lowest point in the year 1883. The period of the fresh rise in the level of prices can be connected with the new and tremendous upward movement in the production of gold which commenced at the beginning of the nineties and continued almost uninterruptedly up to the outbreak of war. This coincidence in point of time might lead one to conclude that there was a causal connection, and the conclusion has in fact been drawn. The writings of economists on money matters in the fifties and sixties of the last century dealt fully with the question of the depreciation of gold and the resulting depreciation of gold currency as a consequence of the increased production of gold.

The developments of the eighties led writers to explain at length the problem of the "appreciation" of gold as being a consequence of the falling-off in gold production. When the nineteenth century was passing into the twentieth, after the production of gold had again begun to bound upwards and prices again began to rise, the question of the fall in the value of gold and of money again became topical.

Let us consider first the developments in the fifties and sixties. We must recall that a large part of the increased output of gold served the purpose of replacing in the circulation of a number of European States the very large quantities of silver, considerably exceeding the new output of that metal, which in those days were being drawn off by India (see above, p. 192). We must also take into consideration that the economic progress made possible in those days by railways and steamships, and in particular the accelerated development of world trade, had necessarily increased the world demand for money. But these counteracting factors, operating on the side of the demand for money, were not sufficiently powerful fully to counterbalance the effect on the purchasing power of money of the sudden increase, due to the rise in the output of gold—that is, in the supply of the most important money substance. Although the circumstances existing in connection with wholesale commodities, the technical advances in production and transport, as well as the more efficient organisation of production, must of themselves, all other things being equal, have resulted in a fall of commodity prices, at least on the European markets, nevertheless a considerable and unmistakable rise in wholesale prices took place, a rise which was only once—after the crisis of 1857—interrupted by a fairly severe set-back. The development in wholesale prices was also in conformity with the development in retail prices, in ground and building rents, in prices of land, and in wages. In fact, the fall in the purchasing power of money was, so far as this can be established by the incomplete statistical data available and by general observation, even more noticeable in these latter prices, etc., than it was in the sphere of wholesale prices.

For the fifties and sixties of the last century we are thus really justified in speaking of a "fall in the value of money" in the sense defined above—that is to say, the exchange relations between money on the one hand, and goods, utilities, and services on the other, shifted to the disadvantage of money, and the alteration was in fact sensibly influenced by a factor operating on the side of money, namely, the tremendous rise in the output of gold.[1]

¶ 3. Gold Production and the Value of Money from 1873 to 1895

The interplay of circumstances in the following periods is less simple. We have first a fall in the level of wholesale prices from

[1] Why the rise in gold production must also have affected the value of silver, and, therefore, the value of the money of silver standard countries, has been shown above on p. 134.

1873 up to the second half of the nineties, which certainly coincided with a relatively acute fall in the production of gold. A number of economists and writers on the subject of money, some of them of the first rank,[1] were inclined to assume a "rise in value" of the money of gold standard countries, basing their arguments on the development of the price level. They thought it could be shown with certainty that the factors which brought about the fall in wholesale prices, the averages of which were considered identical with the "general level of prices" even more than they are to-day, operated on the side of money. They argued that whilst up to the seventies in European countries gold and silver had served side by side as money substances, the demand for money must, as silver continued to be demonetised, perforce have become more and more exclusively directed towards gold, the new supplies of which were falling off, and in this way the supplies of money of gold standard countries must have become so contracted as to lead to dearer gold and dearer money, which would of itself have sufficiently explained the general fall in prices.

At first sight such a view would appear to be confirmed by the fact that the enormous rise in the production of gold which marked the beginning of the nineties of last century synchronised with the arresting of the downward tendency of wholesale prices. This is, however, a forced kind of proof. If we admit to start with that the contraction in the supply of money is a consequence of silver being shut out from the mints of a number of important States, we do not by such admission in any way prove that money must necessarily become dearer. For even though in both decades from 1850 to 1870 the overabundant supply of money had led, as we have seen, to a considerable fall in the value of money, then a contraction in the supply, such as was brought about by the smaller production of gold, would not necessarily have resulted in an increase in money value, but might indeed have had no more effect than to check the fall in the value of money, and to re-establish stability in that value.

Furthermore, we must observe that the contraction in the supply of money of the gold standard countries, which took place from the beginning of the seventies of last century, was by no means as important as it might at first sight appear. It is incorrect to say that in the countries which in those days went over to the gold standard, gold alone had to perform the functions previously fulfilled by gold and silver together. As has been shown in the historical part, silver money was discarded only to a negligible

[1] *Cf.* in particular Goschen, "On the Probable Results of an Increase in the Purchasing Power of Gold" (1885); Giffen, "Trade Depression and Low Prices" (1885).

extent as compared with the stocks of silver currency, which were indeed retained in a very large measure even in the new gold standard countries, and as compared with the mintages of silver which were undertaken for the United States of America and for European countries right up to the nineties. The supply of currency available in the countries of Europe therefore did not contract, but the rate of increase was simply retarded. To obtain an idea of the effect of this retardation we must bear in mind that the enormous production of gold of the years 1850–1870 supplied the means for a great territorial expansion in the use of gold currency, and thereby set free from European circulation quantities of silver which at that time were shipped to India. The booming production of gold in the two decades referred to was thus sufficient to meet all the extraordinary demand concentrated at one point of time. The gold circulation once created could, of course, be maintained and increased in accordance with the requirements of trade by means of a substantially smaller production of new metal.

Finally, the intensity of exploitation of money was increased by methods and arrangements of payment built up on more widespread credit. This development happened from the seventies onwards to make astounding leaps forward. We need only refer to the development of the deposit banks in England and of the transfer business in Germany. The perfection of the arrangements for payment would in itself have sufficed to balance the effects of a considerable rise in the demand for and of a substantial contraction in the supply of money.

The course of events in regard to the production of precious metals and the condition of the currencies during the period when the index numbers were showing a definite decline is, therefore, not in itself such as to furnish an immediate answer to the question whether the fall of the wholesale prices in that period was caused wholly or in part by factors operating on the side of money.

On the other hand, it can be shown that in the case of all the large commodity groups, the prices of which fell more or less considerably from 1870 to 1895–96, there were important factors in operation outside the sphere of money, which not only explain the fall in prices, but would make such fall appear to have been a necessary consequence, even if the factors operating on the side of money had remained unaltered. The capital and labour necessary for the production of most important wholesale commodities showed a considerable falling-off at that time. The principal causes of this were as follows:—

Extraordinary progress registered in the technical processes of production of whole series of commodities. Machines and tools

were perfected, the raw materials and auxiliary products of production were exploited to a larger extent, and new and cheaper methods of production were employed; and all this led to a reduction in the cost of production which, although it varied in the several groups of commodities, was on the whole considerable. This applied not only to industry, but also to agriculture and to mining. In mining and in industry there was further the reduction of charges due to large-scale working, which increased the productivity of the industrial organisations.

Furthermore, improvements of transport considerably cheapened the importation of certain types of commodities from places far distant from the European markets. In sea transport wooden ships were more and more replaced by more efficient types of iron ships, and this led to a reduction in freights, which in itself reduced the price of some types of goods. Above all, however, the development of the railway system in the United States, Argentine, Russia, India, etc., opened up large areas in which agricultural production in particular, but also the production of minerals, could be carried on much more cheaply than in the areas of production hitherto available for the supply of the world's markets.

It would be difficult to point to a commodity of wholesale trade of any considerable importance the costs of which did not, during the period of the fall in the "general level of prices," experience a marked reduction by reason of one or more of the factors just mentioned. That being so, then, other things remaining the same, it is absolutely certain that a considerable fall in prices of these commodities could not but have occurred. Of course, as the effects of the easier methods of production and transport on prices cannot be calculated exactly, any more than can the effects of the changes referred to above on the side of money, the question still remains undecided whether the entire fall in the prices of these commodities is to be taken as due to the reduction in the costs of obtaining them, or whether it was not, at least in part, brought about by monetary causes.

But the behaviour of money in connection with other goods mitigates against the latter possibility. Retail prices stood at that period in direct contrast to the downward tendency of the wholesale prices of the most important raw materials and of semi-manufactured articles, and it was observed that living did not become cheaper but dearer. The retail prices of finished articles were not cheapened, at any rate, not to the same extent as were those of the staple articles of wholesale trade.

Prices of land, and rents for land and buildings, also took a substantially different course from that of wholesale prices in the civilised countries of Europe. The price of agricultural land and

the rent paid for it in Germany rose very considerably from the forties of the nineteenth century up to the eighties and nineties. In the nineties, competition by the newly opened-up oversea areas brought about a set-back on the wheat market here and there. This set-back was, however, soon counterbalanced by a fresh rise. The prices and rents of land in towns continued to rise almost without interruption.

Wages took a similar course, in contrast with wholesale prices. It has been generally observed, and this observation has been strengthened by numerous statistical investigations, that wages in the civilised States of Europe, particularly in Germany, underwent a rise, during the fall in the principal and most important wholesale prices, quite apart from the indirect rise in wages brought about by the duties imposed upon German employers in connection with workmen's insurance, etc. Thus, as the wholesale prices fell, wages rose, a fact which precludes our assuming that the decisive factor in the course of wholesale prices was a contraction of the supply of money.

Finally, the developments in discount rates must be added. The tendency of these has been on the whole downward, from the beginning of the seventies to the middle of the nineties of last century. Not until the second half of the nineties was the tendency in the discount rates reversed.

During the period in question, therefore, the purchasing power of money was only decisively lessened as far as wholesale prices of staple articles were concerned. In regard to retail prices of finished articles, no reduction can be determined with similar certainty, whilst the purchasing power of money in regard to land and its utilities even diminished, and in the case of the personal services of labour it even diminished considerably. The latter point is particularly important. The workman, when prices fall, can continue to obtain an equal or even a higher reward over a long period for the goods produced by him only if by technical improvements in production he can produce more goods for the same amount of capital and exertion—that is, when the fall in the price of the products is counterbalanced by a corresponding increase of production, the same amount of labour and capital being used. Should, however, the fall in the prices of products be due to causes which operate on the side of money, then the only course open to the employer is either to reduce wages, in conformity with the rise in the value of money, or to work at a loss and ultimately to close down. Rising wages whilst commodity prices fall make it, therefore, appear to be out of the question that a fall in commodity prices could be caused by changes on the side of money.

For the period of falling wholesale prices from 1873 to the

middle of the nineties nothing can be proved as to any *decisive* influence of the factors operative on the side of money.

¶ 4. Gold Production and the Value of Money from 1895 to 1914

When from the second half of the nineties onwards the wholesale commodity prices in all civilised countries of Europe began again to move upwards, attention was soon called to the enormously increasing output of gold, beginning early in the nineties, as the cause of the rise.

From 1871 to 1880 gold to the value of 4830 million gold marks was produced, and in the following decade to the value of 4030 millions. From 1891 to 1900 the gold output rose to 8820 millions, and from 1901 to 1910 to 15,870 million gold marks. The monetary stock of gold of the world increased in the twenty years 1890–1910 from about 15 to more than 30 milliard gold marks. The wholesale index number rose in Germany from 73 in the year 1895 to 112 in the year 1912, and in England from 62 to 85. The rise in the level of wholesale prices thus amounted during that time to 53 per cent. in Germany and to 37 per cent. in England.

Nevertheless, we must beware of assuming a direct connection between the increase in the world's monetary stock of gold and the movement of prices of wholesale commodities. Such a direct connection does not exist, if only because, simultaneously with the rise in the production of gold, the area of employment of gold money was extraordinarily extended. On p. 198 *et inf.* above a sketch was given of the transition to the gold standard of large and important economic areas, beginning in the last years of the nineteenth century. The greater part of the new gold, except that taken up by the increasing industrial demand, was attracted to the states which were going over to the gold standard, or to those which were engaged in consolidating their gold standard. These states were Russia, Austria, the United States of America, India, Japan, Mexico, and the Argentine. The effect of the increased production of gold was, therefore, not only a corresponding increase in the circulation of gold in the gold standard countries as they existed at the beginning of this period, but also the evolution of the gold standard into a world standard. The influence of the new gold on the value of gold and on the value of money in the gold standard countries was considerably reduced by the expansion of the area of the monetary employment of gold,[1] just as in the fifties and sixties of the nineteenth century the effects

[1] See "Die Wirkungen der Gesteigerten Goldproduktion" in the author's *Studien über Geld- und Bankwesen*, 1900, p. 248 *et inf.*

of the Californian and Australian discoveries of gold on its value and on that of metallic money were for the most part nullified by the extension of the use of gold money in European countries. However, in the period from the middle of the nineties of the last century up to the War, particularly in the latter half of that period, there was an increase in the gold circulation of the old gold standard countries, a circulation considerably greater than that of the previous fifteen years.

It is possible, therefore, that for this period the increased output of gold may have had an effect on the development of wholesale prices, especially as the development in the ratio of value between the money of gold standard countries and the other goods as expressed in retail prices, in the prices of land, in the rent of land and buildings, and in wages and salaries, is proof that a diminution in the value of money had taken place.

At the same time it must not be overlooked that the period from the middle of the nineties up to the War differed substantially in its general character from the previous period. From 1873 to 1895, periods of economic depression and stagnation predominated; the unmistakable economic progress was punctuated by long intervals of reaction.

From the middle of the nineties, however, we observe a tremendous upward movement far exceeding all previous developments of this kind.

Although from time to time crises and reactions were experienced, these reactions were, in contrast with the preceding period, only of short duration and were invariably rapidly overtaken by fresh upward movements. The motive force of this world-wide tendency was the revolution in the technical processes of industry and transport caused by the utilisation of electricity.[1]

The trade and industry of the most important civilised countries were recast and developed by the electro-technical processes, and this development, compressed into a short period of time, produced an unprecedented demand for materials and labour. In the commodity and labour markets the strongest forces operated to produce a rise in prices and wages in such a measure as might have sufficed to explain the changes in the exchange relations between money and other objects. There is, therefore, no absolute necessity to take into account the changes brought about by the events in gold production in order to explain the rise in prices and wages. Still less is it necessary to seek the cause of the slow rate of economic development from 1873 to 1895 in a shortage in the world's supply of gold, or the cause of the extremely rapid rate, far surpassing anything previously imagined,

[1] See the author's biography of Georg von Siemens in vol. ii, 1923, chaps iii and iv, of *Der finanzielle Aufbau der Deutschen Elektrizitäts Industrie.*

of the upward movement in the following decades, solely in the tremendous rise in gold production.

At all events it remains an open question whether the upward movement of that time could have taken on such dimensions if the demand for money called forth by the general economic progress had come up against the solid barrier of an insufficient supply. It was doubtless a fortunate coincidence that the growing demand for money during the period of boom was fairly easily satisfied by the growing output of gold. How far stagnation or a low rate of increase in the production of gold would have prevented or limited the geographical expansion of gold currency; how far it would have been detrimental to the provisioning of old gold standard countries with money; how far, by a still greater exploitation of the elasticity of the methods of payment based on credit, equilibrium could have been reached—all these are questions relating to a past which never existed, questions which can be answered only with a *non liquet*. The analytical problem of the value of money is sufficiently complicated and difficult, even when it concerns itself with no more than actual events. It becomes insoluble when considered on the basis of events which have never happened.

¶ 5. Commodity Prices, Discount Rates, and Fluctuations of the Trade Cycle

On the other hand, it is possible to throw still more light on the value of money in the economic development of the last decades before the War, by investigating the changes of prices more closely, not only in their general but in their detailed tendencies.

From a study of the statistical table of wholesale prices given on pages 554 to 556, no student of economic history can fail to recognise the fact that the fluctuations in the index numbers coincide absolutely with the rise and fall of the trade cycle. The years of good trade and of increasing enterprise show higher index numbers. Such are the periods 1852–1857, 1870–1873, 1879–1883, 1887–1890, 1896–1900, 1904–1907, and 1910–1912. The times of downward tendency show low index numbers, as will be seen from the period after 1857, the years 1874–1879, 1884–1887, 1892–1896, 1901–1903, and 1908 and 1909. The change in the circumstances themselves is based on the structure of our economic scheme of things. It is due to the fact that demand and supply are scarcely ever in a state of equilibrium, but tend towards equilibrium through their effects on prices and on profits. The periodic fluctuations in prices and in rates of interest are nothing more than an integral part of these great economic movements.

Now, it would in itself be conceivable that the up-and-down

movement of the trade cycle should be dominated, or at least strongly influenced, by changes operating on the side of money. In fact, when serious disturbances in monetary systems take place, this effect—as has been discussed above in connection with the concomitants of changes in the value of money and the course of events since the outbreak of war—is in every way probable. If, however, we look at the actual developments of the last decades before the War, during which most countries of the world enjoyed a well-ordered monetary organisation, the changes in the sphere of monetary systems show no kind of connection with the periodicity of the trade cycle. The depression which followed the crisis of 1873 reached its end in the year 1879, which was just the time when gold production registered its greatest falling-off and the supply of gold for Europe was particularly unfavourable in view of exceptionally large imports of gold into the United States of America and into India.[1] Then in the year 1883 another depression occurred, although the production of gold, and especially the supply of gold to Europe, were at that time favourable. During the period of depression from 1891 to 1895 the European gold standard countries experienced an influx of gold of a magnitude which had hitherto scarcely ever been registered. When events took a turn in 1895 there occurred at the same time a considerable increase in the production of gold, but, as has been shown above, by far the largest part of the new gold was absorbed by the States which were going over to the gold standard, and by those which were consolidating their monetary system on the basis of the gold standard, namely, the Latin Union, Russia, Austria-Hungary, India, and Japan. Neither can the reaction which commenced in the year 1900 be explained by any factors operating on the side of money. The set-back in the production of gold caused by the Boer War was not of any decisive importance, although it did in fact intensify the acute shortage of money which occurred towards the end of 1899. At all events, in so far as concerns the reaction, equally intense, and with similar concomitant phenomena of the year 1907, there is a total absence of the factor of a fall in the production of gold, as in fact the output of gold reached record figures in those years.[2]

[1] *Cf.* above, p. 178 *et inf.*

[2] It is impossible within the confines of this book to discuss in detail and to controvert the theory of Sombart, diametrically opposed to the above, which sees the cause of every economic boom of importance in a rise in the production of gold. We must content ourselves with the above assessment of the importance of that factor which Sombart regards as the only vital one. Over and above this, we can only refer the reader to Sombart's article in vol. cxiii of the *Schriften des Vereins für Sozialpolitik*, and to the author's article "Der deutsche Geldmarkt 1895 bis 1902," in vol. cx of the same.

Above all, a comparison of the course of rates of interest with that of commodity prices shows that any explanation of the cyclical movement of trade and of the periodic fluctuation of prices based on monetary changes is quite out of the question for the period under consideration.

We have established above that in our modern monetary organisation a displacement in the exchange relation which has its origin in money must show itself first in the rates of interest for short-term credit. Falling prices, attributable to a rise in the value of money, would have to be accompanied by rising discount rates. Rising prices, attributable to a too abundant supply of money, and accordingly indicating a fall in the value of money, would necessarily be accompanied by falling rates of discount. But a comparison of the index numbers and the discount rates for the period from 1870 up to the Great War, shows that although there is a certain connection between them, yet this connection happens to be diametrically opposed to that which would follow if we made money the starting-point of changes in prices and discounts. Rises in commodity prices are throughout concurrent also with rising rates of discount. The great boom which set in after the War of 1870 brought with it, in addition to enormous rises in prices, rising rates of discount. The reaction in prices which occurred after the crisis of 1873 brought with it a considerable reduction, and the improvement in prices from 1879 onwards resulted in a fresh rise in the rates of discount. During the economic depression and the lowest level of prices reached in the period 1883 to 1887–88, we observe a low rate of discount, a state of affairs which gave way to a fresh rise, with the change in economic circumstances towards the end of the eighties. The first half of the nineties brought with it, simultaneously with the lowest level of index numbers registered in the nineteenth century, the greatest degree ever known in the fluidity of money and the lowest level ever reached by discount rates. In Berlin the average market-rate of discount of the year 1894 was 1·74 per cent. In London during the year 1895 an average market-rate of discount was recorded of only ·81 per cent. The period of boom which followed, and lasted up to the year 1900, brought with it, simultaneously with a rise in the leading wholesale prices, an exceptional rise in the rates of discount. In Germany the Reichsbank found it necessary in the last days of the year 1899 to raise its rate of discount to 7 per cent. The market-rate of discount at the time exceeded 6 per cent. both in Berlin and in London. The reaction which began in the year 1900 brought with it, in addition to falling prices, an easing of the money market and falling rates of interest. The same interplay of events was repeated in the first decade of the twentieth century. The new economic revival,

from 1904 to 1907, brought with rising prices a rise in the rates of discount also, which even surpassed that of the years 1899–1900. The rate of the Reichsbank went up to 7½ per cent. Similarly, the economic reaction of the year 1908 brought a sharp fall both in prices and in discounts. Finally, the rising tendency in economic conditions of the years 1912 and 1913 was accompanied by a fresh rise in the rates of discount.

Monetary factors as such cannot explain this parallel course of wholesale prices and rates of interest for short-term credit. In fact, if an attempt were made at such an explanation we should find ourselves faced by an irreconcilable series of facts. On the other hand, this parallel course is not only explicable, but appears as an absolutely necessary consequence, as soon as we leave on one side money as the driving force in the movements of prices and discounts, and take as our point of departure the factors which operate on the side of goods. If the oscillation of the large waves of economic movement be taken as being conditioned by changes in the relation between production and demand; if increasing and insufficiently covered demand raises prices and wages; and if, then, production expands and transactions multiply in number because of the higher prices and profits, a greater call upon the money market necessarily ensues. We have already, when dealing with the fluctuations in the demand for money, pointed to this effect of higher prices and increased turnover. The individual *entrepreneur*, when faced with larger turnover and higher prices, seeks to obtain assistance by a greater recourse to credit, particularly by drawing or having drawn bills of exchange for larger amounts upon himself, which when discounted tend to raise the rate of discount. If, in the opposite case, the production of goods exceeds what the market can absorb, and if in consequence there is a reaction in prices and profits, a paralysis of enterprise, a contraction of turnover, and a reduction of wages, then a diminution in the calls upon the available supply of money ensues followed by reductions in the rates of interest for short-term credit.

Regarded in this light, rising rates of discount appear as a consequence of rising prices and an increasing turnover, and low rates of discount as a consequence of falling prices and a falling turnover.

But we have established, when considering the concomitants of changes in the value of money, a reversed causal nexus, viz. that the rise in rates of discount, based on changes in the supply of and in the demand for money, exercises a pressure on prices and turnover, whereas a reduction in the rates of discount tends, on the other hand, to bring about a rise in prices and turnover. We thus have a kind of reciprocity between prices and turnover, on the one hand, and discount rates on the other, a reciprocity in

which effect reacts on cause in a modifying manner. In itself each of the two factors can be either the determining cause, or simply the modifying effect. The rise in prices and the increase of turnover may be the cause of the rise in rates of discount, whilst the latter may simply react in a modifying manner upon prices and turnover; or else the rise in rates of discount may be the cause of the fall in prices and turnover, and this fall may merely react restrictively on the rise in rates of discount. In the former case, the impetus and driving force of the developments must lie on the side of the goods. The latter case occurs when the impetus and the driving force proceed from the side of money. The more neutral and indifferent is the behaviour of money in these processes, the more clearly does the dependence of the rates of discount on prices and turnover appear. For a rise in discounts caused by a rise in prices cannot be explained by money becoming dearer, as dearer money must find its expression in falling prices; and a low rate of discount caused by falling prices cannot be deduced from a fall in the value of money, which must necessarily correspond to rising prices. So long as, in the actual trend of events, the movement in rates of discount is dominated to the extent to which it was in the last decades before the War, by the trend of prices and the trade cycle, it is at any time possible for those who desire to prove the existence of dear money to adduce in support of their argument falling prices or rising rates of discount. But, on the other hand, in so far as falling prices are concerned, we can always point to the simultaneous reduction in the rates of discount, and in regard to rises in rates of discount we can always point to the simultaneous increase in prices as a proof of the non-existence of a shortage and consequent dearness of money. Actually, the regular coincidence of rises in discounts and prices, on the one hand, and of falls in prices and discounts on the other, proves nothing more than that the influence of money, both on the movement of prices as well as on the fluctuations of discount rates, takes a secondary place as compared with the effect produced by general economic conditions and movements: and that, therefore, the factors operative on the side of money act both on the movement of prices as well as on the changes of discount rates only in a modifying and therefore in a latent manner, but that they cannot be disentangled in any decisive way.

By these reactive and modifying influences on large-scale economic movements, money acts as a regulator of the periodic oscillations of economic life. When conditions show an upward trend with enhanced prices and turnover, which result in a more intensive use of the available supply of money, and thereby in a tightening of discount rates; and when, furthermore, the higher rates of discount retard the rise in prices and the expansion

of undertakings, then this reaction, which proceeds from money, constitutes a safety-valve against the dangers of speculative excesses in production and in trade, and a corrective of the depression which inevitably succeeds an exaggerated exploitation of favourable economic conditions. When, on the other hand, in the event of a general depression, the rate of interest for short-term credit is reduced, then the lower rate makes it easier to overcome the difficulties of the period and encourages the revival of economic life and of the spirit of enterprise.

¶ 6. Wholesale Prices during the War and in the Post-War Years

The War, and the period which followed the War, put everything in the sphere of monetary value out of joint, both in the belligerent countries and in the neutral States, in the countries with a disorganised monetary system as well as in the United States of America, the only State in the world which was able to maintain the gold standard.

A statistical survey of the development of wholesale prices in some of the most important countries may be of use here.

International Wholesale Index Numbers

Annual Averages, 1913–1922 (1913 = 100)

	Germany (*Stat. R.-A.*).	England (*Economist*).	France (*Stat. Gén*).	Netherlands (*Ctr. B. f. St.*).	Sweden (*Sv. Hand.*).	U.S.A. (*Bradstreet*).	Japan (Bank of Japan).
1913	100	100	100	100	100	100	100
1914	106	99	102	105	116	97	96
1915	142	123	140	145	145	107	97
1916	153	160	187	222	185	128	117
1917	179	204	261	286	244	170	149
1918	217	225	339	392	339	203	146
1919	415	235	356	287	331	203	240
1920	1,486	283	509	281	347	197	258
1921	1,911	181	345	181	211	122	201
1922	34,200	159	327	160	162	134	146

The above table shows, first, the striking fact that everywhere—in the "victorious" as well as in the neutral and defeated countries—the maximum point of wholesale prices was not reached during, but only after the War.

International Wholesale Index Numbers
Monthly Averages, 1920–1922 (1913=100)

	Germany.	England.	France.	Holland.	Sweden.	U.S.A.	Japan.
1920.							
January .	1,256	289	487	287	319	227	301
February .	1,685	303	522	280	342	226	313
March .	1,709	310	555	283	354	225	322
April .	1,567	306	588	289	354	225	300
May . .	1,508	305	550	292	361	216	248
June. .	1,382	291	493	293	366	210	255
July . .	1,367	293	496	297	363	204	240
August .	1,450	288	501	288	365	195	235
September.	1,498	284	526	287	362	184	231
October .	1,466	267	502	283	346	170	220
November	1,509	245	461	260	331	148	221
December .	1,440	220	435	233	299	138	206
1921.							
January .	1,439	209	407	213	267	134	201
February .	1,376	192	377	197	250	129	195
March .	1,338	189	360	188	237	124	191
April .	1,326	183	347	176	229	118	190
May . .	1,308	183	329	182	218	115	191
June. .	1,366	179	325	183	218	117	192
July . .	1,428	178	330	176	211	120	197
August .	1,917	179	331	180	198	120	199
September.	2,067	183	344	180	182	122	207
October .	2,460	170	331	169	175	123	219
November	3,467	166	334	165	174	123	214
December .	3,418	162	325	165	172	124	210
1922.							
January .	3,665	159	314	161	170	124	206
February .	4,103	158	306	162	166	126	204
March .	5,433	160	307	161	164	125	201
April .	6,355	159	314	161	165	127	198
May . .	6,458	162	317	165	164	129	194
June. .	7,030	163	325	167	164	131	197
July . .	10,059	163	325	162	165	131	201
August .	19,200	158	331	155	163	131	195
September.	28,700	156	329	153	158	136	193
October .	56,600	158	337	156	155	145	191
November	115,100	159	352	158	154	150	188
December .	147,500	158	362	158	155	149	183
1923.							
January .	278,500	161	387	159	156	149	184
February .	558,500	164	422	..	158	151	..

For the United States of America we find the maximum in January 1920, the figure being 227; for Japan in March 1920, 322; for England in the same month, 310; for France in April

588; for Sweden in June 1920, 366; and for the Netherlands in July 1920, 297. Then the level of wholesale prices began to fall in all these countries. In the United States of America the lowest point was already reached in May 1921 with a figure of 115, and the year 1922 brought, particularly in the second half, a rise to 150 in November. England, the Netherlands, and Sweden do not reach the bottom of the trough until the second half of the year 1922, which year is remarkable for the small changes in the index numbers which took place in these countries. England registered 156 and Holland 153 in September, and Sweden 154 in November. Japan reached the minimum with 183 in December 1922. On the other hand, France, whose wholesale index number had reached 306 in February 1922, saw the level of prices rise again up to 362 in December, and to 422 in February 1923.

The course of development was quite different in those States to which the so-called peace brought neither peace nor reconstruction, but only disturbance and disorganisation.

In Germany, in particular, wholesale prices developed as follows:—

During the War the economic policy of Germany was successful (in spite of the blockade and the relative depreciation of the German currency, which made things more difficult for her) in keeping wholesale prices at a lower level than in the other belligerent countries, lower even than in most neutral States. In the year 1917 the German wholesale index number stood at 179, the English number at 204, the French at 261, the Swedish at 244, and the Dutch at 286. The American figure of 170 was only slightly lower than that of Germany. The only substantially lower number was the Japanese of 149. Even the year 1918, with its sad ending for Germany, made no change in this respect. When some day German economic policy during the War is more justly estimated than it is at present, under the pressure of defeat and of a bungled peace, this noteworthy fact will not be overlooked.

After the War, whilst in the "allied and associated countries" and in the neutral States the upward tendency of prices at first slowed down and then became reversed, there was in Germany a most phenomenal climb in prices. Already in the year 1919 the average index number was 415—that is, more than 90 per cent. higher than that of the previous year. In March 1920, not quite a year and a half after the Armistice, the average number was 1709. This represented a level nearly ten times as high as the average level of prices of the War year 1917. There was then a drop to 1367 in July 1920, followed by a year of relative stability. The index number of June 1921 was 1366. Then, however, a continually accelerating rise took place, until in

February 1923 the index number reached a figure of 558,470, and was thus more than 400 times the figure of June 1921.

¶ 7. The Relation of Prices, Wages, and Currencies in Some Important Countries

The main outline of the developments in *retail prices* and in the *cost of living, wages and salaries*, calculated by the aid of retail prices, conformed with that of wholesale prices. It is not possible to collate in this book all the extremely varied material for the several countries, however interesting the conclusions to be drawn therefrom in regard to the problem of money value might be. For an exact study of the consequences and concomitants of great changes in the sphere of money, not only of "inflation" and of "depreciation of currency," but also of "deflation" and of "appreciation of money," the events in the various countries during the War and post-war years open a wide field of inquiry so far left practically uncultivated.

The parallel character of the course of prices and wages on the one hand and inflation and deflation on the other is unmistakable in general outline. The countries which succeeded in the year 1920 in arresting the tendency of their paper circulation to multiply, and which managed to adopt a policy of contracting their circulation, were also able to reduce the level of their prices and wages. On the other hand, those countries in which the flood of paper money continued to swell, found themselves faced with a further rise in prices and wages. It is, moreover, obvious that there exists a certain, though only general, quantitative agreement between the degree of inflation or deflation on the one hand and the degree of rise or fall of prices and wages on the other.

But the relation between the currencies of individual countries also shows an unmistakable connection with the level of prices. Taking December 1922 as our basis, we find the following connection, using the rate of exchange for the dollar and the American level of prices as the standard.

The London rate of exchange on New York stood in the middle of December at 4·6337 dollars for a pound sterling. This meant that, measured by the gold par of exchange, the dollar was 4·8 per cent. above its normal value. The English wholesale index number of December 1922, which stood at a figure of 158, was 6 per cent. higher than the American figure of 149.

The American rates of exchange in Sweden and in the Netherlands stood approximately at gold parity. The wholesale prices in Sweden were, with a figure of 155, 4 per cent. higher than in the United States, and in the Netherlands, with a figure of 158, they were 6 per cent. higher.

The deviations in the index numbers of those countries which

had succeeded in re-establishing an approximate parity between their currencies thus remained within remarkably narrow limits. They were no greater than the deviations which even in peace times had always been occurring.

We can take France as the type of country with a moderate depreciation of the currency. The rate of exchange on New York stood in the middle of December 1922 at 14·06 francs for one dollar. The dollar was therefore 2·71 times higher than its peace time par of exchange. The French wholesale index number stood at 362 and was 2·43 times the American number. Here too, therefore, there was agreement between the figures.

Considerably greater was the disparity between the German-American rates of exchange and the relation between German and American prices. In the middle of December 1922 the dollar was quoted in Berlin at about 8000 marks, *i.e.* nearly 2000 times its pre-war price. On the other hand, the German wholesale index number, with the figure of 147,500, was not quite 1000 times as high as the American number. The explanation is not difficult to find. The adjustment of the situation to the catastrophic fall in the German currency which had gone on from October was at first only partial. This becomes clear if we analyse the general index number into numbers relating to home products and into those relating to imported goods. The index number for the former was, taking the average for December, 128,330, and that for the latter had already reached the figure of 243,230, being 1630 times the American general index number.

It is in the nature of things that the prices of wholesale commodities which are also the staple articles of world trade should show the greatest tendency to adjust themselves to alterations in rates of exchange. Retail prices, wages and salaries, and also the prices of land, rents, and the values of industrial and commercial undertakings, depend to a larger degree on the special circumstances of individual countries, and accordingly show in their relation between country and country far greater deviations from the relation for the time being of the rates of exchange than do wholesale prices.

¶ 8. Germany—Wholesale Prices and the Cost of Living

The movement of the wholesale index numbers, analysed into separate groups for imported goods and for home products, as well as the movement of those factors which are in a greater measure dependent on local conditions, but are, together with wholesale prices, of essential importance both in the statistical and in the analytical problem of the value of money, are shown in the table on p. 575, which gives figures for Germany for at least the last three years for which exact data have been worked out.

	Wholesale Index Numbers.			Cost of Living.	
	Imports.	Exports.	Total.	Foodstuffs.	Foodstuffs, Clothing, Rents, Heating and Lighting.
	(1913=1.)			(1913/14=1.)	
1920.					
January .	27·3	9·6	12·6	..	..
February .	40·6	12·1	16·9	9·5	8·5
March .	40·1	12·5	17·1	11·1	9·6
April. .	34·4	11·9	15·7	12·3	10·4
May . .	25·8	12·9	15·1	13·2	11·0
June .	21·2	12·4	13·8	12·8	10·8
July . .	19·0	12·6	13·7	12·7	10·7
August .	20·4	13·3	14·5	11·7	10·2
September	22·3	13·5	15·0	11·7	10·2
October .	23·3	12·9	14·7	12·7	10·7
November .	23·6	13·4	15·1	13·4	11·2
December .	20·2	13·2	14·4	14·3	11·6
1921.					
January .	18·2	13·6	14·4	14·2	11·8
February .	16·6	13·2	13·8	13·6	11·5
March .	16·2	12·8	13·4	13·5	11·4
April. .	15·6	12·8	13·3	13·3	11·3
May . .	15·2	12·7	13·1	13·2	11·2
June .	16·0	13·2	13·7	13·7	11·7
July . .	17·2	13·7	14·3	14·9	12·5
August .	19·4	19·1	19·2	15·9	13·3
September	26·4	19·5	20·7	16·1	13·7
October .	35·9	22·4	24·6	17·1	15·0
November .	56·6	29·7	34·7	21·9	17·8
December .	50·7	31·7	34·2	23·6	19·3
1922.					
January .	50·8	33·8	36·7	24·6	20·4
February .	58·0	37·6	41·0	30·2	24·5
March .	74·6	50·3	54·3	36·0	29·0
April. .	82·0	59·9	63·6	43 6	34·4
May . .	86·2	60·3	64·6	46·8	38·0
June . .	94·8	65·4	70·3	51·2	41·5
July . .	138·5	93·0	100·6	68·4	53·9
August .	324·9	165·5	192·0	97·5	77·7
September .	431·1	258·2	287·0	154·2	133·2
October .	903·4	498·5	566·0	266·2	220·7
November .	2141·5	952·9	1151·0	549·8	446·1
December .	2432·3	1283·3	1474·6	807·0	685·1
1923.					
January .	4758·3	2390·1	2784·8	1366·0	1120·0
February .	8796·4	4942·4	5584·7	3183·0	2643·0
March .	6815·9	4502·6	4888·2	3315·0	2854·0

The most variable element in these columns is that of the price of imported goods. Even when the rate for the dollar is not shown side by side with the prices of these, it is clear that they reflect the fluctuations of the German currency in terms of the money of the world market, modified by movements in the gold prices of the world market.

The prices of the domestic wholesale commodities follow haltingly and hesitatingly. When the dollar rate rises sharply, these prices remain at first strikingly behind the level of prices of imported commodities, yet, when the dollar rate and the prices of imports begin to fall, they continue the process of approximation by continuing to rise. When in the year 1920 the Berlin dollar rate, with an average of 99·11 marks (equal to 23·6 times par), reached its maximum for the time being in February, the index number for imported goods in Germany stood at 40·6.[1] The index number of German domestic goods was then 12·1—that is, about 30 per cent. of the index number for imports. In the following months the index number for imports fell, step by step, with the dollar rate, to 19, at which figure it stood in July 1920. At the same time the index number for home products continued to rise to 12·6, and was then 66 per cent. of the index number for imports. Then followed a year of relative stability in the rates of exchange and in wholesale prices, a year in which the index for home products approached still more to that of imported goods. In May 1921 the relation of the two indices was as 15·2 to 12·7, and the index for home products was thus 84 per cent. of the index for imported goods.

When in the second half of the year 1921 the consequences of Germany's subjection to the London Ultimatum and of the unfulfillable conditions imposed upon her by that ultimatum manifested themselves in the inauguration of the collapse of the German currency, the prices of imports went soaring upwards with the rate for the dollar.

In November 1921 the index for imports was already 56·6. The index for home products followed in its wake, but the margin between the two went on widening, and in November the index was 29·7—that is, 52 per cent. of the index for imports. When the index of the exchanges and that of imports took a downward course in the following months, the prices for home manufactures continued to rise. In January 1922 the two indices were 50·8 and 33·8, and home prices thus again stood at 66 per cent. of import prices.

[1] That the index number of German imports at 40·6 was at that time higher than the figure of 23·6 for the German currency derived from the dollar rate, can be explained by the fact that the American index number for wholesale prices stood at 226. Translated into German money, this gives for American wholesale prices a figure of $23{\cdot}6 \times 2{\cdot}26 = 53{\cdot}3$, which is quite considerably higher than the index number of German imports.

This relation continued right up to the second half of the year 1922, both index numbers rising all the time. In July 1922 the index for imports was 138·5, and that for home manufactures 93·0, the latter thus being 67 per cent. of the former. When, at this point, French threats of violence precipitated the actual catastrophe of the German exchanges, the prices of imports and of home manufactures, although the latter rose upwards sharply, moved widely apart. In November 1922 the index of imports was 2141·5 and that for home goods 952·9=45 per cent. of the index for imports. On the 5th February 1923, the statistical basic date after the highest rate of the dollar had been registered (49,000 marks on 31st January), the import index of 11,176 contrasted with the home index of 4925. The relation of the latter to the former was thus only 44 per cent. In the meantime action had been initiated to keep down the rate of exchange of the dollar, and resulted in the dollar rate dropping on the 15th February to 19,500 marks as against 42,250 marks on the 5th February. This policy resulted further in a very large drop in the import index, whilst the prices of home products remained nearly stable. On the 15th February the two indices were 7963 and 4873 respectively, and the home index had thus risen in ten days from 44 per cent. to 61 per cent. of the import index.

Even more steady than the curve of the index numbers of home produced wholesale commodities is the curve of retail prices and of figures of the cost of living, chiefly based on these. This applies mainly to figures of the total cost of living, including rents. Government control of wheat, which was still partly in force, and the control of rents, which was fully in force, visibly depress the curve of cost of living. These factors entered into play especially in times of sharp rises of the rates of foreign exchange. In February 1920 the index of the cost of living was 8·5, and was about half the wholesale index of 16·9. In the following months, in which the exchanges improved and wholesale prices fell, the figures of cost of living went on rising. They stood in June 1921 at the figure of 11·7, as against the wholesale index of 13·7, the difference between the two series of numbers being thus narrowed down to about 14 per cent. The sharp fall in the mark, however, which began in the second half of 1921, again widened the gap between the two series of figures. In November 1921 a wholesale index of 34·2 contrasted with an index of the cost of living of 17·8. When the German currency again collapsed in the second half of 1922, the difference became still greater. In January 1923 the index of the cost of living was 1120, and was only about 40 per cent. of the wholesale index of 2785, and in March 1923, the last month for which at the time of writing figures are available, the relation stood at 2854 and 4888.

The part played in the cost of living figures by the various categories of expenditure will be seen from the following statistical table:—

Index Number for the whole Reich for	1922.									1923.		
	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.
Foodstuffs	43·6	46·8	51·2	68·4	97·5	154·2	266·2	549·8	807·0	1366	3183	3315
Clothing	48·3	56·9	65·2	80·2	125·7	260·0	386·6	741·6	1161·1	1682	4164	4323
Light and heat	35·0	44·1	48·2	59·4	77·2	161·1	251·7	508·3	1038·9	1612	4071	5529
Rents	2·9	3·0	3·1	3·4	4·0	4·2	8·0	11·3	16·5	38	58	113
General cost of living	34·4	38·0	41·5	53·9	77·7	133·2	220·7	446·1	685·1	1120	2643	2854

Thus up to March 1923 rents had risen as compared with pre-war figures by only $\frac{1}{40}$th of the figures for clothing, by $\frac{1}{50}$th of the figures for light and fuel, and by $\frac{1}{30}$th of the figures for food. It is only because of the relatively small rise in rents that the cost of living index number, with a figure of 2854, was substantially lower than the indices for food, clothing, and light and fuel, which were 3315, 4323, and 5529 respectively.

¶ 9. Germany—Wages and Salaries

For the War years and for the first years after the German Revolution and the conclusion of Peace, the available data regarding developments in wages and salaries have not yet been sufficiently examined and calculated to enable one to form a final judgment. Broadly speaking, the rise in wages for all kinds of labour from the outbreak of war up to the autumn of 1917 remained within comparatively narrow limits. Only on the initiation of the so-called Hindenburg programme did a convulsive rise in wages show itself. The Revolution brought in its train the legal 8-hour day, numerous strikes, and other frictional forces, which aggravated the physical exhaustion and helped to reduce further the already low productivity of labour. At the same time the power of Labour was increasing, and in the knowledge of its power Labour was making claims for higher wages. This resulted in a race between wages and

prices, in which wages may for the time being have stolen a march on prices, but were in the long run always overtaken by the latter.

The position as to the relation between prices, cost of living, and wages is shown in the subjoined statistical table:—

Period.	Wholesale Index Number (1913 =1).	Cost of Food (1913/14 =1).	Cost of Living (1913/14 =1).	Index of the Weekly Wages (fixed by Agreement) of adult Metal Workers paid by Time (July 1914 =1).	Index of Average Monthly Wages of unskilled married Labourers in Government Establishments over the age of 24 in local Class A (end of 1913 =1).
January 1921	14	14	12	..	11
,, 1922	37	25	20	..	20
April ,,	64	44	34	34	30
July ,,	101	68	54	56	57
August ,,	192	98	78	76	85
September ,,	287	154	133	135	161
October ,,	566	206	221	193	190
November ,,	1,151	550	446	334	332
December ,,	1,475	807	685	598	552
January 1923	2,785	1,366	1,120	997	888
February ,,	5,585	3,183	2,643	2,326	1,852
March ,,	4,888	3,315	2,854	2,978	..

The wages of unskilled labour are seen by these figures to have remained, right up to the second half of 1922, in an approximate state of balance with rising cost of living (including rents), whilst they had already at the beginning of 1922 fallen considerably below the rise in wholesale prices. Even in August 1922, when the wholesale index had risen to 192, the wages of an unskilled adult workman in the metal industry had already risen 76 times, and in the State factories 85 times, above pre-war wages, whilst the cost of living index for the whole Empire was 78 times the pre-war figure. In the following months, however, the rise in wages did not keep pace with the increasing dearness of all the necessaries of life, the prices of which were rising by tremendous leaps. In February 1923 the real wages of an unskilled married labourer in the metal trades were, measured by the cost of living index of the Imperial Statistical Office, only 88 per cent. of the pre-war

wages, and the wages of an unskilled married labourer employed by the State were only 70 per cent. of the pre-war rate. The drop in prices which has since set in has, taking into account the stability and even the further rise of wages in some cases, brought about a certain degree of adjustment.

Wages for unskilled labour should not, however, be taken as in any way typical of the course of wages for labour generally. They should not be taken as such even for the group of wage-earners as a whole, far less for the salaries of commercial and technical employees, of civil servants, or for professional earnings.

The following statistical table shows the enormous extent to which the wages in the various groups came to differ from each other:—

Average Monthly Wages of State Labourers more than 24 Years of Age in Class A Localities

Period.	Skilled Labour (Artisans of Wage Group III).		Semi-skilled Labour (Assistants in Wage Group V).		Unskilled Labour (Wage Group VII).	
	Single.	Married.	Single.	Married.	Single.	Married.
A. Monthly Wages in Marks						
End of 1913	150		136		103	
January 1921	1,186	1,269	1,123	1,206	1,082	1,165
January 1922	1,924	2,257	1,820	2,153	1,758	2,090
July ,,	5,491	6,261	5,221	5,990	5,075	5,845
August ,,	8,362	9,298	7,966	8,902	7,821	8,757
September ,,	15,954	17,618	15,246	16,910	14,914	16,578
October ,,	17,654	20,718	16,846	19,910	16,514	19,578
November ,,	29,848	36,192	28,600	34,944	27,872	34,216
December ,,	48,464	59,904	46,384	57,824	45,448	50,888
January 1923	78,529	96,408	75,192	93,080	73,528	91,416
February ,,	164,944	201,136	157,872	194,064	154,544	190,736
B. Relative Figures (end of 1913=1)						
January 1921	8	8	8	9	11	11
January 1922	13	15	13	16	17	20
July ,,	37	42	38	44	49	57
August ,,	56	62	59	65	76	85
September ,,	106	117	112	124	145	161
October ,,	118	138	124	146	160	190
November ,,	199	241	210	257	271	332
December ,,	323	399	341	425	441	552
January 1923	523	643	553	684	714	888
February ,,	1,100	1,341	1,161	1,427	1,500	1,852

The rise in the wages of semi-skilled and skilled labour is thus considerably less than the rise in the wages of unskilled labour. This observation applies to all branches of industry, and not only to the wages of workmen employed by the State, and has caused the difference between the wages of skilled and unskilled labour to shrink almost to vanishing point. Whereas before the War the skilled workman employed by the State received 45·6 per cent. more than the unskilled man, yet in February 1923 the difference was only 5·4 per cent.

Although this development is unfavourable to skilled labour, it is even more unfavourable when we consider actual brain workers. The developments in the salaries of officials illustrate this.

Average Monthly Salaries of Civil Servants in Class A Localities
(Wage Group and Family Circumstances)

Period.	Higher Officials (Group XI).		Middle-grade Officials (Group VIII).		Junior Officials (Group III).	
	Single.	Married.	Single.	Married.	Single.	Married.
A. Monthly Salaries in Marks (excluding Tax Deductions)						
1913	608		367		165	
February 1922	4,587	5,067	3,007	3,487	1,972	2,452
April ,,	5,363	6,222	3,814	4,673	2,666	3,524
July ,,	10,685	12,193	7,587	9,095	5,290	6,798
October ,,	42,267	48,611	30,084	36,428	18,382	24,725
December ,,	119,837	138,487	85,295	103,945	52,116	70,766
January 1923	195,773	226,523	139,343	170,093	85,140	115,890
February ,,	412,111	476,211	293,323	357,423	179,224	243,324
B. Relative Figures (end of 1913=1)						
February 1922	8	8	8	10	12	15
April ,,	9	10	10	13	16	21
July ,,	18	20	21	25	32	41
October ,,	70	80	82	99	111	150
December ,,	197	228	232	283	316	429
January 1923	322	373	380	463	516	702
February ,,	678	783	799	974	1,086	1,475

The rise as compared with pre-war salaries was, therefore, considerably less for civil servants of the middle grades than for those of lower grades, and the higher officials were even worse off. Before the War the higher official of Group XI received

3·7 times as much as the lower official of Group III. He now obtains less than double.

As compared with the wages of unskilled Government labour, which we shall take as 100, the wages of semi-skilled and skilled labour and the salaries for the lower, middle, and higher grades of civil servants, measured by the figures for 1913 and the month of February 1923 respectively, were as follows:—

Wages or Salary of Married Workers classified as under:—	In the Year 1913.	In February 1923.
Unskilled workmen	100	100
Semi-skilled ,,	132	102
Skilled ,,	146	105
Junior grade officials	160	127
Middle ,, ,,	356	187
Higher ,, ,,	590	249

The middle grade official whose salary before the War was more than 3½ times as much as the wage of the unskilled labourer does not to-day receive even twice as much. The higher grade official whose salary was nearly 6 times the wage of the unskilled labourer draws to-day less than 2½ times as much.

If the conception of "real wages" be applied to salaries, and if the index numbers of the cost of living calculated by the Imperial Statistical Office are taken as a basis, we obtain the following picture for February 1923:—

Index Number of Cost of Living in February 1923 : 2643

Group of Workmen or Officials.	Relative Figures of Wages or Salaries (1913 = 1).	Real Wages in February 1923 as Percentages of Real Wages of 1913.
		Per cent.
Unskilled labour	1,852	70
Semi-skilled ,,	1,427	54
Skilled ,,	1,341	51
Lower grade officials	1,475	56
Middle ,, ,,	974	37
Higher ,, ,,	783	30

Therefore the unskilled workman still drew in February 1923 as much as 70 per cent. of his pre-war real wages, while the higher grade official had to be satisfied with 30 per cent. of his pre-war real salary.

The development of the salaries of civil servants is typical of the wages of ordinary employees. In banking, for example, the employee who drew before the War for more difficult work (Group III) 163 per cent. of the salary of the junior bank clerk (Group I), in February 1923 drew only 113 per cent.

The equalisation of the levels is still further intensified by the graduated income tax.

Professional earnings, such as those of medical men, lawyers, university professors, authors, artists, etc., apart from a few rare exceptions, followed an even more unfavourable course than the salaries of officials.

¶ 10. Germany—Quotations and Yields of Securities

Securities are of three types:—

1. Fixed interest-bearing bonds expressed in German currency (Imperial and Federal State loans, communal loans, mortgages, and industrial bonds).
2. All kinds of securities expressed in foreign currencies.
3. Home dividend-bearing securities, particularly shares.

The first type has in essentials met with the same fate as German money. As these securities constitute a claim to a specified sum of German money, it follows that they had necessarily to suffer the depreciation of the German money in which they are expressed. Behind the enormous changes in German currency there were all those influences which in normal times affect the price quotations of fixed interest-bearing securities, particularly the changes in the rate of interest for long-term credit. In the depreciating German currency most of these bonds were quoted at a rate even lower than that of pre-war days. Not until the autumn of 1922 was there any marked improvement in their rates. This improvement raised the rate of some few of these securities far above their nominal value. The cause of this is to be found in rumours that a "valorisation" of the securities in question was within the region of possibilities. The greatest rises were registered by the German loans for occupied territories, the rate for which went for a time to 20,000 per cent., simply on account of a rumour that England would take over these loans and would convert them into pounds sterling at a favourable rate. But in the case of other Imperial and Federal State loans also it was hoped that they would appreciate in value when the

mark became stabilised. The same applies to mortgage-bonds, the market-rate of which was raised considerably by the propaganda for the revaluation of mortgage debts.

The Imperial Statistical Office has calculated the following indices for the *fixed interest-bearing securities* which are quoted on German Stock Exchanges:—

Monthly and Yearly Averages.	German Imperial Loans.	German Provincial Loans.	German Municipal Loans.	Land Mortgage Bonds.	Mortgage Bonds.	General Index.
Number of securities .	13.	9.	28.	11.	9.	70.
1922.						
January . .	87	90	89	101	106	93
February .	87	89	89	100	105	92
March . .	88	87	89	98	104	92
April . .	90	86	89	97	103	92
May . .	92	85	90	97	103	92
June . .	93	84	90	96	103	92
July . .	93	82	89	96	103	92
August . .	95	80	86	94	100	90
September .	100	77	86	92	98	90
October . .	104	77	83	92	96	89
November .	179	91	95	116	111	116
December .	505	104	102	133	123	186
Average for year 1922 . .	135	86	90	101	105	101
1923.						
January . .	925	127	127	281	174	311
February .	1,407	152	198	378	259	456

The movements in the quotations of *foreign securities* are influenced by the course of the rate of exchange of the currency in terms of which they are expressed.

Of special interest is the course of development in the third category—that is, in *dividend-producing stocks and shares.*

The course of stocks and shares can be seen from the statistical table on p. 585, which has been prepared from calculations made by the Imperial Statistical Office from the beginning of the year 1914, and divided into groups for mining and the heavy industries, manufacturing industries, trade and commerce.[1]

[1] For the method on which these index numbers for shares have been calculated, see in particular *Wirtschaft und Statistik*, 3rd year, Nos. 3, 4, p. 109 *et inf.*

Index Numbers of Stocks and Shares calculated by the Imperial Statistical Office (1913=100.)

Months.	Mining and Heavy Industries.	Manufacturing Industries.	Trade and Commerce.	General Index Number.
1914.				
January	105	102	102	102
February	106	104	102	104
March	103	102	100	102
April	100	100	97	99
May	100	98	98	98
June	99	96	97	97
July	88	85	92	87
1917.				
December	144	130	102	126
1918.				
January	144	131	103	126
February	147	136	106	131
March	148	138	106	132
April	151	138	107	133
May	157	145	108	138
June	154	143	108	137
July	153	145	109	137
August	160	152	111	143
September	148	143	107	135
October	115	113	96	109
November	99	95	90	95
December	89	89	87	88
1919.				
January	98	99	92	97
February	95	101	93	98
March	92	100	95	97
April	91	99	95	96
May	87	93	90	91
June	93	100	96	96
July	99	104	92	100
August	98	103	91	99
September	116	117	98	112
October	132	130	105	124
November	137	130	105	125
December	144	130	104	127
1920.				
January	204	172	121	166
February	256	212	139	200
March	253	207	136	196
April	231	195	130	184
May	196	169	119	160
June	218	173	122	167
July	270	191	122	187
August	295	213	127	204
September	311	232	136	220
October	337	263	150	145
November	348	282	158	260
December	366	303	159	274

Index Numbers of Stocks and Shares—continued

Months.	Mining and Heavy Industries.	Manufacturing Industries.	Trade and Commerce.	General Index Number.
1921.				
January	366	308	163	278
February	340	286	159	260
March	348	293	159	265
April	364	306	158	275
May	366	312	155	277
June	383	348	155	299
July	411	408	163	337
August	463	484	174	389
September	614	618	212	492
October	734	825	269	644
November	1,044	1,189	423	936
December	791	940	329	731
1922.				
January	861	970	321	743
February	1,019	1,099	330	841
March	1,162	1,335	349	986
April	1,185	1,386	348	1,018
May	1,036	1,166	317	873
June	1,038	1,070	299	823
July	1,158	1,157	320	897
August	1,615	1,417	429	1,156
September	1,746	1,500	534	1,262
October	2,922	2,309	980	2,062
November	8,457	5,458	1,904	5,070
December	13,065	10,516	3,538	8,981
1923.				
January	29,623	25,017	10,979	22,429
February	52,845	53,288	23,028	45,770
March	42,034	39,659	15,590	33,635

The tension which preceded the outbreak of war manifested itself in a depression of the quotations of stocks and shares, and the general index number, therefore, fell in July 1914 to 87 per cent. of that of 1913. At the outbreak of war Stock Exchange quotations were suspended. When these were resumed in December 1917 the general index number was 126. This high figure was due to the favourable estimate of the position and prospects of the German industries, and in part also to the depreciation of the German currency, which had already taken place. Up to August 1918 the rise in the quotations was moderate. The average for August was 143. The effect of the political and military collapse was in part balanced by the depreciation of German money. This explains why the general index of the

rates of stocks and shares had not by December 1918 fallen lower than 88. As the mark had by that time dropped to less than half its original gold equivalent, this index number, recalculated in gold, meant that German stocks and shares were only about 40 per cent. of their pre-war price.

From the year 1919 onwards the movements in the foreign rates of exchange became clearly apparent in the Stock Exchange quotations, in direction though not in extent. In January-February 1920 the Berlin dollar rate reached for the first time the figure of 100. This corresponded to a fall of the mark to $\frac{1}{2}\frac{1}{0}$th of its gold parity. The index for stocks and shares reached in February 1920 its maximum for the time being with the figure of 200. Translated into gold, this index number meant about 8 per cent. of the pre-war rate. Nevertheless, in the following months up to May, the period during which the German currency improved, there was a reversal in the quotations, although only a slight one.

The same development, but much more strongly marked, was repeated during the second half of the year 1921. The ill-fated attempt to comply with the London Ultimatum, which precipitated a rise of the dollar rate to 300 in November, resulted in the first panic, which was marked by soaring prices on the stock and share market. The index number of mining and heavy industrial shares went to 1044, that of manufactures to 1189, and only because the shares of trading and commercial concerns (particularly bank shares) lagged behind at 423 did the general index number for November 1921 stand no higher than 936. As the factor of depreciation of the mark, as measured by the dollar rates, on the average of November 1921, amounted to more than 60, even the highest and most favourable group index (1189 for manufacturing concerns) when calculated on a gold basis meant less than 20 per cent. of the pre-war rate.

The complete collapse of the German currency, which began in the second half of 1922 and which culminated at the end of January 1923 with a dollar rate of 50,000 marks (the average dollar rate of February being 27,818 marks), caused the share market to soar at a rate previously undreamed of. The general index of share prices rose in February 1923 to 45,700, the group indices for heavy industries and mining as well as for manufactures rising to about 53,000. As, measured by the value of gold, the mark was worth only $\frac{1}{8\,6\,2\,0}$th of its former value, and as the general index number of German shares was about 458 times the pre-war figure, both indices taken together show that, measured in gold, German shares reached in February 1923 an average of only about 6·9 per cent. of the pre-war price. At that time the gold value of German shares had even to some extent again risen above the

lowest figure attained, as will be seen from the following statistical table:—

Share Index for 1918–1923

On a Gold basis, using the dollar rate as standard

Year or Month.	Mining and Heavy Industries.	Manufactures.	Trade and Commerce.	General Index.
1918 . .	100·6	95·1	74·5	91·1
1919 . .	27·9	29·1	26·4	28·2
1920 . .	19·3	15·2	9·5	14·4
1921 . .	22·2	21·3	9·2	17·9
1922 . .	11·6	12·1	3·5	9·3
March 1922 .	17·2	19·7	5·1	14·6
June ,, .	13·7	14·2	3·9	10·9
September ,, .	5·0	4·3	1·5	3·6
December ,, .	7·2	5·8	2·0	5·0
January 1923 .	6·9	5·8	2·6	5·2
February ,, .	8·0	8·0	3·5	6·9
March ,, .	8·3	7·9	3·1	6·7

In these figures the "watering" of the gold capital of German companies (by the issue of new shares at relatively low prices in German paper money) has been taken into account by the addition to the Stock Exchange quotations of appropriate figures based on the subscription-rights. The fall in shares to but a small percentage of their pre-war gold value is not, therefore, due to any such watering. This becomes absolutely clear when we observe the developments in the quotations for shares of such companies as have in no way increased their share capital since the outbreak of war. An example is the Gelsenkirchen Mining Company (Gelsenkirchner Bergwerks A.G.). The shares of this company were quoted in January 1914 at about 190. Translated into American money at pre-war par value this price corresponded to a value for a 1000-mark share of about 450 dollars. On the 28th March 1923 the price of the shares was 67,500 marks, which, taking the dollar rate at the time at about 21,000 marks, corresponded to a price per share in American money of about 32 dollars. On a gold basis the price of this important German security, in no way detrimentally affected by watering, was thus at the end of March 1923 only about 7 per cent. of the pre-war price.

Thus even the "intrinsic values" embodied in joint-stock companies underwent considerable depreciation in those days of storm and stress, and this is shown in the clearest way by a general

estimate of the value of German shares both at the beginning of the War and at the end of 1922.

Before the War (on the 31st December 1913) the 5486 German public companies had a capital of the nominal value of 17·4 milliard gold marks, their Stock Exchange value being 31·2 milliard gold marks.

Up to the 31st December 1921 the number of German public companies had risen to 9669 and their nominal capital to 105·4 milliard marks. The average share index of the Imperial Statistical Office for the month of December 1922 was 90 times the pre-war figure. This index was calculated, however, by adding the various subscription-rights acquired from time to time. Neglecting these additions—and this is necessary in any estimate of the total share capital available at the end of 1922—the index calculated by the *Industrie- und Handelszeitung*, from quotations on the 27th December 1922, of 140 shares of various kinds, an index which was 54 times the pre-war figure, is probably about correct. As the average level of prices of shares quoted during the year 1913 was about 180 per cent. of the nominal value, we have for the end of 1922 an average level of 9720 per cent. of the nominal value. The nominal capital being taken at about 105 milliard marks, the total value of the share capital at the end of 1922 is thus about 10 billion marks.

The dollar rate at the end of December 1922 was about 7500 marks. This gives one gold mark as being equivalent to 1800 paper marks. The aggregate of 10 billion paper marks of the German share quotations was therefore equivalent to a gold value of about 5·6 milliard marks, as against 31·2 milliard gold marks on the 31st December 1913. Although, therefore, the nominal capital of German public companies had risen since 1913—by increased share capital and by the flotation of new companies—from 17 to 105 milliard marks—that is, about sixfold,—yet the value of the quotations expressed in gold had fallen to not much more than $\frac{1}{8}$th.[1]

In the *money value of earnings of capital* we must differentiate between interest and share dividends, etc.

The *interest* earned by capital invested in German currency is to-day the same in paper marks as it used to be in gold marks.

[1] While the above calculations were being set up, the Imperial Statistical Office published in *Wirtschaft und Statistik*, 3rd year, No. 7, a calculation according to which the gold value of the capital invested in shares since the end of 1913 in new companies and in capital extensions of existing companies amounted to 5·8 milliard gold marks. This means that, translated into gold values, the aggregate stock-exchange value of *all* German shares at the end of 1922 was even a little lower than the gold value of the new investments as from the beginning of 1914. The gold basis shows, therefore, a loss in the aggregate value of German shares which exceeds somewhat the stock-exchange value of all German shares at the end of 1913.

The owners of loaned capital have not been able to escape any of the adverse effects of currency depreciation upon interest any more than upon their capital stock.

As regards profits, however, it has not been inherently impossible to adjust these to the currency depreciation, but such adjustment has taken place only to a modest extent. How modest, may be seen from a comparison of the share quotations with the distribution of dividends.

According to the statistics of the *Industrie- und Handelszeitung*, the actual earnings of share capital on the 27th December 1922, calculated on the basis of the share quotations at this date and of the dividends actually paid, were as follows:—

Number of Companies.	Type of Share.	Quotation as a Percentage of 1913 Quotation.	Interest as a Percentage of Quotations.
9	Banks	3042·6	0·34
4	Loan Issue Banks	636·4	0·81
6	Railways and tramways	6995·4	0·07
8	Shipping companies and dockyards	6531·2	0·17
6	Breweries	1416·3	0·50
12	Textile factories	9415·9	0·25
12	Coal mines	6661·9	0·11
16	Iron mines and foundries	9633·8	0·14
4	Potash mines	10,192·8	0·13
12	Metal factories	5669·7	0·17
10	Machine factories	4258·4	0·21
15	Chemical factories	3407·7	0·25
11	Electricity companies	6035·4	0·22
9	Paper factories	5487·0	0·34
6	Estate companies	1666·7	..
140	Average	5403·4	0·26

Thus the average actual dividend earned by German shares was at the end of 1922 not much more than ¼ per cent. of their quoted value. Before the War the actual dividend-earning capacity of German public companies was scarcely lower than 5 per cent. Measured by share quotations, therefore, the earnings fell to $\frac{1}{20}$th of the pre-war rate. As, however, the share quotations themselves lagged behind the depreciation in the currency, the fall in the real earnings of the capital invested in German companies was actually much greater. In order to obtain a clear idea of this, one need only compare the dividends declared by German companies in 1913 with those declared in 1922:

Quotations of German shares at the end of 1913 .	31,200 million gold marks.
Total of dividends in 1913 at 5 per cent. . .	1,560 ,, ,, ,,
Add 5 per cent. for the 5·8 milliard gold marks newly invested between 1914 and 1922 . .	290 ,, ,, ,,
	1,850 million gold marks.
Quotations of German shares at the end of 1922 .	10,000 milliard paper marks.
Total of dividends in 1922 at ¼ per cent. . .	25 ,, ,, ,,

The paper mark dividends of 1922 were, therefore, only about 13½ times the gold mark dividends of 1913, whereas the paper mark in 1922 was worth, when the average dollar rate was about 1890 marks, about $\frac{1}{1890}$th part of a gold mark. This gives the result that, measured in gold, the dividends of German public companies in 1922 amounted to only about 55 million gold marks, *i.e.* including the new investments between 1914 and 1922, to only about 3 per cent. of the amount for 1913.

¶ 11. The Factors underlying Changes in the Value of Money during the War and in the Post-War Years

In the previous paragraphs we have been able to satisfy ourselves that the depreciation of currency in the sense defined above (p. 548), of changes in the exchange ratios to the disadvantage of money, has been obvious and universal since the outbreak of the War—although there are differences in degree from country to country, and differences in the forms in which it appears in one and the same country.

We are equally able to satisfy ourselves that, before the War, the stability of the value of money conformed to the relative stability of the circumstances which affect money, and that, on the other hand, during the War and the post-war period, the convulsive disturbances of the exchange relations coincided with similarly convulsive disturbances of the monetary systems, accompanied by enormous quantitative alterations in the conditions of circulation and by hitherto unheard-of disturbances in the relations of the various currencies to each other.

At first sight it would appear that there is a causal connection between these qualitative and quantitative changes in the monetary systems on the one hand, and the changes in the exchange relations between money and all other goods on the other. This first impression is confirmed upon more careful examination, from

which we see that the intensity of the disturbances in the exchange relations in the individual countries varied and still varies directly in proportion to the extent of the changes in the monetary system of the country made during the War and the post-war period; in broad outline the connection between the increase in the circulation of money, the debasement of the currency, and the fall in the value of money as compared with other economic objects is unmistakable. The group of countries described above (see p. 275) which have by now brought their currency nearly to the former parity in gold (the United States, Japan, the most important European and American neutrals, England and the great Dominions), and which also show only the smallest relative deviation in the level of their home prices, both as compared with each other and with the pre-war situation (see above, p. 412), also register only the smallest increase in currency circulation. In fact, the downward tendency of the level of prices in most of these countries during the year 1920 coincides with a systematic contraction of their circulation (deflation). France, Belgium, and Italy have not yet been able to make any marked impression upon their substantially higher circulation, but they have, since 1920, bolted the door against any further increase in the currency, and they take up a half-way position as regards the level of their exchange rates and prices. In Germany, Poland, and Austria, on the other hand, to say nothing of Russia, the progressively developing inflation has gone hand in hand with the depreciation of the currency and with a general rise in prices and wages.

Nevertheless, we should be acting hastily if, in regard to the obvious connection which exists in these cases, we were to say that only one interpretation is admissible, namely, that the cause is to be found only in the changes in the monetary system, or even only in the quantitative changes in the circulation of money, and that changes in the inner and outer value of money—that is to say, in the position of the currency and in its purchasing power—are simply effects. Changes in the monetary system, particularly quantitative changes, do not arise of themselves, or only from causes which are unconnected in any way with changes in the purchasing power of money; and changes in the purchasing power of money need not necessarily be conditioned only by changes which take place on the side of money. It is, therefore, quite conceivable that changes in the purchasing power of money, caused by factors on the side of commodities, may also play their part in the determination of the changes in the volume of the circulation. We have seen that in the decade before the War, fluctuations in the level of prices which sprang from alterations in the trade cycle manifested themselves in fluctuations in the demand for money, which latter caused an expansion or a con-

traction of the elastic portion of the circulation—that is, of the circulating notes. Here, therefore, we had not a causal conditioning of prices by changes in the circulation, but, on the contrary, a causal conditioning of changes in the circulation by prices—that is, through the purchasing power of money. What in those days was possible on a smaller scale of fluctuations due to the trade cycle cannot be inherently impossible in the wider sphere of war and post-war developments.

In point of fact, the first impetus to the enormous displacements in the sphere of monetary systems, of the circulation of currency, and of the purchasing power of money came from the side of commodities. The War immediately precipitated a gigantic increase in the demand for all goods necessary for the equipment and provisioning of armies which numbered millions. At the same time it brought about a considerable disturbance and diminution in the production of goods, partly by the withdrawal of millions of the most productive workers, partly by the adaptation of production to the special requirements of war, and partly by the obstacles to, or complete stoppage of, the import of foreign raw materials. The enormous unproductive consumption on the one side, and the throttling of production on the other, must of themselves, and quite independently of changes in the sphere of the monetary system, have brought about a marked tendency to rising prices.

Of course, on the side of the monetary system also, important qualitative and quantitative changes occurred immediately after the outbreak of war. Such were the inconvertibility of the paper notes and the setting in motion of the printing-presses in order to satisfy the State's urgent demand for money for purposes of the War. But the rise in the supply of money brought about by this type of war finance was accompanied, at all events in the first week of the War, by a similar rise in the demand for money, the cause of which was not the general rise in prices, but primarily the fact that credit was seriously shaken, that there was a panic hoarding of cash and a diminution in the use of arrangements for payments based on credit which normally economise cash.

These forces which counteracted to the inflated issue of paper money were at first so great that instead of an abundance of money there was a marked and threatening shortage. Great stringency of money, while prices were rapidly rising—the very co-existence of these two influences so unmistakable in the first weeks of the War,—shows that in those days the decisive cause of the rise in prices—that is, of the diminution of the purchasing power of money—could not have lain on the side of money, but must be sought on the side of goods exchangeable for money.

Naturally the financing of the War by printing notes could not have been without influence on the purchasing power of money.

Whilst the acquisition of supplies by means of taxes or by long-term loans only transfers the available purchasing power from private persons to the State, the issue of paper currency creates additional purchasing power which enters into competition with the available purchasing power, and which accordingly, other things being equal, must cause prices to rise—that is, it must cause the purchasing power of money to diminish (see above, p. 490). But this tendency manifested itself in Germany in the early days of the War only by relieving the money shortage, and not by any oversupply of the demand for money.

As the War progressed, Germany pursued the policy of counteracting the rise in the circulation of paper money by raising a war loan every six months, and from 1916 onwards by war taxes also. How far these steps were successful and the degree and rate at which the paper circulation grew, notwithstanding these countermeasures, has already been shown above (p. 240 *et seq.*).

The growth of the paper circulation was, in conformity with the course of war expenditure and with the successful raising of war loans, quite moderate up to the autumn of 1916. Notwithstanding the extension of the war areas, the increase in the number of military effectives, the greater and improved equipment of the army with war machinery of all kinds, and the far greater consumption of munitions, it was still possible in those days to keep war expenses more or less stable at about 2 milliard marks a month [1] by a policy of severe economy and by careful control of the prices paid for war material of all kinds. The subsequent acceleration in the issue of paper money and the lagging of War Loan results behind war expenditure coincided with the higher calls on resources due to the "Hindenburg Programme," and with an alteration in the policy of the army administration in regard to prices. Contracts for deliveries, instead of being made at fixed prices, came more and more to be based upon the cost of material and wages plus an addition for profit. This system of determining prices meant that purveyors of war supplies lost all interest in keeping down the prices of materials and wages, and necessarily led to a considerable rise in the cost of war material. At the same time the policy of rationing, strictly applied during the first half of the War, and the fixing of maximum prices for articles of daily consumption, were being rendered more and more nugatory by the loosening of public morale and by illicit trading (*Schleichhandel*). Thus, as the War progressed, there were, not only on the side of money but also on that of commodities, important factors which would have sufficed to bring about large alterations in the exchange relations between money and goods.

Added to this, as the war areas and the occupied territories

[1] See the author's *Weltkrieg*, vol. ii, pp. 136, 173.

East and West expanded, Germany had to provide with her currency a larger territory than before the War, and as the obstacles to credit and to the methods of payment based on credit continued to operate, it is open to question whether, for the actual period of the War up to 1918, there was in reality in Germany any "inflation" in the sense of an excess cover of the monetary demand by the issue of new circulating media, especially as (see p. 573, above) the rise in the level of prices was at that time smaller in Germany than it was in any of the other belligerent or in neutral countries. The President of the Reichsbank, Havenstein, with whom the author, as Secretary of State for the Treasury, and later as Secretary of State for Home Affairs and Representative of the Chancellor in the management of the bank, was in closest contact during those years, steadfastly held the view that there could be no question of any "inflation" in view of the amounts tied up in the cash reserves of the army and of industry, in view of the amounts required in the war areas, and in view of the increased demand, due to rises in prices and wages, conditioned by the War and independently of currency policy.

Nevertheless, it must be admitted that the rise in prices would, even during the War, have been certainly more moderate if the tendencies in this direction on the side of goods had been retarded by currency policy and had not been reinforced by the continued increase in the note issue. This is particularly clear in connection with the policy of the army authorities. The policy of the army authorities in fixing prices for war supplies on the basis of the cost of material and wages plus an addition for profits, which was the primary cause of the rise in prices of war material and thereby of the increased demand for money, and the heavier pressure upon the note-printing presses, would not have been possible to the extent to which it occurred if the printing-presses had not been at the absolute and unrestricted disposal of the army authorities. Generally speaking, it may be said that a monetary circulation which cannot be increased arbitrarily, in itself constitutes a considerable obstacle to large rises in prices. When this obstacle on the side of monetary supply is relaxed, or is even completely removed, the effect of all the tendencies operating on the side of commodities must become correspondingly greater.

The factors tending to alter the exchange relations between goods and money, and operating on the side of both, were just as intertwined in the case of the other belligerent States as they were in Germany.

In so far as the neutral States are concerned, a demand for money by the State was either not met by the printing of notes, did not occur, or was so met only to a restricted extent. Nevertheless, we see also in these countries phenomena similar to those

which appeared in the belligerent States. The rise in prices in those countries was scarcely less than the rise in the countries which actually participated in the War. The increase in the circulation of currency had, it is true, its origin largely in the gold which the belligerent States were obliged to give up, but it must be remarked that to the increase in the monetary gold reserves and to the bank notes covered by this reserve there was almost everywhere to be added an increase in the uncovered note circulation (see above, p. 240). The impetus to this course of development was doubtless that the demand by belligerents for all types of war material and for the necessaries of life became swollen and sought to satisfy itself by the keenest competition. The vehicle of this demand was primarily the gold which the belligerent countries took from their own reserves and from their own circulation, but in addition there were also the credits which the belligerents raised in neutral countries. The influx of gold acted as a means of directly increasing the circulation; and the credit which must ultimately have increased the calls upon the neutral note-issuing banks had indirectly the same result. The greater demand by the belligerents for goods caused, accordingly, not only the rise in prices but also the increase in the circulation of neutral countries. It thus appears as the primary cause of the inflation phenomena. But, on the other hand, we must bear in mind that it is quite possible that the increased demand by the belligerents could not have become effective on the neutral markets if the belligerents had not been in a position to offer gold, which directly increased the circulation, or to obtain credits, which had the same indirect effect. Thus in the case of neutrals also we find that the factors which operate on the side of money and those which operate on the side of the other goods are very closely intermingled.

After the War, events followed different courses in the various groups of countries. Most of the so-called "victorious countries" and the neutrals were in a position to put a stop to inflation by financial and banking measures. Some even found it possible to adopt a systematic "policy of deflation." By contracting the circulation a lowering of prices and of wages was aimed at and achieved.

In the States which were most seriously hit by the outcome of the War and by the conditions of peace, the post-war period, as we have seen (on p. 240 *et inf.*, above), brought a further increase in the circulation of money and a further revolution in all exchange relations, which phenomena overshadowed everything which had happened in this sphere during the War.

At first sight it would appear that the decisive factor in this connection is the demand for money by the State, which was not satisfied by any other means, and which accordingly resulted in the issue of paper currency. Particularly in Germany does the

enormous increase in the "floating debt" of the Reich, through the discounting of Treasury bills at the Reichsbank, which was accompanied by a correspondingly large increase in the note issue, appear to be sufficient to explain everything else.

But here also the connection is not quite so simple.

Side by side with the financial considerations affecting the State there for the first time entered into play factors of a general economic and social nature, which had their effect, in part directly on the monetary conditions, and in part indirectly on the development of the financial circumstances of the State.

The War did enormous damage to the productivity of Germany through the consumption, destruction, and spoliation of German capital (in this category of spoliation we include the confiscations of German capital invested in foreign countries, of the merchant fleet, and of the capital invested in the German colonies and the European territories separated from Germany), and perhaps still more so by the weakening of the working strength of the German nation (by death and the disablement of millions of men in their prime of life, and by the after-effects of the blockade). The Revolution and the mentality which it produced in a large section of the working-classes, who lost all sense of any relation between productivity and the reward of labour, added to the damage wrought to the economic strength of Germany. Coal production per man employed in the mines fell to little more than 60 per cent. of the pre-war figures. A similar drop in productivity as compared with pre-war times is to be found in the large industrial and commercial concerns. In agriculture the aggregate cereal crops yielded 17 million tons in 1921, as compared with 28 million tons in 1913. The maintenance of the standard of living at nearly the level reached before the War presupposed a substantial increase in the productivity of labour, having regard to the damage wrought to the processes of production by the War and its result. But claims were put forward and effectively pressed to raise the standard of comfort and at the same time to reduce the intensity of labour. This could have but one result—a race between wages and prices such as we have witnessed in the last few years. The social and political position of Labour was sufficiently strong to enforce higher wages notwithstanding the fact that less work was done. As the profits of capital had shrunk to a minimum, the higher wages could be paid only if higher prices could be obtained for the products. But higher prices raised the cost of living and brought about fresh demands for higher wages, which in turn led to a further rise in prices. And what was the part played by money in this vicious circle? The race between wages and prices gave rise to a corresponding increase in the demand for money, both on the part of the people and on that of the financial

administration of the State. A monetary organisation which offered resistance to such an expansion of the monetary demand would thereby have put a stop to the race between prices and wages. The acute shortage of money would have brought about a collapse of wages and prices, probably accompanied by crises and catastrophes. The German monetary system, however, makes possible in practice an unlimited expansion of the circulation, and it offered no such resistance. The monetary machine and its working, therefore, aided in the development pursued by wages and prices, but only in a secondary and passive manner. The increase in the issue of paper money is, within this complex of phenomena, not the cause but the consequence of rising prices and wages. At the same time, the fact that it was possible for paper money to be issued in unlimited quantities provided the necessary condition for unlimited increases in prices and wages.

As things went on, the position of German currency on the foreign exchange market came more and more to play the dominant part in the developments in prices and in the position of German currency. In considering the monetary conditions in Germany, the view widely held, especially abroad, is based on the pure quantity theory, and accordingly regards the increase in the circulation of paper currency in Germany as the cause of the rise in the level of German prices and of the depreciation of the currency. On closer examination, however, we find that cause and effect are here interchanged, and that the increase in the amount of paper money circulating in Germany is not in fact the cause but the result of the fall of the German exchanges and of the consequential rise in wages and prices.

This is demonstrated most clearly by the events which took place from the time when the London Ultimatum was accepted, in May 1921, to the time when the highest dollar rate so far reached was registered at the end of January 1923.

During this period the following changes took place in the factors, which are of essential importance in this connection:—

	May 1921.		23rd or 25th Jan. 1923.	
Floating debt of the Reich	175	milliard marks.	2,200	milliard marks.
Note circulation of the Reichsbank . .	71	,, ,,	1,654	,, ,,
Wholesale index number (1913=1)—				
for home products	12·7	,, ,,	2,872	,, ,,
,, imports . .	15·2	,, ,,	5,360	,, ,,
General index number .	13·1	,, ,,	3,286	,, ,,
Berlin dollar rate (M. for $1)	62·30	,, ,,	21,546	,, ,,

Thus in the twenty months which followed the acceptance of the London Ultimatum the floating debt of Germany was multiplied 12½ times, the note issue of the Reichsbank 23 times, the wholesale

index number for home products 226 times, that for imports 353 times, and the dollar rate 346 times.

If "inflation" had been the cause, and the depreciation of the German exchanges the effect, then, in accordance with the theory of the classical English economists, events would have developed on the following lines: An increase in the paper circulation causes a corresponding rise in the level of prices at home. These higher prices encourage imports and make export more difficult. They tend, therefore, to make the trade balance, and with it the balance of international indebtedness, unfavourable. When the latter balance is passive, the demand for foreign currency increases and the rates of foreign exchange are forced up. A glance at the figures given above shows, however, that this chain of reasoning does not apply; in fact, it is immediately obvious that in the case of Germany the increase in the note circulation did not precede the rise in prices, and also that the depreciation of the currency followed it but slowly and at some distance of time. The twenty-three-fold increase of the note circulation cannot possibly be the cause of the 10 times greater rise in prices at home and of the 15 times greater rise in prices of imports and of the dollar rate. A conception of the general and comprehensive outline of the interplay of causes in these developments can, in fact, be obtained only if foreign exchange is made the starting-point.

For the following, if for no other reason, the collapse of the German exchanges will be seen to be in no way related to the increase of the note circulation. At a dollar rate of 21,546, the rate quoted on the 25th January 1923, a gold mark was worth about 5000 paper marks. The note circulation of the Reichsbank, which at that time amounted to 1654 milliard paper marks, thus represented a value of only 330 million gold marks. This is not much more than $\frac{1}{200}$th of the gold value of the German currency circulating before the outbreak of war. It is, of course, true that the War and the Peace conditions restricted the economic activity of Germany, and thereby also the money turnover, and, further, that the rise in home prices was considerably less than the rise in the rates of the gold exchanges at the end of January 1923; nevertheless, there can be no doubt that the economic requirements of Germany could not possibly have been met by a circulation of $\frac{1}{200}$th of its pre-war gold value, and that, therefore, the increase in the circulation could not have kept step, even approximately, with the depreciation of German money. This also explains why the catastrophic collapse of the mark, which began towards the middle of 1922, was, notwithstanding the avalanche of notes, accompanied by an acute shortage of money, which led to unprecedented rises in the rates of interest charged by the Reichsbank, and the still greater rises in the rates charged in private transactions.

The theory which attributes the collapse of the German currency to "inflation" is based on the *petitio principii* that the foreign value of money, which finds its expression in the rates of foreign exchange, can be determined only by the quantitative factor of the paper circulation. In the above case, however, in which it has just been shown that the increase in paper remained far behind the currency depreciation, the causes of the collapse in the foreign exchanges, which are independent of the development of the paper circulation, are quite clear. We are dealing with a country whose international indebtedness, quite apart from payments and deliveries due under the Treaty of Versailles, was passive to the extent of about 3 milliard gold marks,[1] and the London Ultimatum added to the country's indebtedness an annual payment of "reparations" estimated at about 3·3 milliard gold marks. To this were added the payments imposed upon Germany for the "clearing" of pre-war debts and gold payments to the occupying Powers. The annual passive balance of the German balance of international indebtedness was thereby increased to more than 7 milliard gold marks. Anyone, then, who took the trouble to form a true estimate of the position could not doubt that the attempt to fulfil these impossible obligations would necessarily result in a complete collapse of the German currency. On the occasion of the negotiations concerning the acceptance or rejection of the London Ultimatum, the author predicted, in agreement with the President of the Reichsbank, that the acceptance of the Ultimatum and an attempt to observe its terms would lead to an abysmal fall of the German currency (*Sturz ins Bodenlose*). The unavoidable catastrophe became evident when hopes, built upon an attempt to fulfil the Ultimatum, proved to be ill-founded; when the announcement, made in desperation, of the German willingness to pay did not prevent the loss of Upper Silesia in the autumn of 1921; when the conference held in Genoa in May 1922 failed; when M. Poincaré, by opposing all suggestions for a revision of the London plan, succeeded in June 1922 in preventing the settlement of the reparations question by an international loan, and a month later replied to the German request for a moratorium by giving notice of the "policy of productive sanctions," and by threatening to occupy the Ruhr area; and when finally France and Belgium in January 1923 initiated their policy of open violence by invading the Ruhr.

The necessary and direct consequence of the soaring gold exchange rates, in which the collapse of the German currency found expression, was a corresponding rise in the prices of all commodities which Germany imported from countries with high exchanges. Owing to the importance of imports for feeding

[1] See the author's *Politik der Erfüllung*, 1922, pp. 24, 25.

the population and for German industry, the high cost of imports would, of necessity, be reflected in wages and salaries, and ultimately also in the prices of goods produced in the country. The extent to which this state of affairs increased the private demand for money, and the calls by German concerns on the Reichsbank, is shown by the expansion of the trade bills discounted at the Reichsbank during the period of collapse. Bills of exchange held by the Reichsbank grew from 4946 million marks on the 7th July 1922 to 697,216 million marks on the 31st January 1923. The rise in wages and salaries, combined with the higher prices of all materials, led of course to a rise in the expenses of the Reich, and as the revenues of the Reich could not rise at a corresponding rate, the floating debt, and accordingly the calls of the Reich upon the Reichsbank, were forced up. The stock of Treasury bills discounted by the Reichsbank rose from 185 milliard marks on the 7th July 1922 to 1609 milliard marks on the 31st January 1923. These enormously increased calls by the German public and by the financial authorities upon the Reichsbank could only be met by the bank by an increase in the note issue—from 173 milliard marks on the 7th July 1922 to 1984 milliard marks on the 31st January 1923.

The chain of causes and effects is, therefore:

First came the depreciation of the German currency by the overburdening of Germany with international liabilities and by the French policy of violence. Thence followed a rise in the prices of all imported commodities. This led to a general rise in prices and wages, which in turn led to a greater demand for currency by the public and by the financial authorities of the Reich; and finally, the greater calls upon the Reichsbank from the public and the financial administration of the Reich led to an increase in the note issue. In contrast, therefore, to the widely held view, it is not "inflation" but the depreciation of the currency which is the first link in this chain of cause and effect. Inflation is not the cause of the rise in prices and of the depreciated currency, but the latter is the cause of the higher prices and of the greater volume in the issue of paper money.

The above reasoning, far from being contradicted, is confirmed by the course of events from the end of January 1923 to the time when this book was completed. These events may be summarised as follows: A fall in the dollar rate from the maximum point of, roughly, 50,000 marks at the end of January to 22,000 marks, and its approximate stabilisation at this figure; a fall of the index number for imports from 11,176 on the 5th February to 6577 on the 24th March, and of the index number for home products from 4925 to 4477 during the same period; a rise in the stock of bills held by the Reichsbank from 697 million marks at the end of

January to 2586 million marks in the middle of April, in the stock of discounted Treasury bills from 1609 to 5440 milliard marks, and of the note issue from 1984 to 5838 during the same period.

Thus during this period prices fell with an improving exchange. The fall was most marked in the prices of imported goods, which previously had directly and completely followed in the wake of the rise in the gold exchanges. The fall in the prices of home produced goods was less marked, as these had not previously adjusted themselves to anything like the same extent to the higher rates of exchange. Yet while rates and prices fell, the note issue increased threefold during these ten weeks.

It is scarcely possible more clearly to prove that prices are independent of the quantitative factor of increase in circulation, and to demonstrate their dependence upon the course of the exchanges than by noting the fall in the level of prices and in the rates of exchange while the note issue was increasing in excess of anything previously known. Thus far, therefore, the events from the end of January 1923 confirm the conclusions drawn from the events in the preceding period. On the other hand, in so far as the increase in the note circulation depends on the depreciation of the exchanges, the course of development in the last ten weeks in which improvement in the exchanges coincided with enormous increases in the paper issue appears to contradict the experiences of the preceding period. But this contradiction is merely a superficial one. We need only bear in mind that the rate to which the dollar had, by the intervention of the Reichsbank, been forced down in February, and at which it had been approximately stabilised up to the second half of April (20,000 to 22,000 marks), is three times as high as the rate quoted even at the *beginning* of January 1923, and that the adjustment of the circulation to the depreciation of German money at a dollar rate of 20,000 to 22,000 marks, and to a wholesale index number of, roughly, 4800, had at the beginning of February by no means been reached, and has not even to-day (at the end of April 1923) been fully reached. As compared with the position in May 1921, we have for the 24th March 1923:

A dollar rate which has risen from 62·3 to 20,915—that is, 335 times.

An index number for imported goods, which rose from 15·2 to 6577—that is, 435 times.

An index number for home products, which rose from 12·7 to 4477—that is, 353 times.

A note circulation of the Reichsbank which went up from 71 to 4956 milliard marks—that is, 70 times.

Even to-day, therefore, we have, as compared with the position in May 1921, a depreciation of the currency, measured

by the standard of the dollar rate, and a diminution in the purchasing power of money at home, measured by wholesale prices, roughly five times the increase in the note circulation. That the note issue went on increasing even during the fall of the dollar rate and its stabilisation, is due to the fact that the process of adjustment of the currency in circulation to the level of prices as conditioned by the position of foreign exchanges had not been completed.

Thus a study of the general developments since the acceptance of the London Ultimatum shows that the chief factors in the unexampled revolution in the exchange relations between money and all other values are to be found on the side of money, not, however, in the quantitative variations in the circulation, which is so frequently regarded as the only conceivable cause of alterations in the exchange relations between money and goods, but in the rise in the rates of foreign exchange brought about by Germany having been overburdened with foreign liabilities and by political events. The quantitative change in the circulation appears as an ultimate effect of the currency depreciation.

Even, however, in this chain of cause and effect the quantitative changes in the circulation are not merely effect. We need not enter into the question whether the avalanche of notes loosed by currency depreciation and by its direct effect on prices and on the expenditure of the Reich would not, in the long run, exceed the volume required for adjustment to the higher level of prices and wages, and so lead to an inflation in the strictest sense of the word, which would, in its turn, necessarily result in a further rise in prices and wages and a further pressure on exchange rates. But independently of any such possibility it may be said that a monetary organisation which offered serious resistance to the unlimited expansion of the circulation would necessarily have exercised certain reactions on the course of the level of prices and wages, and also on the course of the foreign exchanges, which, owing to the relative ease with which the circulation of the German currency adjusts itself to the increased monetary demand caused by currency depreciation and by the rise in the level of prices and wages, have not occurred. But such reactions would have taken place, if at all, at the cost of uncontrollable crises and catastrophes; because if we were to follow the good advice given to us, and lay aside the note-printing presses, whilst the factors which adversely affect the German currency continue to operate, we should be depriving German economic life of the media of circulation necessary and indispensable for trade, for salary and wage payments, etc., so that in a very short time the local authorities and the State itself would be unable to pay their creditors, officials, and workmen. Then, in a few weeks, not only the printing-presses, but also the mines and factories, the railways

and post-offices, and the State and communal administration, in short, the entire communal and economic life, would be at a standstill. The collapse of economic life, of the State, and of society would, however, do away with the insensate idea that the German nation is capable of meeting such tremendous reparation claims, and would thus destroy the root of the evil.

From the above explanation it follows that the "quantity theory" does not go very far towards the complete solution of the problem of the value of money. In considering variations in the exchange relations between money and other goods, utilities and services exchangeable for money, we are dealing with a many-sided complex of phenomena in which effect and counter-effect are so closely intermixed that, although the quantity theory may offer general rules for their disentanglement and elucidation, it cannot devise a formula of universal application.

¶ 12. The Effects and Concomitants of depreciated Money viewed in the Light of recent Events in Germany[1]

If, on the basis of the experience of the last few years, we attempt to co-ordinate the depressing and confusing jumble of events connected with the idea of "depreciated money," these events and phenomena may be classified as follows:—

1. Displacements in the relative wealth and income of the various groups of the population (the problem of distribution).

2. Changes in the movements in the economic system (the problem of production).

3. Disturbances in the sphere of public finance (the problem of finance).

1. *The Problem of Distribution*

The depreciation of money, as expressed in the exchange relations between money and other goods, is not a uniform phenomenon. The variations in the exchange relations themselves differ extraordinarily in degree. Claims of all kinds expressed in fixed sums of money share to the full the fate of the depreciating money. Intrinsic values which do not represent money, such as real and personal property, means of production, articles of use and consumption, rise in price in terms of the depreciating currency, though the degree of the various increases differs. The same applies to utilities and services. Therefore, when a depreciation of money as enormous as that which Germany has had to suffer after the War takes place, there are vast disturbances of wealth and income, and accordingly of the social stratification of the nation.

What strikes the eye most is the alteration in the relations

[1] [The reader is requested to remember that these passages all refer to the period anterior to the stabilisation of the German currency in November 1923, after the death of the author.]

between creditor and debtor. The depreciation of the German currency to $\frac{1}{1000}$th part or less of its original gold equivalent is, in practice, synonymous with total expropriation of all original claims expressed in German currency and of incomes accruing therefrom. What proportion of the total national income is here involved is illustrated by the following figures:—

Careful calculations gave for the aggregate national income of Germany before the outbreak of war a figure of about 210 milliard gold marks.[1] Evidences of indebtedness issued by the Reich, and by the individual States, communes, and associations of communes, amounted to a total of about 25 milliard gold marks. The bonds in circulation issued by German land-mortgage institutions amounted to about 18 milliard gold marks, and industrial and similar bonds to about 5 milliard gold marks. In all—excluding mortgages not represented by mortgage bonds and excluding also other long-term money claims not represented by securities—we had, before the outbreak of war, an aggregate of long-term money claims to the amount of at least 60 milliard gold marks. During the War nearly 100 milliard marks were added in War Loan, so that at the end of the War the long-term money bonds amounted to about half of the aggregate national wealth available before the War. We must further take into account life insurance policies, endowment policies, and annuities. Endowment insurance alone amounted in 1912 to about 16 milliard marks. To this we must add deposits in the public and other savings banks, the amount of which, at the outbreak of war, was about 20 milliard marks, and over 30 milliard marks standing to the credit of clients in German financial institutions.

The owners of all these securities and bonds, in so far as they did not dispose of or encash their claims betimes, now possess, as a result of the depreciation of money, only a fraction of a thousandth part of the original value measured in terms of gold, of foreign high-value currencies, of wholesale prices, of the cost of living, or in terms of any other kind of standard. If a man possessed in those days in the form of such securities and bonds a capital sum of one million marks and an income of 50,000 marks, he could well be regarded as a man of substance who did not know what it meant to worry to provide himself with food, and who could allow himself every comfort and luxury; nowadays a man with the same nominal wealth and income is, unless he can earn a living by his own work, a beggar. A million marks represents to-day the income and expenditure of an unskilled workman for three months. Interest amounting to 50,000 marks represents the wages of labour for four or five days! And we have to remember that in Prussia in the year 1917 out of 1,980,608

[1] See *Deutschlands Volkswohlstand, 1888–1913*, 7th ed., 1913, p. 112.

persons possessed of a fortune of 6000 marks or more, there were only 10,363 persons with more than a million marks.

German capital invested at fixed interest, representing an accumulation from the work and savings of generations, and constituting a large part of the aggregate private wealth, has thus been practically destroyed by the depreciation of money, and with this destruction went the basis of subsistence of large sections of the population living, in the main, on inheritances and on their own savings. This catastrophe has hit, not only the workman with deposits in the savings bank and the so-called "small capitalist," not only the middle classes, but also those of the once rich, whose wealth consisted in German bonds. These classes of "capitalists" did not, in Germany, constitute a class isolated from those actively engaged in production, but were in fact closely intermingled with the producing classes; they had very largely accumulated their wealth from the results of productive activity, and used it both as an insurance for old age and more especially for bringing up their children to be useful members of society, or for the service of the State. These classes, whose savings enabled them to employ capital for purposes over and above those of providing themselves with the elementary necessities of life, at the same time handed on the torch of economic and intellectual progress. How far the catastrophic destruction of these classes is affecting and will affect the further development of Germany cannot be estimated.

We must next try to find who profited by the losses suffered by the owners of bonds and of fixed interest-bearing securities, for debts and claims stand in a reciprocal relation, in which loss on the one side must be balanced by profit on the other.

The largest debtor, considering the enormous sums of War Loan and of Treasury bills, the period of which is continually being extended, is the Reich. The Reich has, in effect, seen its indebtedness, which at the end of the War amounted to about 150 milliard marks, shrink to practically nothing. But the advantage reaped by the State by the removal of this burden has not been visible under the pressure of other factors with which the Reich has been burdened. In March 1923 the average daily expenditure of the Reich amounted to 156 milliard marks—that is, the nominal amount of expenditure in one day was more than the entire indebtedness of the Reich spread over more than four years of war! The Reich has not become any richer by the losses incurred by its creditors, any more than a bankrupt concern is made the richer by such losses. Any advantage which might have accrued to the Reich by the continued reduction of its debt has throughout been more than counterbalanced by the growing deficit in its budget. The position is similar in regard to the debts

of the States and communes. Nowhere do we find that the destruction of the property of creditors is really counterbalanced by an increase in the property of the debtors. The depreciation of money thus works in such cases as an absolutely destructive force, and not as merely a redistribution of wealth.

A different aspect, however, appears to be presented by the depreciation of money claims against private debtors, *i.e.* of land mortgages, loans raised by industrial concerns, deposits in savings and other banks. In these cases the losses of creditors appear to have as their counterpart a corresponding enrichment of the debtors.

But in these cases also the matter is not quite so simple. First of all there must be excluded as possible vehicles of gain all those undertakings and institutions whose own obligations to pay have their counterpart in their own money claims against others. What ordinary and savings banks gain from their creditors by the depreciation of money, they lose as against their debtors and in the matter of their holdings of fixed interest-bearing securities, mortgages, etc., which they hold as cover for their own liabilities.

Certain reservations must, however, be made in those cases in which the debtors possess assets, consisting of "goods" which correspond to their liabilities in terms of German money, *i.e.* property owners and farmers who have mortgages on their property, or industrial undertakings which work with considerable bank credits or have issued bonds. The nature of the factors which, in their ultimate effects, in such cases also show a counterpart to the enrichment of the debtor resulting from the depreciation of money, and which can in part wipe out such enrichment, is most clearly shown in the case of house property in towns. Certainly in these cases monetary depreciation operates as an instrument which almost completely relieves the mortgagor of his debt. But is this freeing from debt, even in a partial degree, to his advantage? The control of dwellings and of rents has up till now been able to keep the prices of these so low, when compared with the rise in all other prices, only because the owners of houses have been practically freed from their mortgage debt by the depreciation of money. If in the years since the War the owner of a house had been under an obligation to pay interest on the mortgages which he owed, even approximately on the basis of their original gold value, it would have been quite impossible to have preserved his rents on a basis which in February 1923 corresponded (as is shown by the cost of living figures issued by the Statistical Office of the Reich) to only $\frac{1}{56}$th of the index figure for food. The figure for rent was 58 and that for food 3183. The burden of protection of tenants has thus been borne not only by the house-owner but also by the owner of mortgages on town

property. The profit from the depreciation of these mortgages has not entirely fallen to the share of the house-owner. Another part of it, up till now by far the greater part, has been consumed by the tenants in the form of rents, which have remained at figures far below the depreciation of money. In this we have another instance of absolute consumption and not of a redistribution of wealth.

The compulsory control of agriculture, and latterly also of bread prices, has had effects similar to those resulting from the protection of town tenants. This policy could not have been carried out without the process of debt reduction which was brought about by money depreciation. The mortgage creditors have contributed substantially to the cheapening of the necessaries of life, and their mortgage claims have, in large part, been consumed by the masses in the form of cheap bread.

In the case of industrial and commercial undertakings we observe that the after-effects of the War and of the Revolution have resulted in working expenses rising considerably more than production. The falling off in the physical working capacity of workers, the systematic shortening of working hours, the fight against methods of labour which give an impetus to work, the calls made upon the forces and hours of labour by unproductive occupations, the contraction of sources of supply of raw materials by the crippling of the territory of the Reich, and the increased cost and difficulty of importing raw materials from abroad and of exporting the manufactured product caused by the loss of the German colonies and of the greater part of German undertakings abroad, as well as by the surrender of the German merchant fleet —all these factors necessarily affected detrimentally the productivity of labour. The result was that the net output shrank and the real capital itself was in many cases consumed, so that only the apparent gains due to the depreciation of money were seen, and they concealed the true state of affairs. In this process of development the release from both long- and short-term debts caused by the depreciation of money had frequently no greater effect than that of merely a trifling counterweight to the heavy burdens thrown upon the processes of production. These inroads into the essentials of production were not only a burden to the *entrepreneur* in conducting his business, but even more so to the creditor whose claims were the first to be swallowed up.

The losses, calculated in all as about 200 milliard gold marks, suffered by the owners of fixed interest-bearing values and bonds have thus only partly enriched the debtors; in part they were swallowed up by the evanescence of German wealth, a process to which the entire economic system was subjected.

How little this evanescence of German wealth was confined to fixed interest-bearing securities and claims is shown by the figures

given above (para. 10) in the quotations of prices, etc., of German stocks and shares. It is true that as, at the end of 1922, the quotation of German shares was on the average 54 times the pre-war rate, and, with subscription-rights, even 90 times, this was enormously more favourable than the position of the fixed interest-bearing papers, which remained at their nominal value; but as the dollar rate at that time gave for one gold mark the value of 1800 paper marks, the ninetyfold price of shares in paper marks was only $\frac{1}{20}$th of their original value in gold money. And although in the year 1922 the total dividends of public companies reached the amount of 25 milliard paper as against about 1560 million gold marks (the figure of the year 1913), so that this was certainly more than 16 times as much on the nominal value, yet in gold value it was only about 3 per cent. of the total of 1913 (see above, p. 591).

The insufficient adjustment, as seen from the share quotations, in the value of industrial and commercial property to the depreciation of money as expressed in the foreign exchange quotations, in the price level and in the cost of living, has its cause not, or at least not primarily, in material depreciation of the technical equipment, machinery, etc., of business concerns, but in the alteration in the conditions of profitable working of such concerns, which follows partly from the reduction, already dealt with, in the productivity of the economic processes, and partly from the heavy burden of the changes in the distribution of the results of production between capital and labour.

It has been shown on p. 545 *et seq.* how great is the influence upon the process of depreciation of money of the power wielded by various economic groups—buyers and sellers, employers and employed. Now the power of labour, as against that of capital, has been very much increased by the War in the whole world, and especially in Germany, in which country this end has been aided by eternal political convulsions, so that, while labour in Germany could not altogether escape the consequences of the frightful weakening of German production, it was yet able to shift a very considerable part of these to the shoulders of capital, and to bring about a far greater degree of adjustment of its wages to the money depreciation as expressed in prices and in cost of living than the capitalist was able to do in regard to his capital.

The displacements in this sphere as compared with pre-war days, even as early as the year 1920, are shown in a memorandum published in September 1921 by Deutsch,[1] the Chairman of the Board of Directors of the General Electric Company (A.E.G.).[2] The memorandum is based upon an investigation of the circumstances of 152 companies with a nominal capital in shares and

[1] [Published by the Berlin Chamber of Commerce.]
[2] Allgemeine Elektrizitäts Gesellschaft.

bonds (including reserve funds) of about 10 milliard marks and an aggregate of 1,350,000 employees and workmen.

In the case of these 152 companies the business year 1919–20 showed:

Salaries and wages paid	. .	16 milliard marks.
Rates and taxes ,,	. .	2·2 ,, ,,
Dividends ,,	. .	650 million ,,

Expressed in percentages we thus have the result that of each 100 marks the amounts spent under each of these three headings were:

On salaries and wages	. .	84·9 marks.
,, rates and taxes	. .	11·7 ,,
,, profit on capital	. .	3·4 ,,
Total	. .	100 marks.

The profit on capital thus amounted to only 4 per cent. of the salaries and wages paid.

On the average of the ten years 1908–1917 the same companies showed, for every 100 marks:

Salaries and wages	. .	76·7 marks.
Rates and taxes	. .	11·7 ,,
Profit on capital	. .	11·6 ,,

Thus the profit on capital amounted at that time to over 15 per cent. of the wages and salaries paid.

Already in 1920 the share allotted to profit on capital had been decreased, in relation to the share allotted to wages and salaries, to little more than one-fourth of the corresponding amount for the years 1908–1917. This process has been going on ever since. After many sample tests we are driven to the conclusion that in the year 1922 the share of the profit on capital was scarcely more than 1 per cent. of the wages and salaries paid.

Even this beggarly share could accrue for the shareholders only because, apart from the drop in the real value of their debts, the amounts placed to reserve, at each rise in the paper mark figures, remained, in their gold value, far below those which were previously regarded as necessary; and because, further, the writing-off of proportions of the original prices paid for plant, etc., lost all relation to the cost of future replacement in terms of paper money; and, finally, because apparent profits on the stocks of goods, which by reason of the depreciation of money stood in the books at the end of the business year at figures higher than at the beginning of the year, have frequently been treated as real profits. Actually a great many German concerns are living on their assets.

Not only are the profits allotted to capital taken from the assets, but also wages and salaries are in part actually paid from the assets of undertakings.

The results of the tax on capital profits and of the income tax confirm this view. Even in the financial year 1921, the former tax, which, as is known, raised at the source 10 per cent. of all income from capital (interest on bonds and securities, dividends, and other distributions of the profit of industrial concerns), produced 1487 million marks, *i.e.* about 5 per cent. of the amount of 28,146 million marks produced by the income tax. In the financial year 1922 the capital tax, with a figure of 2688 million marks, yielded only half of 1 per cent. of the produce of the income tax which brought in 533,341 million marks. Thus, as compared with the income tax, the results of the capital tax diminished to one-tenth between the years 1921 and 1922. In fact, in the month of March 1923 the result of the capital tax—505 million marks—was only ·27 per cent. of the amount of 189 milliard marks yielded by the income tax. As the effective rate of income tax, taking the considerable allowances made to the lower grades of income into account, could not, on the whole, have substantially exceeded the 10 per cent. which is the basic rate for the tax on profits of capital, these figures show that the income from capital in the last year of the catastrophic collapse of the German currency became an almost negligible part of the aggregate national income. This course of developments is pointedly illustrated by the fact that the financial authorities of the Reich have had to abandon the collection of the tax on capital profits, as the costs of collection exceed the amounts collected. The tax on interest on capital has now been embodied in the Corporation Tax (Act of the 30th March 1923, amending the tax laws as necessitated by the depreciation of currency).

But the development has not been confined to a radical alteration in the relations between capital and labour. Even within the wide category of labour itself the adjustment of wages to monetary depreciation has not been uniform. The wages of unskilled labour have in the main followed the rise in the cost of living, whilst the adjustment to the higher level of prices lessens where more highly skilled and mental work are concerned. If, measured by the cost of living, the unskilled labourer in the employ of the State drew in February 1923 70 per cent. of his real pre-war wage, and the higher official only 30 per cent.; if at the end of this chain we see the indescribable misery of the professional man; if we contrast all those phenomena, which we are accustomed to describe by the phrase "intellectual misery," with the position of the cigarette-smoking, undersized "proletarian," we recognise that, in the struggle for existence

engendered by the impoverishment of the German nation and by a depreciated currency, the "horny hand" has so far had the best of it, and that the German nation is threatened, not only by a material, but by a spiritual, proletarisation. The problems arising out of the destruction of interest-earning savings and the levelling down of wages for intellectual and specialised work are not so much questions of the distribution of wealth and income as of the future fate of the German economic and cultural system.

2. *The Problem of Production*

Our remarks concerning the results of the depreciation of the currency in the sphere of wealth and income have shown that these effects and concomitants do not exhaust themselves by merely revolutionising the distribution of wealth and income, but that they also affect the productive efforts of the country.

The very weakening of the national consumptive capacity, and the redistribution within such diminished consumption brought about by the destruction of income from savings and by the depreciation of real values, must in any case have caused a serious disturbance of production. In addition, the productive apparatus is crippled by the insufficient creation of new capital and by the loss of existing capital as explained above. Insufficient writing-off and allowances for future replacements and improvements constitute a danger which cannot be underestimated.

Apart from the threatened incapacity of German industry to maintain competition by a constant renewal and development of its machinery, there is the danger of the gradual wearing out of the available equipment. Expenditure upon the scientific and technical examination of methods of production is restricted to a marked degree. Deutsch is right when he says in the memorandum mentioned above:

"German industry marched at the head of technical progress before the War by the creation of new plant, and by the ceaseless study of new ideas as they arose. The situation has shifted in a terrifying degree to the disadvantage of Germany. The distressing position of our currency makes it almost impossible for us to compete with countries which enjoy a stable currency, and it seems scarcely possible to raise the enormous funds necessary for modern progress and in order to bring our factories to the most efficient state and to create for our products an ever-widening market. As long as German industry is no longer in a position to raise large sums for new construction, patents, and research it cannot regain its previous position and reputation in world trade."

Even worse is the fact that the levelling of wages for all kinds

of labour not only does harm to the wages of our skilled workmen, our engineers and technicians, our skilled commercial employees, our economic organisers and leaders, and, in fact, of all our brain workers, who by their activities indirectly advance the process of production, but by withholding from them the necessary means for their education and services and by damping their enthusiasm and capacity for work, endangers to the gravest extent the training of a new generation to take their place in the future. Everyone who knows how much German trade and industry, no less than German agriculture, are indebted to the skilled labour, the technical and scientific education, and the activity of German scientists and students, can imagine the import of this danger. In this course, spiritual proletarisation will accentuate and accelerate material proletarisation.

But we need not concern ourselves with future forebodings, for the depreciation of money of itself jeopardises the very basis of every rational economic organisation. Violent fluctuations in the value of money render illusory all exactness in calculation and all accounting. The prices of materials, wages and salaries, and other expenses can no longer be calculated in advance, prices to be obtained for products can no longer be estimated, and unforeseen fluctuations in money value upset all calculations of profits and make it impossible to proceed on a methodical system. The changes in money value which take place in the course of the economic year swell balances and show illusory profits where actually heavy losses have occurred. When the deciding factor in regard to the success or failure of business transactions is primarily the state of the currency, then diligent and rational work loses value and becomes discouraged. Economic life becomes dominated by speculation which demoralises the masses of the population, and those elements come to the fore which find their peculiar capacity in exploiting the movements of the continually fluctuating prices of values which represent wealth. Just as honest work, so also thrift is killed. Where values vanish overnight there is no point in accumulating them. Quick profits are quickly spent. Impoverishment is supplemented by waste.

The disturbances in the economic position are aggravated by the very high rates of interest. In April 1923, the Reichsbank raised its official discount rate to 18 per cent., a figure never previously known. In private transactions very much higher rates are paid. In these high rates we find expression of the fact that, as has been shown above (p. 604), the increase in the volume of the circulation has been far from keeping pace with the depreciation of money, and, further, that the lenders of money endeavour to insure themselves against the risk, during the period of the loan, of any loss due to further depreciation of money.

It has been argued that all these factors which paralyse productiveness may be counteracted by the impetus given by falling exchange to the export trade of the country concerned. It is true that certain branches of German industry were, for a time, able to undercut prices on the world market in competition with foreign industry. But this "dumping" was weakened by the considerable export duties imposed by the German Government, by additions, based on the exchange, made to export duties, and by various restrictive measures which have been imposed upon German exports by a number of foreign States. If, notwithstanding all this, German concerns can still compete on the world market, a competition which is considered as a throwing away of goods, it is only by reason of calculations which do not sufficently heed the depreciation of money in connection with stocks of goods, with writing-off, and with the formation of reserves—that is, at the cost of the essential means of business, and, accordingly, at the expense of the future.

On the whole, the effect of the depreciated currency on the German export trade has not been able to prevent a smaller reduction in German imports than in German exports, as compared with the last year before the War, so that a very unfavourable balance of trade has resulted. In the four years 1919-1922, imports amounted in all to 25·5 milliard gold marks, exports to only 14·5 milliard gold marks, the passive balance of trade being thus 11 milliard gold marks. On an annual average of those four post-war years, imports reached 60 per cent. and exports only 36 per cent. of the position of 1913, the passive balance of trade, amounting annually to 2·75 milliard marks, being thus nearly five times as large as in 1913. Far from being improved by the breakdown in the German currency, the German trade balance has aggravated the collapse of that currency.

On the other hand, the collapse has produced to the full the other effect expected by theory, namely, that of rendering impossible the investment on favourable terms of foreign capital in Germany. No foreign capitalist would consider it a practical proposition to give German concerns or German public bodies credit repayable in German currency. The heavy losses which foreign speculators have suffered through such transactions in German marks have frightened them away. The German who seeks credit must, therefore, in so far as he may still be able to obtain it from abroad, bear the risk of possible rises in exchange, and over and above this he must submit to very severe conditions in regard to interest and commission.

Apart from the lending of capital, foreign investors have shown great interest in German securities, an interest which, however, is most serious for Germany. The fact that the prices of rural and

urban land and of shares in all kinds of German undertakings have not risen to a degree at all corresponding to the depreciation of the currency, makes it possible for foreign capitalists to procure German securities of all kinds for a mere song. It has been shown that, translated into American dollars, the shares of the Gelsenkirchen mines stood at the end of March 1923 at a price which was only about 7 per cent. of the price in January 1914, notwithstanding that this concern did not in any way water its capital by the issue of new shares. And yet these Gelsenkirchen mining shares are a relatively favourable case. The total share capital of the "Deutsche Bank," with a nominal value of 800 million marks, represented at the end of March 1923, when the quotation was about 250 times as much, a value of 200 milliard paper marks —that is, 10 million dollars. In 1913, for the purpose of buying the shares of the Deutsche Bank—which at that time had a nominal value of only 250 million marks—America would have required 60 million dollars—that is, six times as much as would be required to-day to buy the entire capital, which has been increased threefold! As a result, the transfer of German institutions to foreign ownership has taken on terrifying proportions. A very considerable part of the house property, especially in large towns, has been so transferred, and shares in world-renowned German industrial and trading concerns are being continually bought up by foreign purchasers to an extent which cannot be fully ascertained. In many cases this course of events rendered it necessary to make special provision by the creation of preference shares with a greater voting power and the tieing up of these shares in reliable hands, to prevent the direct control of the concerns passing into the hands of the foreign purchaser. The sale of German goods at ridiculously low prices has, therefore, been supplemented by the much more serious and more widespread sale, at similarly ridiculous prices, of German productive wealth. The German nation is thus in danger of becoming the slave of foreign capital.

It is true that the depreciation of money is not the primary and only cause of this fateful development. The destruction of a large part of the German national wealth, the paralysis of the German power of production, and the passing into foreign hands of German economic institutions, are all rooted in the consequences of the result of the War and in the Treaty of Versailles. The depreciation of German money cannot be properly understood unless considered in conjunction with these deeper causes of German misery. But the depreciation is the most important medium through which those causes operate.

3. *The Problem of Finance*

The depreciation of money has caused disturbances in the budgets of public corporations no less serious than those which have been caused in private households and firms; in fact, as, in the case of public budgets, the counteracting factors which operate in private concerns are to a large extent lacking, the disturbances are even more far-reaching and threatening. Budgeting whilst money continues to depreciate becomes a farce, and attempts to make revenue meet an expenditure which increases like an avalanche become absolutely a waste of effort. At each new fall in the value of money the material and personal expenses adjust themselves to the depreciation of money in the prices, salaries, and wages which must be paid; whereas for a large part of the revenue such adjustment is either impossible or is possible only at a very slow rate. An immediate and direct adjustment is only possible in the case of those taxes which are raised by way of a percentage of the value of products or turnover (*e.g.* taxes on coal, turnover, and capital transactions). This is also the case with deductions made at the source from wages and salaries, and with income tax deducted at the time when the wages and salaries are paid. Finally, it is possible with taxation levied at the source on profits on capital, although in that case only to the quite minor degree to which the profit on capital itself becomes adjusted to the depreciation of the money. No adjustment takes place in the case of taxes on consumption which are raised by specified amounts of money based on the measure or weight of the taxed commodity (*e.g.* taxes on beer and sugar). A slow adjustment which always lags behind the depreciation of money takes place in the case of taxes on income and wealth which have to be assessed, because in such cases several months at least are required for the purpose of assessment for a past period of time, or for a definitely fixed assessment date, and the tax is then paid in a currency which has once more become depreciated as compared with the currency in which the income was drawn and the wealth assessed. An automatic adjustment is impossible until the currency has been stabilised. The law of the 31st March 1923, which provides that the depreciation of the currency should be taken into account in connection with taxation, offers no solution to this serious problem, and is only an emergency measure.

The serious consequences, notwithstanding the unprecedentedly heavy taxation, which these circumstances have brought about in the finances of the Reich may be seen from the Budget for the financial year 1922–23. This is shown in the following statistical table:—

Month.	Milliard Marks.							
	Revenue.	Ordinary Expenditure.	Excess of Revenue over Ordinary Expenditure.	Expenditure on Subsidised Services.	Excess of Revenue over Expenditure, inclusive of State Subsidies.	Expenditure due to Peace Treaty Requirements.	Total Budget Deficit.	Dollar Rate in Berlin.
1.	2.	3.	4.	5.	6.	7.	8.	9.
1922.								
April .	14·5	7·0	+ 7·5	0·3	+ 7·2	16·2	9·0	291
May .	21·0	12·3	+ 8·7	0·9	+ 7·8	16·1	8·3	290
June .	21·6	11·1	+ 10·5	2·8	+ 7·7	13·5	5·8	317
July .	26·1	20·4	+ 5·7	1·9	+ 3·8	16·6	12·8	493
August .	42·0	34·4	+ 7·6	12·0	— 4·4	19·1	23·5	1,135
September	44·4	96·0	— 51·6	42·5	— 94·1	25·5	119·6	1,466
October .	67·9	100·4	— 32·5	71·1	— 103·6	49·1	152·7	3,181
November	144·9	163·2	— 18·3	78·9	— 97·2	138·1	235·3	7,183
December	231·0	441·7	—210·7	257·3	— 468·0	188·0	656·0	7,589
1923.								
January .	360·5	301·5	+ 59·0	195·0	— 136·0	450·7	586·7	17,972
February	521·2	868·1	—346·9	735·8	—1082·7	423·9	1506·6	27,918
March .	794·7	1747·2	—952·5	1304·1	—2256·6	756·3	3012·9	21,190

This table shows that the enormous burden of taxation which the German nation imposed upon itself was not by any means borne in vain up to the second half of the year 1922. The revenues of the Reich, which, whilst the currency remained relatively stable, were rising rapidly (column 2), were sufficient not only for the expenses of the internal administration (column 3), but the growing surplus (column 4) sufficed for the necessary subsidies to various working departments, railways, and post-offices (column 5), and still left a fair surplus (column 6) after these subsidies had been paid. In June 1922 the surplus after the ordinary expenditure of the Reich had been met reached the maximum figure of 10·5 milliard marks. The surplus of the revenues of the Reich over the administrative expenditure and the subsidies to the various working departments amounted in April to 7·2, in May to 7·8, in June to 7·7, and in July to 3·8 milliard marks. At the average rate of exchange for the dollar in each of these months, the surplus in the quarter from April to June amounted to a little more than 100 million gold marks a month, and in the four months from April to July it aggregated about 350 million gold marks.

These surpluses were available for the expenditure required for the fulfilment of the Treaty of Peace. They did not, of course, nearly suffice for these requirements, but the total deficit in the budget of the Reich, including such expenditure, was decreasing month by month up to June (column 8).

A complete change in this favourable course of development in the finances of the Reich occurred when in June the Conference of Bankers in Paris failed to regulate the reparations question by an international loan, and when the French entered upon their policy of violence and brought about the total collapse of the German currency. The surplus in the revenue of the Reich over expenditure on administration and subsidies again changed to a deficit, and in proportion as the dollar rate rose (column 9) so also the deficit increased until ultimately, in the month of March 1923, a deficit of 3 billion marks was registered.

The exchange crisis has thus become for the Reich, the finances of which were on the high road to consolidation, a financial catastrophe. The floating debt of the Reich, in which almost fantastic developments are most clearly visible, rose from 312 milliard marks at the end of June 1922 to 528 milliard marks at the end of September, to 1822 milliard marks at the end of December, and to 8274 milliard marks at the end of March 1923. It is, of course, true that, as from the month of January 1923, the enormous calls caused by the French invasion of the Ruhr helped in the downfall of the Reich's finances; but the decisive turn had already taken place at the beginning of the second half of 1922, when the fresh collapse of the German currency was brought about by French policy. Thus in the sphere of public finance also does the depreciation of money act as a medium for the forces which threaten the economic and intellectual life, and the political and social order of Germany with destruction.

¶ 13. The Ideal of a Currency with a Constant Purchasing Power

The final paragraph of the previous editions of this book also contained the above heading; yet in the days when the previous editions were written we had a state of the monetary system, not only in Germany but in almost all countries of economic importance, which, in so far as stability of money value is concerned, appears to us to-day an ideal state. In those days there was an interesting theoretical problem, a problem which played an important part in scientific literature but which was of no very great consequence in economic life. To-day, however, we are faced with a practical problem of the utmost importance, for the solution of which there is pressing need, a need as pressing as is that of a sick

body for medical help. In these circumstances the question arises how far the earlier theoretical speculations still hold good in the light of recent experiences, and how far they are of use for any practical solution of the problems forced upon us by the developments of the last few years. For that reason we shall begin by giving the final paragraph in the form in which it appeared in previous editions.

The Old Line of Argument

The desire for a stable currency is due to an appreciation of the results of changes in the value of money which are contrary to the principles of justice and which adversely affect economic development.

A money is sought, the supply of which can constantly be kept in equilibrium with the demand, so that of itself it may not influence general economic processes.

However much greater may be the security for a stable basis of monetary value which is offered by the precious metals, especially by gold, in comparison with other articles of value, and however much this degree of security can be increased by the elastic complement which the modern monetary system offers by means of media of payment based on credit, yet in the case of currencies based on the precious metals, the value of money is exposed to inherent influences which cannot be regulated by any plan.

In contrast with metallic currencies, we have found in paper currencies an organisation of money which, from the purely theoretical point of view, appears to place the control over the value of money in the hands of the State. In such an organisation, the supply of currency is not dependent on phenomena which are more or less beyond our powers, such as the output of the precious metals or the international movements of these metals. It is, in fact, entirely dependent upon the will of those authorities whose duty it is to issue the paper currency. The very nature of such an organisation of money would make it appear possible to have, at all times, absolute equilibrium between the supply of and the demand for currency, and so to secure stability of value, with complete independence of the currency from any economic phenomena.

A paper currency pure and simple constitutes in a certain sense the extreme point in the historical development of money. Whereas originally only articles of utility fulfilled the functions of money; whereas metallic coins can at any time be transformed into articles of utility by being melted down and worked up; and whereas the value of these coins depended, at first exclusively and later partly, upon the possibility of their being so transformed,

paper currency can be used only as money, and it is the pure embodiment of the money function. Both justice and the public interest, as well as the historical development of money, seem to point to paper currency pure and simple as the ideal organisation of money.

There exist, however, certain obstacles which cannot be overcome in practice and which make it impossible for us to reach this goal, which is logically the ultimate point of the development of money. So long as our economic and political institutions continue to be organised on their present lines, and so long as our insight into the economic connection of things is not much greater than it is in the present state of the science of political economy, paper currency will continue to be regarded in practice as an anomaly, and the connection of the value of money with one of the precious metals will continue as the most desirable and the normal state of affairs, and this for the following reasons:—

At first sight one would regard it as an advantage of paper money pure and simple that it places the State in the position of regulating the issue of money in accordance with the demand for it, and so of keeping money value absolutely stable, but great difficulties stand in the way of giving practical effect to this advantage. In the first place, we have no reliable criterion for the changes in the value of money. We need only look at scientific writings on money in which the criterion for an insufficient cover of the demand for money was sought partly in the fall of prices and commodities and partly in rising rates of discount, and we need only contrast with this the actual course of development in the last decades before the War as set out above (p. 565), in which not rising discount rates and falling prices, but rising discount rates and rising prices coincided with each other. According to the view of those who see an exact index of the value of money in more or less complicated statistics of prices, it would have followed that under a monetary system which placed the complete regulation of the supply of money in the hands of the State, the currency in circulation in Germany in the years 1897–1899 and from 1904 to 1907 should, in order to have counteracted the general rise in prices, have been considerably contracted, and this when the official rate of discount was at times 6, 7 and even 7½ per cent.! The crises which would have been precipitated by such a "regulation of the value of money" are almost inconceivable. The contrary policy would, on the other hand, have been pursued if the view held by those who see in the movement of discount rates the criterion of the demand for money had been acted upon, for under this conception the circulation of currency would have been increased by an expansion in the issue of paper money by the granting of credit at lower rates of interest, and this must have

still further artificially encouraged overproduction and overspeculation. If, however, we take the view that the factors which operate on the side of money and also, and to an enormously preponderating extent, the changes brought about in our economic organisation by the movements in the trade cycle, find their expression in alterations of prices and rates of discount, then which of these concrete phenomena should we take as the point of departure for the regulation of the value of money?

But the insufficiency of our knowledge is not the only obstacle. At least as important is the absence of any certainty that in the case of a paper currency pure and simple, the machinery by which the issue of currency is regulated would be handled in accordance with the dictates of justice and of public interest. Even to the State itself the unrestricted possibility of making money out of nothing is too tempting for us to feel quite certain that there would be no misuse of the power for fiscal purposes. Added to this, especially in these times of economic controversies, a fight would result between the interests concerned, and this fight would, in the absence of an objective criterion, be decided in advance, not by reason and justice but by brute force only. On the one side we should have all those who owe money fighting for the greatest possible issue of money and for the largest possible diminution in the value of money, and on the other side we should have creditors and all those in receipt of fixed salaries, dividends, and wages who would be interested in the preservation and the increase of the value of money. The fight which would be waged round the value of money would, more than any other economic conflict between various interests, necessarily lead to the demoralisation of economic and of social life. Such destructive controversies can be avoided—not completely, as otherwise we should never have had a "currency question"—by placing the value of money in a position of dependence upon one of the precious metals, the value of which is not within the sphere of influence of the economic parties, and the properties of which give a greater guarantee of security for an approximate stability of its value than has so far been observed in any other commodity.

The association of the value of money with that of one of the precious metals is, however, not necessary merely for the purpose of absolving the State from a duty which it cannot fulfil, and for preventing its regulation from becoming the bone of contention between brutal interests. It finds its main justification in the requirements of international trade. Disturbances caused in international trade relations by fluctuations in the reciprocal relations of value between the currencies of various countries have already been fully explained. We have seen that in practice it is possible to eliminate these fluctuations only because the

various countries connect the value of their money with one and the same money substance. The developments in the last decades (before the War) have brought about a state of affairs in which the majority of the countries which participate in the world's commerce have established the value of their money on the basis of gold. If these countries had paper currencies the values of which were independent of any concrete commodity, and which were regulated by measures of the States, which for their part would depend upon the irresponsibility and the changing power of conflicting interests, then a relation of any stability between the moneys of the various States could not subsist, so long as the total issue of paper currency for all the States was not uniform and so long as it was not controlled by *one* central institution. The conditions precedent for *such* a paper currency would be no less than those which would be necessary to ensure perpetual peace.

We may regret and criticise the fact that in a monetary system which is built up on a metallic basis the value of money is dominated by forces which cannot be controlled by us and which may conceivably at some time or other lead to a serious redistribution of wealth and to considerable disturbances in the economic situation. The past history of the monetary system may, however, reconcile us in this matter, as in so many other spheres, to the incompleteness which is inherent in all human arrangements, because the history of the various paper currencies forces us to the conclusion that the provisioning of a country with money, and consequently the determination of the value of money, is usually most unsatisfactorily regulated when the greatest degree of control is exercised by the human element. Even those who have the greatest belief in the capacity of humanity for intellectual and moral development cannot doubt that many a year will pass before the deficiency in human knowledge and the power of human self-seeking and passions will be sufficiently overcome to enable money, which is the carrier of all economic relations, to be freed without risk from its association with a universally accepted value.

The proper method for minimising the imperfections of moneys based on a metallic standard, imperfections the existence of which no one denies, lies in the development of those methods of payment and of banking which increase the degree to which money can adjust itself to the requirements of the country, and which thereby limit disturbances which are detrimental to the stability of money value.

New Considerations

During the last few years the view has been confirmed that stability in the value of money is subjected to the most serious disturbances just in the case of paper currencies which, on purely

theoretical grounds, permit of a methodical and complete adjustment of the circulation to the demand for money, and accordingly render possible the control of monetary value. We have seen that the factors which have compelled us to give up the gold standard and adopt a paper standard also, so long as they continue to operate, make it impossible systematically to regulate the currency and the value of money on the basis of the paper standard. It has further been shown that economic life and the State, as soon as the pressure of circumstances relaxes, find a point of support for the stabilisation of the local money in the money of such foreign countries as have retained the gold basis rather than in any criteria available in the country itself, criteria which might have been considered theoretically for the purpose of fixing money value. When the economic and financial recovery of England enabled that country to take in hand the reconstruction of her monetary system, this was not done by taking as a fixed norm of monetary value some index number of wholesale prices, of cost of living, or of wages, but the dollar rate which corresponded to the original gold parity, just as in the past Russia, Austria-Hungary, Argentine, and other countries which attempted to change from a greatly fluctuating paper currency to a stabilisation of money value, endeavoured to attain a fixed rate of exchange with gold standard countries.

The writer is convinced that Germany, too, when conditions become appropriate for a stabilisation of the value of money, will attempt to solve the problem, not on the artificially constructed basis of index numbers, but by the simpler method which is in practice sufficient to establish a fixed relation with the currencies of gold standard countries, just as the Reichsbank in January 1923 actually attempted to put a stop to the rise in prices—that is, to stabilise the internal value of money—by stabilising the dollar rate —that is, by way of the external value of money. If, however, the economic and financial strength of the country is not sufficient to bring about such relation with a stable foreign currency, then we cannot see how this strength can be sufficient to establish a fixed index number, which is at the best a conglomerate of prices and wages. The dollar is a simple and indisputable entity, which nowadays ranks throughout the whole world as the standard unit of value. The regulation of the mark on the basis of the dollar rate which is quoted from day to day on the foreign Exchanges is infinitely more easy to effect than would be its regulation on the system of index numbers, the construction of which must always be controversial and the application of which would necessarily entail the collection of masses of statistical data as well as tedious calculations. Over and above this, the technical possibility of regulating the relation of the currency to a foreign money unit by

influencing rates of exchange has been explored in practice in a number of important cases; whereas the problem of stabilising money value on the basis of index numbers constructed artificially from a large number of prices and wages has so far nowhere been tried, and if it is to be carried out by the expansion and contraction of the currency circulation, it must stand or fall with the pure Quantity Theory. The only practical aim which we should have, therefore, is that of establishing a fixed rate of exchange with the money of the world market—that is to say, a fixed ratio of value with gold.

Under the present political, economic, and financial circumstances this end still lies in the far distance. It is, therefore, easily understood that the many circles which suffer by depreciation and fluctuations in the value of the German currency do not allow themselves to be comforted by the prospect of attaining this goal, but give hard thought to the question of discovering a method by which, pending the final reconstruction of the German monetary system on a stable basis, it would be possible to alleviate the existing evils and to avert the serious dangers which threaten.

These endeavours frequently masquerade under names which make it appear as if the aim were to introduce a new stable medium of circulation in place of the continually depreciating mark. Such designations as "gold mark," "Neumark," "Festmark," " index mark" must give rise to such an impression. In point of fact, however, we are dealing in the case of such endeavours (which have already been mentioned above in the paragraph on the overthrow of the nominalist theory of value by the depreciation of money) with a somewhat different phenomenon. These attempts aim at retaining as a medium of circulation, because necessity drives us to it, the present fluctuating mark, which may possibly depreciate still further, but they at the same time aim at creating a new criterion for the true value of money debts and of the usual services which must be paid for in money, such as wages and salaries, etc. Thus Geiler defines the aim as that of "creating immediately a stable internal measure of value, and this, in view of the impossibility of any real basis, at first only in the form of an abstract unit of account" (Neumark). • Side by side with this stable unit of account the present currency would continue to be valid as a medium of payment and would, therefore, be placed in a changing relation to it. In accordance with this system the paper mark would continue to be a medium of payment for money debts expressed in this new unit of account, but for the purpose of determining the amount of paper marks to be paid in settlement of the debt, the ratio would be taken in which the paper mark stood to the fixed unit of account. The "Neumark" would then be the basis of the "Inland Purchasing Power of the Mark," which would be fixed by combining the existing index numbers.

A number of other attempts have been made on similar lines, except that in some cases, instead of the home index number, the average of the rates of the gold exchanges for specific periods of time, or the gold mark, is taken as a basis.

Geiler urges the gradual and optional introduction of his "Neumark," admitting its use in the register of landed property as well as permitting its employment in striking balances, in legal decisions, and in insurance business. Others, on the other hand, are in favour of a more general and compulsory introduction, possibly even with retrospective force in regard to money contracts previously concluded.

We have, however, pointed out elsewhere that by separating that which is "*in obligatione*" from that which is "*in solutione*," the unity of the monetary concept is split into two in a manner which cannot be permanently sustained. It was further pointed out that in the rye bonds and coal bonds—more recent instances have to be added to these in the shape of the gold bonds of the Rhein-Mine-Danube Company and the potash bonds of the Prussian States—the separation of the actual content of value from the medium of settlement of the money debts has been brought into actual being by way of unfettered agreement in individual concrete cases. This solution deprives money of its property as a store of value, in so far as debts payable in money are concerned, but the need of a stable store of value, which retains the advantages of being a claim for money without participating in the depreciation of money, is to some extent met by the contrivance. It does not, however, provide in any way against any further depreciation in the circulating currency. In any case we may perhaps say that the creation of such "valorised loans" does not make it impossible either to retard or to accelerate the process of depreciation of the money.

The position is substantially different when, in one form or another, an index currency is applied to the reward for services. In so far as wages and salaries are concerned, the index currency, whilst retaining the depreciating media of circulation, must in practice result in a system of "sliding-scales" for rates of wages and salaries. The results of practical experience of this system are available, especially from Austria, and are by no means encouraging. In a "memorandum regarding the sliding-scale for salaries" presented in September 1922 to the German Reichstag, the following remarks are made regarding the Austrian experiences:—

"In Austria, wages and salaries have been adjusted to the cost of living index both in trade and in industry, as well as in the case of State employees; in the contracts with the industrial employees, the sliding-scale addition was first made by the salaries

increasing or decreasing by a multiple corresponding exactly to the increase or decrease in the cost of living. . . . The adjustment took place at short intervals, at one time even, by reason of the rapid increases in the cost of living, twice within fourteen days. This system made it clear that in the purely mechanical adjustment of wages to cost of living the increase in that cost was frequently overestimated. It became clear at the negotiations carried on for the purpose of fixing the index that endeavours were being made to base the index on as high prices as possible so as to force it upwards. This led to excessive increases of wages and produced a fresh wave of rising cost of living, which in turn necessitated a renewed increase in wages. It became more and more evident that those who received wages had no interest in any cheapening of articles of necessity, and that in fact, accelerated increases in the cost of living at each point of time when the index came to be calculated appeared to them as desirable because they thereby obtained a corresponding rise in wages for the following month."

Even if we leave out of account every abuse of the sliding-scale system, we still cannot escape the conclusion that such a system must necessarily remove the last obstacle to the menacing race between wages and prices. Whereas a rise in the prices of commodities which is not automatically followed by a rise in wages and salaries gives, on the one side, an impetus to increased intensity of labour, and, on the other side, it restricts consumption, yet if wages adjust themselves automatically to increases in the cost of living, these very forces which alone can operate at the root of the rise in prices become inoperative. The adjustment of wages to a rise in the cost of living must then lead to a fresh rise in prices, this in turn leading to a further rise in wages, and so on *ad infinitum*; and if the State or its Central Bank—and this is a necessary condition of the system—makes its note-printing presses available for the calls upon them which result from this race, then the inflation must go on in geometrical progression. The greatest danger of our modern complicated process of production lies in the fact that the workman has lost all sense of direct relation to the product of his labour, and that he no longer feels the advantage of increased effort and of careful methods of work as directly as does the small handicraftsman or peasant working for himself. The very last traces of such relation are, however, removed as far as the workman is concerned, if, by the automatic adjustment of his paper wages to his cost of living, the illusion is fostered of there being no necessity for him to make any personal exertions to overcome the rise in the cost of living. The ultimate result must be, as was actually the case in Austria, an intensified rise in the cost of living and an acceleration in the depreciation of money.

In Germany the sliding-scale system or the index mark has, in the matter of taxation and in that of regulating salaries, already approached a degree which gives ground for concern. A formal and complete introduction of this system would not only accelerate the total collapse of the German monetary system, but would also bring ruin upon the entire economic organisation of Germany. Germany, without a doubt, if the monetary system and its economic institutions are to recover, will have to abolish the use of the narcotic of the continued increase in media of payment, and, given the necessary political conditions, will ultimately have to adopt a policy of deflation. Germany, too, when the apparent profits resulting from continual increases in prices and rises in rates of exchange have ceased and definite limits to wages and salaries have thereby been attained, will have to pass through the crisis which will precede a complete recovery of health, a crisis which no country has yet escaped, when, after becoming accustomed to inflation and to a depreciation of money, it has begun a regimen of cure. The "sliding-scale" and the "index currency" lead, however, in the opposite direction.

[*With the exception of a final paragraph, now no longer relevant, the German text ceases here. The author was killed in a railway accident in* 1923 *after the publication of the* 6*th edition.*]

APPENDIX

§ 1. THE REINTRODUCTION OF THE GOLD STANDARD

At the time when the last German version of this work appeared, economic and, especially, currency conditions over the greater part of Europe were such as to justify the worst apprehensions of the author. The Reparations question was not only not solved, but the then recent invasion of the Ruhr seemed to have inaugurated the final stages in the financial and economic dismemberment of Germany. The Russian currency was still in process of decay: the pound sterling was still to slide backward throughout the second half of 1923: the condition of French finance was preparing the first great *débâcle* of the franc, and the franc was affecting sympathetically the position of the lire and the Belgian franc. The smaller European neutrals had not yet entered the path of currency stabilisation, and, outside Europe, the countries of the British Empire, in spite of their importance as gold producers, were awaiting a lead from the Mother Country. The failure of the Indian Government's plan to stabilise the rupee at 2s. gold and then at 2s. sterling in 1920 had caused India to revert to a limping standard of mixed silver and paper: only in Austria had the seemingly miraculous occurred, and that European paper currency, which of all had seemed first destined to be destroyed, stood stable in terms of the American dollar, the prestige of which stood unchallenged.

Since then Belgium has definitely stabilised the franc and introduced a new unit of account, the *belga* (25th October 1926). In France, in spite of the fact that formal stabilisation has been delayed, the franc is virtually stable in the neighbourhood of 125 francs to the gold pound. In India, as a consequence of the *Report of the Royal Commission on Indian Currency and Finance*, issued in August 1926, the rupee is stabilised at 1s. 6d. gold, and steps are being taken to introduce a "gold bullion standard" on the lines of the British Gold Standard Act of 1925. Denmark returned to the gold standard at the old par of exchange on 1st January 1927; Canada returned to the gold standard on 1st July 1926. Even in countries such as Poland, where the original attempt at introducing a fixed parity between gold and the local currency broke down, the fluctuations during 1926 tended to be less severe, whilst in other cases, for example, Brazil, though stabilisation had not yet been effectively carried through, the full legislative programme—including the establishment of a new unit of account, the *cruzeiro*—had been initiated. Thus the tendency towards the establishment of a fixed relation between gold and the local currency, which step, and not the determination of reserve ratios or the rigid grant of convertibility into gold or

TABLE I.—*Chronological List* * *of Forty-eight Countries (at End of 1925) which have*

Stabilised their Currencies at Pre-war Par. (1).	Devaluated their Currencies. (2).	Maintained a Stable Exchange for one Year or more without having introduced a definite Currency Reform. (3).	Not yet stabilised their Currencies. (4).	Founded a new Central Bank, or reorganised the existing Central Bank, or made important Alterations in Statutes.[1] (5).
Nicaragua, 1915.[2]	Austria, 1922.	Honduras, 1923.	Belgium.	British India, 1920.
Salvador, 1920.	Latvia, 1922.	Bulgaria, 1924.	Denmark.	South Africa, 1920.
Venezuela, 1923.	Costa Rica, 1922.	Esthonia, 1925.	France.	Russia, 1921.
Colombia, 1924.	Russia, 1923–1924.	Siam,[3] 1925.	Greece.	Peru, 1922.
Sweden, 1924.	Germany, 1923–1924.		Italy.	Lithuania, 1922.
Egypt, 1925.	Lithuania, 1924.		Norway.	Latvia, 1922.
Canada, 1925.	Guatemala, 1925.		Portugal.	Austria, 1922.
Australia, 1925.	Danzig, 1925.		Roumania.	Colombia, 1923.
Netherlands, 1925.	Hungary, 1925.		S.H.S.	Danzig, 1923.
Dutch East Indies, 1925.	Chile, 1925.		Spain.	Poland, 1924.
New Zealand, 1925.	Finland, 1925.		British India.	Hungary, 1924.
Switzerland, 1925.			Japan.	Germany, 1924.
United Kingdom, 1925.			Argentina.	Guatemala, 1925.
South Africa, 1925.			Bolivia.	Czechoslovakia, 1925.
			Brazil.	Chile, 1925.
			Ecuador.	Mexico, 1925.
			Paraguay.	Albania, 1925.
			Peru.	Finland, 1925.
			Uruguay.	Madagascar, 1925.

* League of Nations : *Memorandum on Currency and Central Banks*, 1913–1925, vol. i, p. 7.

[1] The dates refer to the year in which the statutes were passed by Parliament, and not necessarily to the year in which the banks started operations.

[2] Pre-armistice. Inserted to make the list complete.

[3] Stabilised on the £ sterling.

TABLE II.—*Rates*

(New York Buy-

Country.	Parity.	December 1923.[1]	
		Rate.	Percentage of Par.
		Cents.	
London	486·65 cents = £1	436·01	89·59
Stockholm	26·799 ,, = 1 Krona	26·341	98·29
Montreal	100 Canadian cents = 100 U.S. cents	97·614	97·614
Bombay	48·665 cents = 1 rupee	31·410	64·54
Amsterdam	40·196 ,, = 1 gulden	38·039	94·63
Yokohama	49·846 ,, = 1 yen	47·010	94·31
Mexico	49·85 ,, = 1 peso	48·50	97·29
Switzerland	19·295 ,, = 1 franc	17·452	90·45
Buenos Aires	42·452 ,, = 1 peso papel	32·070	75·54
Montevideo	103·425 ,, = 1 peso	77·660	75·09
Madrid	19·295 ,, = 1 peseta	13·038	67·57
Copenhagen	26·790 ,, = 1 krone	17·821	66·50
Christiania	26·790 ,, = 1 krone	14·027	55·70
Rio de Janeiro	32·44 ,, = 1 milreis papel	9·406	29·18
Valparaiso	20·61 ,, = 1 peso papel 12·166 ,, = 1 peso [10]	10·891	52·84
Paris	19·295 ,, = 1 franc	5·250	27·21
Brussels	19·295 ,, = 1 franc 13·90 ,, = 1 belga	4·580	23·74
Italy	19·295 ,, = 1 lira	4·337	22·48
Prague	20·262 ,, = 1 koruna	2·925	14·43
Helsingfors	19·295 ,, = 1 markka 2·5185 ,, = 1 markka [6]	2·489	12·9
Athens	19·295 ,, = 1 drachma	1·895	9·82
Belgrade	19·295 ,, = 1 dinar	1·136	5·89
Sofia	19·295 ,, = 1 lev	0·816	4·23
Bucharest	19·295 ,, = 1 leu	0·515	2·67
Budapest	20·263 ,, = 1 korona 17·49 ,, = 1 pengö [7]	0·0052	0·03
Warsaw	23·821 ,, = 1 marka 19·295 ,, = 1 zloty	0·00002	0·0001
Berlin	23·821 ,, = 1 mark	0·000002 [8]	0·0001
Vienna	14·071 ,, = 1 schilling [5]	0·0014 [10]	0·007

[1] From the League of Nations: *Memorandum on Currency and Central Banks, 1913–1925*, vol. ii.

[2] From the *Federal Reserve Bulletin*, January 1927.

[3] Hundred thousand paper marks

[4] Number of cents for one Reichsmark.

[5] The schilling, introduced in December 1924 = 10,000 paper crowns.

[6] New legal par fixed December 1925. The figure for the second column calculated according to this new par is 100·26 per cent.

of Exchange

ing Rates)

December 1924.[1]		December 1925.[1]		December 1926.[8]	
Rate.	Percentage of Par.	Rate.	Percentage of Par.	Rate.	Percentage of Par.
Cents.		Cents.		Cents.	
469·58	96·49	484·98	99·66	485·125	99·69
26·964	100·62	26·795	99·99	26·720	99·70
99·69	99·69	99·97	99·97	99·93	99·93
35·514	72·98	36·875	75·77	36·046	74·08
40·416	100·55	40·187	99·98	39·992	99·48
38·440	77·12	43·191	86·65	48·937	98·17
48·81	97·91	48·75	97·79	46·672	93·62
19·378	100·43	19·298	100·02	19·319	100·10
38·948	91·75	41·500	97·76	41·02 [11]	96·68
98·095	94·85	101·784	98·41	101·259	97·91
13·963	72·37	14·190	73·54	15·237	78·95
17·636	65·81	24·864	92 78	26·637	99·39
15·074	56·25	20·316	75·81	25·286	94·35
11·640	35·90	14·218	43·83	11·854	36·54
11 381	55·22	12·181 [10]	100·12	12·036 [10]	98·90
5·399	27·98	3·736	19·36	3·949	20·46
4·965	25·73	4·530	23·48	13·911 [12]	100·08
4·302	22·30	4·031	20·89	4·435	22·98
3·020	14·91	2·962 [9]	99·88	2·962 [9]	99·88
2·53	13·11	2·525	13·09	2·521	100·04
1·814	9·40	1·289	6·68	1·264	6·55
1·496	7·75	1·771	9·18	1·765	9·15
0·734	3·8	0·729	3·78	0·724	3·75
0·508	2·63	0·461	2·39	0·521	2·70
0·0013	0·01	0·0014	0·01	17·565 [7]	100·43
19·204 [6]	99·53	10·844 [6]	56·20	11·267 [6]	58·38
23·80 [4]	99·92	23·807 [4]	99·94	23·796 [4]	99·90
0·0014 [13]	0·007	14·060	99·92	14·080	100·07

[7] Since 1926 the legal unit of currency is the pengö (1 pengö = 12,500 paper crowns = 17·49 cents).

[8] Number of cents for one zloty.

[9] According to the legal value of the koruna fixed in March 1925, between 2·90 and 3·03 cents.

[10] According to the new par fixed in September 1925.

[11] 100 pesos papel = 44 pesos oro.

[12] Parity with the belga.

[13] Old parity: 20·203 cents = 1 krone.

foreign exchange of the local currency, constitutes the *essence* of a gold standard, has continued uninterruptedly since the prestige of the gold standard was fully restored, even in the minds of doubting Ministers of Finance, by the transition of this country to gold in April 1925. The general relations between the most important world currency, the American dollar, and the currencies of particular areas are best set forth by the movements in the rates of exchange, as illustrated in the table on pp. 630 and 631.

The relations between the dollar and the various currencies over these four years can be divided into several groups. In the first group fall the currencies which have been appreciating in terms of the dollar: a group which includes sterling, the rupee, the yen, the Argentinian peso, the Swedish and Norwegian crowns, the Brazilian milreis, the Chilian peso, and the Serbian dinar. In the second group there fall those currencies which appreciated sharply in terms of the dollar between 1923 and 1924, but have remained stable since: the Dutch florin, the Swiss franc come in here. A third group remains relatively stable throughout: the Czech crown, the Finnish mark, the Swedish crown, and the Viennese crown. A fourth group consists of the depreciating currencies, the most important, of course, being the currencies of the Latin countries. Changes in the unit of account conceal in certain cases—for example, Hungary—the stability in the value of the currency over part of the period during which the currency has, in fact, been really steady.

Further signs of the increasing integration of the currency systems of the world are afforded by the gradual approximation of prices in different countries and by the greater steadiness of prices as a whole. It is true, as argued by some distinguished economists—by Mr Keynes, for instance,—that wholesale prices of commodities entering into international trade must necessarily be almost the same in all trading areas, if by this is meant that the *gold values* must be the same. But it does not follow from this that prices expressed in terms of local currencies will everywhere show the same development. If world prices are falling, reckoned in terms of gold, wholesale prices in a particular area may still be rising—that is, local wholesale prices, expressed in terms of the local currency, may go up because the gold value of the local currency may be falling. Hence local indices of prices are still valuable evidence of the stability or the instability of that local currency, though in terms of gold the value of the articles covered by the index may be everywhere the same. Table III below shows (*a*) quarterly movements of prices between 1923 and 1925, and (*b*) monthly price movements in 1926, so far as the figures are available. The table shows clearly enough the enormous effect upon prices produced by inflation in Germany up to the end of

TABLE III.—*Movements of Wholesale Prices, 1923–1926* * (1913 = 100)[6]

	1923.[1]				1924.[1]				1925.[1]			
	III.	VI.	IX.	XII.	III.	VI.	IX.	XII.	III.	VI.	IX.	XII.
Germany[7]	489[3]	1939[3]	2,395[4]	126,156[5]	121[5]	116[9]	127[3]	131[3]	134[3]	134[3]	126[3]	122[3]
South Africa[7, 9]	126	124	125	131	126	125	133	130	130	127	124	124
Austria[10]	1852[3]	1834[3]	1,779[3]	1,818[3]	1,912[3]	1828[3]	1937[3]	2075[3]	143[11]	141[11]	127[11]	125[11]
Hungary[7]	..	..	..	792[3]	2,077[3]	2208[3]	2237[3]	2347[3]	2118[3]	141[12]	135[12]	130[12]
Egypt[7]	136	128	123	137	136	131	148	156	155	150	152	140
Czechoslovakia[13]	1012	949	960	974	1,008	953	999	1045	148[13]	147[13]	144[13]	141[13]
Finland[7, 14]	1108	1095	1,089	1,096	1,094	1088	1117	1139	148[13]	148[13]	149[13]	147[13]
Danzig[15]	..	..	..	..	..	..	156	164	160	149	153	152
U.K.[7]	160	159	158	163	165	163	167	170	166	157	155	152
Poland[16]	989[3]	1881[3]	7,302[3]	142,301[3]	245,278[3]	101[17]	112[17]	118[17]	122[17]	119[17]	127[17]	155[17]
Netherlands[7]	156	149	145	154	155	151	158	160	165	153	155	155
U.S.A.[7]	159	153	154	151	150	145	149	157	161	157	160	156
Sweden[7]	168	164	162	160	162	158	163	168	168	161	157	156
Switzerland[18]	186	180	181	183	181	173	169	171	166	161	159	156
Denmark[19]	200	207	205	210	228	220	234	234	220	206	163	157
China[19]	159	155	157	158	158	152	149	157	160	157	160	158
British India[16]	181	175	174	179	179	176	179	176	168	157	158	163
Canada[7]	156	156	155	154	154	152	154	161	162	159	157	164
Australia[7]	171	187	180	182	175	171	170	173	168	170	170	168
New Zealand[16]	174	177	177	174	180	180	181	181	175	174	175	176
Russia[13]	3179[4]	9796[4]	54,901[4]	378,100[4]	181[20]	169[20]	164[20]	172[20]	195[20]	188[20]	174[20]	183[20]
Spain[16]	171	170	174	176	180	179	184	198	193	182	185	187
Japan[7]	196	198	210	211	206	200	206	213	204	200	201	194
Peru[16]	188	191	186	192	194	192	190	195	206	200	205	203
Norway[21]	227	232	232	247	264	262	272	279	279	260	237	220
Belgium[22]	482	484	514	545	625	565	550	566	546	552	577	565
France[16]	424	409	424	459	499	465	486	507	513	543	556	632
Italy[16]	587	569	569	577	579	566	580	640	659	683	721	715
S.H.S.	..	..	..	..	2,040	1984	1978	2112	2009	1842	1621	1640

	1926.[1]											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Germany	120[3]	118[3]	118[3]	123[3]	123[3]	125[3]	127[3]	127[3]	127[3]	130[3]	132[3]	..
South Africa	124	..	..	120	..	..	122	..	..	..	..	..
Austria	122[11]	120[11]	119[11]	119[11]	118[11]	124[11]	126[11]	126[11]	123[11]	125[11]	128[11]	..
Hungary[12]	127	125	123	123	122	122	123	122	122	125	..	..
Egypt	134	134	134	133	128	129	129	129	129	129	130	..
Czechoslovakia[13]	950	938	923	928	926	948	962	973	972	972	..	..
Finland	1094	1091	1081	1081	1070	1079	1079	1092	1093	1095	1097	..
Danzig[14, 15]	150	149	147	143	144	146	143	148	149	148	149	..
U.K.	151	149	144	144	145	146	149	149	151	152	152	..
Poland	142[17]	146[17]	146[17]	167[17]	181[17]	175[17]	167[17]	173[17]	177[17]	177[17]	179[17]	..
Netherlands	153	149	145	143	143	144	141	139	140	143	143	..
U.S.A.	156	155	152	151	152	152	151	149	151	150	148	..
Sweden	153	152	149	150	151	150	148	147	146	148	148	..
Switzerland[18]	155	151	148	147	145	145	146	146	145	147	148	..
Denmark[19]	151	145	141	141	140	141	143	141	145	150	145	..
China[19]	164	163	164	163	160	156	157	161	164	171	174	172
British India[20]	159	154	151	149	146	147	145	147	146	144	146	..
Canada	164	162	160	161	157	156	156	154	153	151	152	..
Australia	161	160	163	168	167	163	162	162	158	154	..	..
New Zealand[20]	159	159	157	156	156	155	156	154	153	153	..	..
Russia[20, 13]	190	194	196	197	189	183	182	180	179	178	..	..
Spain	186	183	183	179	179	177	178	180	178	179	..	..
Japan	192	188	184	181	177	177	179	177	175	174	171	..
Peru	206	205	204	204	206	204	204	204	202	202	198	199
Norway[21, 24]	214	211	205	199	197	194	192	193	193	198	199	184
Belgium[22]	560	556	583	621	692	761	876	836	859	856	865	..
France	634	636	632	650	688	739	836	770	787	752	684	..
Italy	708	704	693	692	698	709	724	740	731	712	709	..

* As these figures are taken from two sources, they are not always congruent.

[1] From the League of Nations: *Memorandum on Currency and Central Banks*, 1913–1925, vol. i, p. 8.

[2] From the *Federal Reserve Bulletin*, January 1927, p. 58.

[3] 000's omitted. [4] 000,000's omitted. [5] 000,000,000's omitted.

[6] In some cases other near base periods, such as July 1914, are taken. All the indices are calculated by means of an arithmetic average except those for Belgium, Egypt, Finland, Poland, United Kingdom, and Russia, for which geometric averages are used. [7] Monthly averages.

[8] Prices expressed in Reichsmarks. [9] January, April, July, October. [10] Fifteenth of month.

[11] Prices expressed in schillings. [12] Gold prices. [13] First of following month.

[14] Figure for each month based on the figure for the corresponding month of 1913.

[15] Prices in gulden, referring to the tenth and twentieth of each month. [16] End of month.

[17] Prices expressed in zlotys. [18] Index of the *Finanstidende* referring to the first of the following month.

[19] Last Wednesday in the month. [20] Prices expressed in Tchervonetsy.

[21] Fifteenth of month. [22] Average of second half of the month. [23] Revised index.

[24] From the League of Nations: *Monthly Bulletin of Statistics*, December 1926.

1923, in Poland up to the end of the first quarter of 1924, in Russia up to the end of 1923. It also shows how the price movement in Poland has been affected by the breakdown of the currency stabilisation during the second half of 1925 and in 1926. The table also reveals the steady rise of prices in the United Kingdom in the last quarter of 1923, throughout 1924, and then the fall which was associated with the return to the gold standard. French prices reveal the steady influence exerted by inflation throughout 1923 to 1925, culminating in the maximum of 836 in July 1926. The *de facto* stabilisation of the French franc in the second half of 1926 reveals itself in the steady decline of wholesale prices, as franc prices gradually adjust themselves to the world level. As gold prices, measured on the basis of the American index, have been gradually falling during 1926, it follows that the price level in a country like France should also fall, after the parity with gold has been successfully maintained for a certain period of time. The table reveals how close the correspondence of wholesale prices now is in countries like the United Kingdom, the U.S.A., Switzerland, the Netherlands, Sweden, Denmark, Australasia, though the local indices are not compiled on quite the same bases. We must leave to a subsequent section the question of whether the return to the gold standard implies the likelihood of a permanent downward trend in the value of money.

§ 2. PROBLEMS OF TRANSITION TO THE GOLD STANDARD

The problems associated with the return to a stable unit of value were only gradually realised. The first attempts at formulating general principles are embodied in the sixteen resolutions of the Brussels Financial Conference. These resolutions envisage four main objectives: the cessation of inflation, the restoration of the gold standard, the establishment of new Central Banks in countries where they did not already exist, and, lastly, the freeing of international trade and of the foreign exchanges from the shackles of official control. On the other hand, on the immediate practical point arising whenever the return to gold is regarded, namely, the establishment of a parity of exchange between gold and the local currency, the opinions of the Conference were by no means clear. The establishment of an "effective gold standard would in many cases demand enormous deflation," and, therefore, the Conference moved that "deflation, if and when undertaken, must be carried out gradually and with great caution, otherwise the disturbance to trade and credit might prove disastrous." On the other hand, the Conference does not appear to have fully appreciated the possibilities of devaluaton. "It is useless to

attempt to fix the ratio of existing fiduciary currencies to their nominal gold value" because, unless the condition of the currency concerned were sufficiently favourable to make the fixing of such ratio unnecessary, it could not be maintained.

By 1922 expert international opinion had become much more clarified on the problems involved. The Genoa Conference of 1922, or, rather, the Second Commission (Finance) of the Conference, basing itself on the Draft Report of the London Experts' Meeting, which took place before the Conference, and upon the Report and Draft Resolutions of the Genoa Experts, passed a series of nineteen resolutions. Three objectives were fixed upon: the cessation of inflation, major conditions of which appeared to be the balancing of budgets and the settlement of debt questions; the choice of *devaluation* rather than *deflation*—that is, the determination of new parities between gold and the local currency rather than forced action to re-establish the old parity; and, lastly, international action in the financial field, particularly a conference of the Central Banks of Issue, at which an International Convention was to be elaborated for stabilising the future value of gold. The Conference was clearly impressed with the danger that an unregulated return to the gold standard might lead to a wild scramble for gold for reserve purposes, thus endangering the experiment itself and, at the same time, making it more difficult to resume the gold standard in areas which might find themselves only later in a position to undertake the task.

For reasons which will become clearer in a subsequent section, the scramble for gold which was so much feared did not develop to any noticeable extent. On the other hand, the problem of the parity to be adopted is now seen to be the matter of most direct import in the currency history of Europe, indeed of the world.

When the problem of restoring the gold standard was first seriously discussed after the War, the problem was over-simplified. It was assumed that devaluation was preferable to deflation—that is, a new parity was better than the old one in all those areas in which a return to the old par involved a reduction of the internal price level and, therefore, the risk of unemployment and depression of trade. It was apparently taken for granted, however, that the "new par" was a relatively simple concept, and it was not at first clearly seen that, even if the old par were deliberately rejected, a choice could still be made, in certain cases at any rate, between two possible parity rates, representing respectively the higher and the lower values of the currency concerned, and that the difficulty lay in the fact that the foreign exchange value of the currency, which was the *most obvious* stabilisation point to take, might be either the higher or the lower value, as the case might be.

These difficulties arose from the fact that, under the influence of inflation, the purchasing power of the local currency splits, as it were, into different planes. In general, inflation resulted in the internal purchasing power of the currency being higher, and in some cases very much higher, than the external, so that the German paper mark, for instance, might at a given moment buy, say, 50 per cent. more goods and services at home than it did abroad, by being exchanged for dollars or pounds sterling. In this particular case, the internal purchasing power being higher than the external, the choice of the exchange value of the mark as the stabilisation rate was equivalent to stabilisation on the basis of the lower value of the currency. But in other cases, notably in the case of the United Kingdom, exactly the opposite state of affairs prevailed. Owing to the rapid appreciation of the pound sterling in New York, the pound bought more when exchanged for goods and services abroad than it did when buying goods and services in the United Kingdom itself. If the exchange value of the pound sterling were taken as the basis of the stabilisation of the pound in terms of gold, this was equivalent to stabilisation on the basis of the higher value of the currency.

In all cases, stabilisation results in economic forces being set in motion tending to bring the internal and external values of the stabilised currencies into equilibrium. But the immediate social consequences of the particular parity chosen may be, and experience has proved them to be, very different. The respective cases of Germany and the United Kingdom show that the first effect of stabilising on the basis of the lower value of the currency is to cause an expansion of trade and a rise of prices, consequently, also, a fall in the volume of unemployment: whilst the first effect of stabilisation on the basis of the higher value of the currency is to cause a check to trade, a fall in prices, and, consequently, an increase in the volume of unemployment.

These consequences ensue from the following considerations. At the moment of stabilisation, let it be supposed, the foreign value of the currency is lower than the internal value. That is the same as saying that a given volume of the currency will buy more domestic goods and services than it will of foreign goods and services. Since the currency can now be bought at a fixed price, the effect will be that the higher internal value will lead to a demand for that currency and, since it is of the essence of a stabilised currency that it shall be increasable against gold or foreign exchange, more of it will be issued in response to foreign demand for the domestic products of the country in question. Stabilisation tends to be accompanied by high rates of interest, for stabilisation first clearly reveals how inflation has gutted the capital resources of a country. Under the stimulus of such interest-rates

foreign capital flows in and the foreign currency which represents such capital supplies is sold to the Central Bank, directly or indirectly. This, again, leads to an increase in the supply of the local means of payment. Thus stabilisations leads to a stabilisation boom, such as that through which Germany and Austria passed in the early stages of their stabilisation. The paradoxical result emerges that more money is issued, whilst the currency, in spite of it, retains its fixed value in terms of gold and foreign exchange.

The immediate effects of stabilisation at the higher value of the currency stand in sharp contrast to those just set forth. For, when the higher value is adopted as the basis of stabilisation, and the higher value is represented by the current exchange rate at the moment of stabilisation, exports will fall off and imports will be encouraged, since the currency buys more if it is employed to purchase foreign goods than if employed to buy domestic goods and services. Under these circumstances, there arises what may be called an adjustment crisis. For either internal prices are forcibly reduced to world level, in which case there will be a sharp economic crisis, aggravated, it may well be, by social unrest in the form of strikes and lockouts (for the price of labour must fall if internal prices fall), or the maladjustment will continue, entailing a prolonged period of falling foreign trade and unemployment consequent thereon. The position in the United Kingdom since the return to gold in April 1925 illustrates the nature and scope of such an adjustment crisis.

The upward movement of prices and the temporary boom which accompanies the adjustment of internal and external prices to one another, if stabilisation takes place at the lower (external) value of the currency cannot, however, continue indefinitely. If internal prices continue to rise, a point will inevitably be reached when the domestic price level will be so high as no longer to equilibrate with world prices at the stabilisation rate chosen. The monetary authorities have, therefore, a difficult problem to solve, namely, to manage the transition from rising prices to stable prices or, at any rate, to prices only moving as world prices move. Since the "stabilisation boom" is accompanied—as it was in Austria and Germany—by a sharp upward movement of security prices, the transition from rise to stability involves financial as well as industrial and social difficulties. In fact, as experience shows, the attainment of ultimate equilibrium is difficult without a depression. For the check to the further upward movement of prices itself liberates forces which produce a decline of prices and an increase of unemployment. The *stabilisation boom* is followed, in fact, by a *stabilisation crisis*, such as that which broke out in Germany in the autumn of 1925 and continued through the greater part of 1926.

The severity of the adjustment crisis and the magnitude of the stabilisation boom both depend on the margin between the two price levels which are to be brought into equilibrium. In the case of the United Kingdom the usual estimate is that sterling was overvalued to the extent of some 10 per cent.; or, in other words, the domestic price level justified a rate of exchange some 10 per cent. lower than the one actually adopted. The excessive decline in the dollar value of the paper mark at the end of 1923 makes it probable that the degree of undervaluation of the mark abroad was a great deal more than this. Whatever the actual divergence may have been in given cases, the greater the margin, the greater the possible initial stimulus to expansion in the one case, and the greater the resistance to be overcome in the other.

The choice of parity is important primarily because of its connection with the position of the working-classes: for stabilisation at the higher value of the currency, when that higher value is the foreign exchange value, involves wage reductions or unemployment, and it may be difficult to overcome the natural reluctance to a cut in wage rates, where the workers are strongly organised and a sufficient period of time has elapsed to give the wage rates which it is desired to reduce the sanction of habit and custom. But the experience of Germany, in particular, shows that, when once inflation is stopped, another problem arises, of great social importance but affecting primarily the *investing* classes of society. This is the problem of *revalorisation* or *Aufwertung*.

The adoption of a new parity of exchange is equivalent to a permanent reduction in the money income of fixed income recipients. Thus, in Germany, a new parity was established of 1 billion paper marks = 1 Rentenmark = 1 new Reichsmark. All old debts were thus payable at one-billionth of their old value—that is, they were virtually cancelled. Since, under the circumstances already explained, German internal prices continued to rise, the position of "old" creditors in Germany was really worse than appeared at first sight, for such remnant of money as still accrued to them lost further in its command over goods and services.

The position of the bond-holder, though the most striking, is not by any means the sole case of inequity resulting from stabilisation after a period of inflation. A vast number of new contracts are continually being entered into and continue after the currency is stabilised. The terms of such contracts may, in some cases, prove to be unduly onerous to one or other party. Apart from contracts which have not yet been determined, what should be done in those cases—for example, in which the payment of a debt has been *anticipated*, where, for example, mortgages have

been paid off in order that the debtor could take advantage of the falling value of money? The State being one of the largest of debtors, it is clear that political pressure is certain to be applied to force a revision of the situation. But—quite apart from the fact that a revision of the terms of pre-stabilisation loans will increase the burden of taxation—in certain cases, at any rate, no harm results to the creditor from the fall in the value of the currency in terms of which the loan is expressed. Anyone purchasing at a time when the exchange value of the currency was below the ultimate stabilisation level, or was the same as the stabilisation level, had always discounted the fall in the value of the currency in the price he gave for the stock bought, or had even paid a price which more than discounted the fall in the value. Is such a purchaser to benefit from revaluation to the same extent as a holder who had bought before any fall, or only a slight fall, in the value of the currency had occurred? And if the State is to suffer its loans to be revalorised, are other debtors to suffer the same fate? If existing contracts, entered into at the time of inflation, are to be revalorised, shall contracts already determined, by anticipation or because the due date fell within the period of inflation, be reopened?

Such are the problems which the German Government has had to face in recent years,[1] and such are the problems which, as recent research has demonstrated, have had to be faced in the past. They throw a good deal of light upon one of the arguments advanced in inflation even by those who, in general, recognise its evil effects, namely, that it enables painless extinction of National Debts contracted for unproductive purposes, such as war, to be effectuated. That this is not a valid argument for inflation had been pointed out, generations ago, by Adam Smith.[2] Such a "pretend payment," he argues, "instead of alleviating, aggravates in most cases the loss of the creditors of the public, and without any advantage to the public, extends the calamity to a great number of other innocent people. It occasions a general and most pernicious subversion of the fortunes of private people, enriching in most cases the idle and profuse debtor at the expense of the industrious and frugal creditor and transporting a great part of the national capital from the hands which were likely to increase and improve it to those which are likely to dissipate and destroy it. When it becomes necessary for a State to declare itself bankrupt, in the same manner in which it becomes necessary for an individual to do so, a fair, open, and avowed

[1] The details, too complicated to be investigated here, will be found in E. L. Hargreaves' *Restoring Currency Standards* (King), and in a contribution by the same author to *London Essays in Economics* (Routledge).

[2] *Wealth of Nations*, Book IV, chap. iii, p. 413 (Everyman Edition).

bankruptcy is always the measure which is both least dishonourable to the debtor and least harmful to the creditor. The honour of a State is surely very poorly provided for when, in order to cover the disgrace of a real bankruptcy, it has recourse to a juggling trick of this kind, so easily seen through and at the same time so extremely pernicious." Modern experience tends to add to this exposure the further argument that political pressure will very soon force the State to some revision of the evil it has done, an evil which is the greater because of the extreme difficulty of deciding what precisely *is* to be done.

§ 3. THE NATURE OF THE POST-WAR GOLD STANDARD

There are marked differences between the nature of the gold standard as it exists in the greater number of countries to-day and as it used to be in pre-war days. These differences may be summed up by saying that gold has ceased to be the principal medium of circulation and has had its functions reduced to those of currency norm or standard and of reserve medium.

So long as the currency legislation of a country provides for the issue of local currency at a fixed price against a tender of gold to the Mint or to the Central Bank, the value of the currency in question cannot rise above the value of gold. For if it does, gold will be sold for local currency and, since there will now be more of the latter in existence, its value will fall to the level of gold. On the other hand, so long as the local currency authority is willing—whether obliged to do so by law or not—to limit the volume of the local currency so as to keep a unit of that currency at a fixed value in terms of gold, the local currency cannot have a value less than that of gold. The simplest method of ensuring adequate limitation of quantity is to confer on holders of the local currency the right to obtain gold, or a currency or other circulating medium, itself kept at par with gold. The gold standard, in the widest sense of the word, will obtain so long as these two conditions obtain, *de facto* and *de jure*.

Currency systems of the kind now almost universally present in the world were known in pre-war days as Gold Exchange Standard Currencies. In fact, this phrase was only mediately true. The Indian rupee was indeed kept at par with gold by being linked with sterling, but only so long as sterling itself was linked with gold. It was thus, in essence, a *sterling exchange standard* and carried with it the danger that if, for any reason, the parity of sterling with gold disappeared, the parity of the rupee with gold would also disappear. Since the World War, this difference between a Gold Exchange Standard and a Sterling or Dollar

Exchange Standard has become fully recognised, and the currency arrangements of various countries so adjusted as to make the currency convertible into gold *directly* and not merely into the currency of some other country, irrespective of whether or not such currency is at all times convertible into gold. Such a currency is now beginning to be known as a *Gold Bullion Standard*, the phrase having been invented by the Royal Commission on Indian Currency and Finance of 1925–26. To all intents and purposes it is the "Economical and Secure Currency" advocated by Ricardo in 1816. It was given legislative sanction in the United Kingdom by the Gold Standard Act of 1925. In virtue of that Act, gold continues to be saleable to the Bank of England in unlimited quantities at the price of £3, 17s. 9d. per standard ounce, whilst, on the other hand, all forms of legal tender are convertible into gold at the Bank of England, the minimum quantity tenderable for the purpose of obtaining gold being the amount sufficient to buy 400 fine ounces of gold at the price of £3, 17s. 10½d. per standard ounce. Put in round figures, that is equivalent to saying that £1700 of British currency is made equal in value to 400 ounces of fine gold, an ounce of which is worth, therefore, £4, 4s. 11·4d. The old par between the pound sterling and gold is, therefore, retained, but, though the sovereign is still full legal tender, the intention is that gold shall not circulate. The provision of the Act by which only the Bank of England shall have the right to tender gold to the Mint for coinage purposes has no importance apart from the provision which entitles holders of paper currency only to obtain bar gold and not coin.

In consequence of the cessation of a gold circulation [1] in a large number of countries, the reserves of Central Banks are no longer to be regarded as reservoirs, out of which seasonal changes in the demand for gold can be met. Where the currency conforms to the gold bullion standard, the utility of gold reserves rests on the possibility of meeting a drain of gold from abroad, and fluctuations in the size of the reserve, rather than the absolute amount of the reserve, are an index of the success with which the local currency authority is managing its affairs. Where the currency conforms to the Exchange Standard type, and the local currency authority converts on demand—either *de facto* or *de jure*—into dollars or sterling, a *gold* reserve is really not necessary at all. All that is required are assets in the shape of foreign bank

[1] The absence of a gold circulation is not necessarily tantamount to a legal interdiction of such circulation. Thus both the Austrian and German currency laws make provision for the circulation of gold coins, and the non-repeal of the Coinage Act of 1870 places the United Kingdom in the same category. Gold still circulates in South Africa and Australasia, and has recently been placed in circulation to a limited extent in Holland and Switzerland, to name only a few examples.

balances, foreign bills of exchange, or readily saleable foreign securities, payable in terms of the currency with which the local unit of account is kept at par. From the standpoint of economy, the retention of a *gold* reserve by a country not on the gold bullion standard represents waste. On the other hand, the War showed that assets kept in a foreign country are liable to sequestration and confiscation, whereas gold in the vaults of a Central Bank is completely under the control of the bank. Thus certain countries which are *in fact* on the dollar exchange standard —for example, Germany—have in certain years been accumulating not inconsiderable gold stocks, whilst countries nominally on a gold standard—Holland, for example—have kept considerable assets in the shape of foreign gold bills, bank balances, etc., and practise an exchange standard policy side by side with a gold standard policy.[1]

Since the currencies are mainly paper, the changing relations between the currency and the currency standard are better expressed by the reserve ratios than by the absolute amount of the reserve or of the currency outstanding. In a certain number of cases, however, the reserve ratio possesses no practical significance, because the reserves have not been adjusted to the permanent value round which, in all probability, the currency will in future circulate. Thus the gold reserves of the Bank of France have not yet been adjusted to the value of 125 francs to the pound sterling, in the neighbourhood of which parity it is to be expected that the franc will in future be pegged. Public opinion would in many cases have been won over to stabilisation much earlier than was actually the case had it been realised that on revaluation the reserve, and with it, of course, the reserve ratio, would appreciably improve and that by no means so much would need to be borrowed for the purpose of forming a stabilisation reserve as might at first sight seem necessary. In fact, worship of reserves has been a stumbling-block in the way of European currency reconstruction from the very beginning. It is not always clearly realised that both the Austrian and the German currency stabilisation *preceded* the flotation of their respective "Reconstruction Loans." The raising of large loans, at times at exceptionally high rates of interest, adds greatly to the cost of stabilisation and tends to direct attention from the really important problem—the adequate limitation of the currency. No reserve, however large, is capable of maintaining the value of the currency unless currency policy is such as to keep the volume of the currency at par. The real object of the reserve is to meet emergencies, and it cannot permanently keep up the value of the currency if, after attempted stabilisation,

[1] *Vide* especially the *Report of the Netherlands Bank*, 1925–26, pp. 10–11.

TABLE IV.—*Gold and Silver Stocks of Various Countries*

Country.	Gold.[1]			Silver.[2]	
	At End of 1923.	At End of 1924.	At End of 1925.	At End of 1923.	At End of 1924.
	Million $.	Million $.	Million $.	Million $.	Million $.
Germany	124·8	195·0	303·5	17·1	62·5
England	754·4	757·0	703·5	301·7	302·4
France	1069·0	1069·9	1070·5	57·2	59·0
Italy	329·6	332·4	332·9	94·8	116·8
Austria	1·3	1·6	2·1	0·2	0·08
Russia	45·3	73·1	93·9	0·6	34·5
Belgium	52·2	52·5	52·8	14·5	14·3
Bulgaria	7·6	7·8	8·0	3·3	3·3
Czechoslovakia	26·9	27·1	27·1	157·1 (Metallic stock unclassified.)	160·1 (Metallic stock unclassified.)
Denmark	56·2	56·1	56·1	1·7	5·6
Finland	8·2	8·4	8·4	0·2	0·2
Hungary	4·6	6·9	10·4	0·1	..
Yugoslavia	13·3 [2]	14·0 [2]	..	3·3	3·4
Lithuania	1·6	3·1	3·2	0·02	0·2
Netherlands	233·9	202·8	178·1	43·3	49·3
Norway	39·5	39·4	39·4	6·7	3·5
Poland	13·1	20·0	25·8	5·0	5·3
Portugal	9·3	9·3	9·3	19·0	4·9
Roumania	46·4	47·8	48·5	1·0	2·7
Spain	487·7	489·2	489·5	125·2	125·7
Sweden	72·8	63·5	61·6	3·5	1·1
Switzerland	103·7	97·6	90·1	43·2	33·8
U.S.A.	4247·2	4547·4	4408·6	809·0	818·6
Canada	184·2	208·4	225·5	28·0	28·0
Mexico	236·5 [2] (Unclassified.)	236·5 [2] (Unclassified)	..	236·5 (Unclassified metallic stock.)	236·5 (Unclassified metallic stock.)
British Honduras	0·09 [2]	0·09 [2]	..	0·19	0·19
Cuba	37·1 [2]	37·1 [2]	..	16·4	16·4
Haiti	0·3 [2]	0·3 [2]	..	..	..
Honduras	..	0·03 [2]	..	..	0·4
Nicaragua	..	..	..	0·3	0·3
British West Indies	..	..	..	1·6	2·5
French West Indies	0·3 [2]	0·3 [2]	..	0·09	0·09
Argentine	481·8	453·2	459·5	..	..
Brazil	48·7	53·6	54·3	..	..
Colombia	4·8	9·3	14·6	12·7	9·6
British Guiana	..	..	..	0·7	0·03
Peru	22·6	22·5	22·5	4·7	..
Uruguay	57·4	57·0	57·7	3·5	3·0
Venezuela	10·7	14·0	10·1	9·1	9·0
Egypt	16·6	10·5	16·7	36·2	..
South Africa	60·6	61·0	54·4	23·6	0·2
Australia	121·6 [2]	121·3 [2]	..	107·4 (Metallic stock unclassified.)	107·9 (Metallic stock unclassified).
New Zealand [3]	38·3	37·6	37·7	..	..
China	8·2 [2]	..	..	118·7	136·0
Japan	602·1	598·6	575·7	172·6	..
British India	108·6	108·6	108·6	429·2	399·2
Dutch East Indies	62·9	53·7	73·4	168·9	168·3

[1] From the League of Nations: *Memorandum on Currency and Central Banks, 1913–1925*, vol. i.

[2] From the *Mint Report of the U.S.A.*, 1925.

[3] Gold and silver. Averages of last quarter.

adequate limitation is neglected, as the case of Poland sufficiently shows.

Table IV on p. 643 and the following tables throw light on the problems which have just been discussed.

Table IV shows how greatly the absolute gold holding of the United States still exceeds that of any other country. In view of the fact that the currencies of France, Italy, and Spain are none of them yet legally stabilised and that gold cannot be obtained on demand, their aggregate gold holdings, amounting at the end of 1925 to nearly 1890 million dollars, are of little effective importance. The same remarks apply to the large stocks of the Argentine and Japan, though the stock of the latter country fell off not inconsiderably in the period covered by the table. The table also brings out clearly the effects of the gold policy of the German Reichsbank, the gold stock of Germany having more than doubled in the period under survey: whilst the decline in the British gold holdings is associated with the effects of the gold standard in the first year of its working, though a recovery was to take place during 1926 The silver stocks throw some light upon the token currency policy of certain States: in Germany, for instance, the issue of fiduciary silver and other currency has been an important source of revenue since the stabilisation of 1924.

Of these tables, No. VII is perhaps the most important, as it allows for the value of gold having risen in terms of the depreciating currencies—that is, it gives "corrected" values and combines gold and *other* gold assets against the sight liabilities of the banks. It thus corrects the wrong impression which might be given by the low percentage of gold against notes in the case of the Austrian and Hungarian National Banks, which is due to the fact that the greater part of their reserves are kept in the form of gold assets and not in the form of gold itself, and by the high reserve ratio of the Bank of England and the Federal Reserve Bank against notes, which is due to the fact that their important *deposit* liabilities are excluded. The table shows that, on the whole, a relatively high reserve ratio is still maintained, but it also shows a considerable degree of dispersion, the reserve ratios varying between 15 per cent. and 72 per cent., though over half the cases show a ratio of more than 60 per cent.

The table of the note circulation, again, reveals the tendency of the Latin countries to increase, and of the "stabilised" countries to remain stationary or to decline. The increase in the note issue of the Reichsbank is in part nominal, being due to the replacement of the Rentenmark notes[1] by Reichsbank notes.

[1] Between 15th October 1924 and 15th November 1926, Reichsbank notes in circulation rose from 1397 millions to 3010 millions; Rentenmark notes fell from 1790 to 1199 millions; divisional currency increased from

TABLE V.—*Gold Reserves of the Principal Note-Issuing Banks*

	At End of 1923.[1]	At End of 1924.[1]	At End of 1925.[1]	At End of 1926.[7]
German Reichsbank (million marks)	467	760	1208	1831
Austrian National Bank (million schillings)[2]	9·3	11·1	14·8	52·5[8]
Hungarian National Bank (million pengö)[3]	26	39	59	169[8]
Bank of England (million pounds sterling)	128	128·6	144·6	151·1 (29th Dec.)[6]
Bank of France (million francs)	5540	5545	5548	5549 (30th Dec.)
Bank of Italy (million lire)[4]	1537	1550	1553	2479[9]
Russian State Bank (million gold roubles)	88	142	182	164 (1st Jan. 1927)[9]
Netherlands Bank (million gulden)	582	505	443	414 (27th Dec.)
Swiss National Bank (million francs)	537	506	467	472
Bank of Sweden (million kroner)	272	237	230	224
Bank of Spain (million pesetas)	2527	2535	2537	2557
Federal Reserve Banks (million dollars)[5]	2498	2242	1940	2815
Bank of Japan (million yen)	1057	1061	1057	1119 (25th Dec.)[9]

[1] From the League of Nations: *Memorandum on Currency and Central Banks*, vol. ii.

[2] Up to 2nd January 1923: Austro-Hungarian Bank, Austrian section. The schilling, equal to 0·69444 gold and 10,000 paper kronen, was adopted as currency unit by Law of 20th December 1924, and introduced in the accounts of the National Bank as from 1st March 1925.

[3] Up to 24th June 1924: Austro-Hungarian Bank, Hungarian section. The pengo, equal to 0·86316 gold and 12,500 paper korona, was adopted as currency unit by Law of 6th November, and introduced in the accounts of the National Bank as from 30th November 1925.

[4] Gold reserves from the three banks of issue, at home and abroad.

[5] Total gold coin and bullion (*i.e.* gold held as assets of the Government, gold against certificates, Federal Reserve System, and in circulation):—

1923.	1924.	1925.
4247	4547	4409

From the *Economist*, 1st January 1927.
" " 8th January 1927.
" " 15th January 1927.
" " 5th February 1927.

TABLE VI.—*Note Circulation of the most Important Note-Issuing Banks*

	At End of 1923.[1]	At End of 1924.[1]	At End of 1925.[1]	At End of 1926.[6]
German Reichsbank (million marks)	497	1,942	2,960	3,736
Austrian National Bank (million schillings) [2]	713	839	890	947 [7]
Hungarian National Bank (million pengo) [3]	931 *	4,514 *	416 †	471 † [7]
Bank of England (million pounds sterling) [4]	105·7	101·3	88·5	84·5 (29th Dec.) [5]
Currency notes (million pounds sterling)	299·1	296·3	296·8	296·5 (29th Dec.) [5]
Bank of France (million francs)	37,763	40,604	49,993	52,907 (30th Dec.)
Bank of Italy (million lire)	12,868	13,987	15,242	18,340 [8]
Russian State Bank (million gold roubles)	237	411	727	885 (1st Jan. 1927) [8]
Netherlands Bank (million gulden)	1,066	935	875	817 (27th Dec.)
Swiss National Bank (million francs)	982	914	876	874
Bank of Sweden (million kroner)	576	537	530	525
Bank of Spain (million pesetas)	4,338	4,547	4,440	4,339
Federal Reserve Banks (million dollars)	2,238	1,850	1,822	1,857
Bank of Japan (million yen)	1,704	1,662	1,500	1,377 (25th Dec.) [8]

* Korona, 000,000,000's omitted.

† Pengö, 000,000's omitted: 1 pengö = 12,500 korona.

[1] From the League of Nations: *Memorandum on Currency and Central Banks*, 1913–25, vol. ii.

[2] Up to 2nd January 1923: Austro-Hungarian Bank, Austrian section.

[3] Up to 1st August 1921: Austro-Hungarian Bank, Hungarian section. Up to 24th June 1924: National Office of Note Issue.

[4] Since 1919: excluding amount held in redemption account in respect of currency notes.

[5] From the *Economist*, 1st January 1927.

[6] " " 8th January 1927.

[7] " " 15th January 1927.

[8] " " 5th February 1927.

But, as previously explained, the rise in its note issue (and a similar explanation applies to Austria and Hungary) is in part due to the gradual adjustment of the domestic price level to that of the outside world.

352 to 690 millions; and the notes of the private note banks rose by 174 millions (*Report of the Commission of the Reichsbank*, November 1926, p. 31).

TABLE VII.—*Reserve Ratios of Central Banks* *

	Gold Reserves as Per Cent. of Notes.		Gold Foreign Assets as Per Cent. of Notes Plus Sight Liabilities.	
	1924.	1925.	1924.	1925.
Reichsbank	39	41	71	61
Austrian National Bank [1] (*a*)	1	2	42	62
Austrian National Bank [1] (*b*)	1	2	41	54
Hungarian National Bank	11	14	37	42
Bank of England	104	100	44	46
Bank of France [2] (*a*)	49	57	52	59
Bank of France [2] (*b*)	32	38	36	41
Bank of Italy [3] (*a*)	38	38	32	32
Bank of Italy [3] (*b*)	28	28	21	24
Russian State Bank	27 [4]	23 [4]	34	13
Netherlands Bank [5]	56	51	71	72
Swiss National Bank	55	53	68	69
Bank of Sweden	44	43	44	53
Bank of Spain	77	78	52	52
Federal Reserve Banks	158	147	70	65
Bank of Japan [6]	83 [6]	81 [6]	63	61

* Based on the League of Nations: *Memorandum on Currency and Central Banks*, 1913–1925, vol. i. p. 75.

[1] Austria: (*a*) Gold plus *total* net holdings of foreign assets; (*b*) gold plus statutory foreign cover assets.

[2] France: (*a*) Gold at home *and abroad* plus foreign assets; (*b*) gold at home plus foreign assets.

[3] Italy: (*a*) Gold at home and abroad plus foreign assets; (*b*) gold at home plus foreign assets.

[4] Russia: only the gold in the Issue Department of the State Bank.

[5] Netherlands: figures based on annual reports of March of the following year.

[6] Only gold reserves held as legal cover for notes. All the other percentages refer to "total specie reserves."

§ 4. THE PRODUCTION AND CONSUMPTION OF THE PRECIOUS METALS

One of the features of the relatively lower level of world prices in recent years has been the upward tendency of gold production. The absolute maximum production was recorded in 1915 at 22·7 million fine ounces. The minimum was reached in 1922, when (partly in consequence of the strike of the white miners on the Rand) the output dropped to 15·45 million fine

TABLE VIII.—*World Production of Gold*, 1923 *and* 1924

(From the *Mint Report, U.S.A., for* 1925)

Country.	Calendar Year 1923.			Calendar Year 1924.		
	Kilos, fine.	Ounces, fine.	Value.	Kilos, fine.	Ounces, fine.	Value.
			$			$
Germany	200	6,430	132,920	200	6,430	132,920
England	..	..	..	..	..	..
France	527	16,943	350,243	616	19,804	409,385
Italy	38	1,221	25,240	540	17,361	358,884
Austria	23	739	15,276	61	1,961	40,537
Russia	7,797	250,673	5,181,870	17,850	573,877	11,863,088
Belgium	..	..	..	..	..	..
Bulgaria	..	..	..	..	..	..
Czechoslovakia	104	3,344	69,126	104	3,344	69,126
Denmark	..	..	..	..	..	..
Finland	..	..	..	..	..	..
Hungary	..	..	..	..	..	..
Yugoslavia	191	6,140	126,925	243	7,812	161,488
Lithuania	..	..	..	..	..	..
Netherlands	..	..	..	..	..	..
Norway	..	..	..	..	..	..
Poland	..	..	..	..	..	..
Portugal	..	..	..	..	..	..
Roumania	1,500	48,225	996,899	1,311	42,149	871,297
Spain	28	904	18,692	30	967	20,000
Sweden	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..
Rest	58	1,864	38,532	41	1,318	27,245
EUROPE	10,466	336,483	6,955,723	20,996	675,023	13,953,970
U.S.A.	75,474	2,426,195	50,160,103	76,091	2,446,338	50,570,294
Canada	38,059	1,223,601	25,294,078	47,446	1,525,380	31,532,403
Mexico	24,313	781,663	16,158,408	24,797	797,223	16,480,062
Central America and West Indies	3,009	96,750	2,000,000	2,708	87,075	1,800,000
Argentine	120	3,870	80,000	120	3,870	80,000
Brazil	4,500	144,675	2,990,697	4,500	144,675	2,990,697
Colombia	8,577	275,738	5,700,000	8,276	266,063	5,500,000
British Guiana	254	8,170	168,900	197	6,337	131,000
Peru	3,744	120,372	2,488,310	3,744	120,372	2,488,310
Uraguay	..	11	227	..	12	248
Venezuela	540	17,361	358,883	540	17,361	358,883
Chile	2,003	64,397	1,331,208	2,107	67,725	1,400,000
Ecuador	1,320	42,456	877,646	1,204	38,700	800,000
Rest of America	1,797	57,762	1,194,046	2,327	74,812	1,546,501
AMERICA	163,710	5,263,321	108,802,506	174,057	5,595,943	115,678,398
Transvaal, Cape Colony, and Natal	284,575	9,149,073	189,128,124	297,826	9,575,101	197,934,904
Rest of Africa	31,335	1,007,449	20,825,819	32,042	1,030,167	21,295,441
AFRICA	315,910	10,156,522	209,953,943	329,868	10,605,268	219,230,345
AUSTRALIA AND NEW ZEALAND	27,660	889,256	18,382,552	25,420	817,264	16,894,342
China	2,784	89,500	1,850,129	3,337	107,300	2,218,087
Japan	7,691	247,276	5,111,647	7,691	247,276	5,111,647
British India	13,136	422,307	8,729,858	12,328	396,349	8,193,359
Dutch East Indies	3,594	115,547	2,388,568	3,869	124,388	2,571,327
Rest of Asia	8,409	270,385	5,589,353	8,003	257,275	5,318,352
ASIA	35,614	1,145,015	23,669,555	35,228	1,132,588	23,412,672
WORLD TOTAL	553,360	17,790,597	367,764,279	585,569	18,826,086	389,169,727

ounces. Since that time the tendency has been reversed: the output for 1923 was 17·790 million fine ounces, and for 1924, 18·826 million fine ounces. The detailed figures for those two years—the latest available—as given by the Director of the United States Mint, will be found stated in Table VIII on p. 648.

The question of the future production and consumption of gold has acquired considerable importance during the last few years. Not only are a large number of countries, formerly on the gold standard, returning to *some form* of such standard, but the demand is made for an extension of the gold standard to *new* areas, such as China, and for alterations to be made in the existing systems of certain countries—for example, India—which might have the effect of increasing the total *monetary* demand for gold. At the same time, the supplies of gold may be affected by increased consumption of gold in the "industrial arts" and by hoarding in India, Egypt, and the East generally.

An estimate of future production and consumption was presented to the Royal Commission on Indian Currency and Finance by Mr Joseph Kitchin of the Union Corporation.[1] Broadly put, Mr Kitchin assumes that the world production of gold will be, in the aggregate, £395 million stg. in the five years 1925–1929, and £360 million stg. in the period 1930–1934. Against this must be set the figures of consumption.

	Five Years to 1929.	Five Years to 1934.
	Million £.	Million £.
Industrial Arts (America and Europe)	90	110
India	120	110
China	10	15
	220	235
Estimated gold production . .	395	360
Balance available as money . .	175	135
Balance available, rate per annum .	35	27

On these figures, the aggregate output and the balance available for the monetary supply of the world are both falling. Though the World War concealed the underlying forces, Mr Kitchin believes that the year 1920 concealed a real turning-point

[1] *Royal Commission on Indian Currency and Finance*, vol. iii, Appendix 81. But see also his article in the *Review of Economic Statistics*, July 1926, p. 114, *et seq.*

in the monetary history of the world. "That year, the writer believes from the evidence of the figures, commenced another period of stationary or falling factors the end of which cannot yet be foreseen which would normally last, *with the world working on the gold standard as before the War*,[1] until such time as the difference between the output and the demand for gold again permitted of a rapid increase in gold money *per capita*. This difference can be obtained only in two ways, that is, by increased supply or lessened demand, or both—by new gold discoveries such as those of California and Australia or of the Rand, or by the industrials, India and China moderating their requirements. All that can be said on that subject at present is that there is no indication at present of new gold discoveries of importance: that the industrial arts, as time goes on and with a normal world, are likely to exact a greater toll, as the pre-war figures and rate of increase suggest: that India's demand prior to the War was growing rapidly, and that China, which is passing from the copper to the silver stage, should in time with increasing wealth progress towards the gold stage, as India has done before it." [2]

Assuming that the statistical basis of this argument is substantially correct and that the suppositions made prove ultimately to be verified, the result would prove to be a period of falling prices. Whether such a period of falling prices is to be welcomed or not, depends upon the opinion entertained as to the social consequences of a long-continued fall of prices. Whether this be good or bad, it is probable that the experiences through which the world has passed in the last twelve years are likely to exert a considerably modifying influence. For it is possible to protect oneself against the consequences of a certain result only if foreknowledge of that result is obtainable. If it really is certain that prices are likely to fall, it is possible to base economic action on the knowledge, and thus the situation is, in fact, altered. Borrowers, for instance, will be encouraged to protect themselves by hesitating to enter into long-period contracts unless safeguarded against the pressure due to falling prices. It is thus possible that the social consequences of falling prices in the future may be very different from what they were in the past.

In any case, one element of great uncertainty is present, which makes pessimistic forecasts as to the future of prices at least premature. The world is no longer "working on the gold standard as before the War," because gold is no longer in circulation as a medium of exchange as it was, on a great scale, in pre-war days. It enters into the currency systems of the post-war world primarily as the constituent or part-constituent of the

[1] Italics not in original.

[2] *Op. cit.*, p. 521.

reserves of Central Banks. Under these conditions, a great measure of economy in the use of gold can be achieved by a gradual reduction of the reserve ratios maintained by the Central Banks. There is no reason to suppose that the Central Banks of the world will not conduct their business just as safely with an average reserve ratio of 25 to 30 per cent., or 20 to 25 per cent., as they now do with reserve ratios varying between 40 and 60 per cent. What is required is simply the re-education of the public, and, in this respect, co-operation between the banks themselves is capable of doing much, because, if the action taken is agreed upon by all the banks, it will prevent erroneous inferences from being drawn from the action of a single one of them. It is in directions like these, rather than in the adoption of some plan for permanently keeping the price level at or near some arbitrary level by the aid of index numbers, that immediate co-operation between Central Banks can most usefully be attempted. It is, at any rate, desirable to insist that if certain experts—notably Professor Gustav Cassel and Mr Kitchin—are inclined to regard the price level as likely to fall, there are others, including the distinguished South African economist, Professor Lehfeldt, who think that economy in the use of gold is more likely to produce the opposite effect—that is, a rise of prices.[1] Professor Lehfeldt has, therefore, recently revived the idea of an international control of the sources of gold output, so as to stabilise prices by a "gold valorisation" scheme, which would check the output of gold as prices rose.

If the future value of gold is thus still a matter of uncertainty, it would appear that the future value of silver is likely to fall rather than to rise. The ratio of silver to gold, which was as high as 15·31 in 1920, a figure higher than any reached since the beginning of the sixties of the nineteenth century, fell rapidly thereafter. The ratio in the four subsequent years was 25·6, 27·4, 29·5, and 27·8. The same tendency to a falling value of silver is illustrated by the London price of silver, which fell especially rapidly in the second half of 1926, under the influence of the "bearish" sentiment aroused by the *Report of the Royal Commission on Indian Currency and Finance*, since it was feared that the adoption of the scheme recommended by the Commission would involve a considerable decrease in the Indian consumption of silver and in consequence of disturbed conditions in China. The fact is that silver is largely a joint-product of other forms of mining, so that a drop in the price of silver does not necessarily directly affect the volume produced. Thus, though the average price of standard silver in the London bullion market fell from $61\frac{1}{32}$ pence in 1920 to $36\frac{23}{32}$ pence in 1921, the output in 1921

[1] Vide *Controlling the Output of Gold*, by R. A. Lehfeldt, p. 20.

was 171·3 million fine ounces against 173·3 million fine ounces in the previous year, whilst the output has risen considerably since then. Tables IX and X throw light upon these matters.

TABLE IX.—*Price of Silver in London*

	Highest Price.	Lowest Price.		Highest Price.	Lowest Price.
1924.	Pence.	Pence.	1925.	Pence.	Pence.
January	34 1/16	33 1/8	July	32 3/8	31 3/4
February	34 1/16	33 5/16	August	32 7/8	31 15/16
March	33 3/4	33 5/16	September	33 7/16	32 1/8
April	33 5/16	32 13/16	October	33 3/16	32 3/8
May	35	32 13/16	November	32 3/4	31 15/16
June	35 1/8	34 1/4	December	32 5/16	31 1/2
July	34 1/4	34 1/4			
August	34 3/8	33 3/8	1926.		
September	35 3/16	34 5/16	January	31 13/16	30 13/16
October	36 1/16	34 1/4	February	31 1/8	30 9/16
November	34 1/2	33 5/16	March	30 9/16	30 1/8
December	33 3/8	31 1/2	April	30 1/16	29 7/8
			May	30 7/16	29 13/16
1925.			June	30 9/16	30 1/16
January	32 9/16	31 3/4	July	30 1/4	29 3/8
February	32 3/8	32 1/8	August	29 1/4	28 1/2
March	32 5/16	31 9/16	September	28 1/16	26 1/4
April	31 11/16	31 1/16	October	26 3/4	24 1/4
May	31 1/2	31 1/16	November	26	24 9/16
June	32 1/2	31 3/8	December	25 7/16	24 1/16

Figures January 1914 to June 1925 from the *Report of the Director of the Mint, U.S.A.*, 1925.
Figures July 1925 to December 1926 from the *Economist*.

The rise in the price of silver during and immediately after the War resulted in considerable economy in the use of silver for monetary purposes, through the substitution of small notes for silver coin and by alterations in the metallic content of new silver coins issued. Changes by which small notes would be replaced by silver and by which the pre-war fineness of the silver coin would be restored would, of course, assist the silver market. The inauguration of the gold standard in China and of the gold bullion standard in India would not necessarily reduce the value of silver, provided that no attempt were made in these areas actually to circulate gold coins. As the wealth and population of these areas increased, the demand for silver would rise also.

TABLE X.—*World Production of Silver*, 1923 *and* 1924

(From *Mint Report, U.S.A.*, 1925)

Country.	Calendar Year 1923.			Calendar Year 1924.		
	Kilos, fine.	Ounces, fine.	Value ($0·70028 per Ounce).	Kilos, fine.	Ounces, fine.	Value ($0·74456 per Ounce).
			$			$
Germany	116,734	3,752,998	2,628,149	116,734	3,752,998	2,794,332
England	1,077	34,625	24,247	969	31,153	23,195
France	6,626	213,025	149,177	4,599	147,858	110,089
Italy	12,000	385,800	270,168	13,300	427,595	318,370
Austria	441	14,178	9,929	892	28,678	21,352
Russia	6,000	192,900	135,084	6,221	200,000	148,912
Belgium	..	..	..	..	..	..
Bulgaria	..	..	..	..	..	..
Czechoslovakia	21,844	702,285	491,796	21,844	702,285	522,893
Denmark	..	..	..	..	..	..
Finland	..	..	..	..	..	..
Hungary	..	..	..	..	..	..
Yugoslavia	764	24,562	17,200	972	31,250	23,267
Lithuania	..	..	..	..	..	..
Netherlands	..	..	..	..	..	..
Norway	9,267	297,934	208,637	13,200	424,380	315,970
Poland	637	20,479	14,341	11,631	373,937	278,418
Portugal	..	..	..	..	..	..
Roumania	2,000	64,300	45,028	2,246	72,209	53,764
Spain	86,414	2,778,210	1,945,525	89,579	2,879,966	2,144,307
Sweden	18	578	405	..	..	..
Switzerland	..	..	..	..	..	..
Rest	5,977	192,160	134,566	11,840	380,656	283,421
EUROPE	269,799	8,674,034	6,074,252	294,027	9,452,965	7,038,296
U.S.A.	2,279,808	73,295,810	51,327,590	2,033,183	65,366,840	48,669,534
Canada	552,246	17,754,706	12,433,265	613,882	19,736,323	14,694,877
Mexico	2,826,099	90,859,083	63,626,798	2,845,603	91,486,136	68,116,917
Central America and W. Indies	77,760	2,500,000	1,750,000	83,550	2,686,150	2,000,000
Argentine	..	..	..	..	..	..
Brazil	890	28,613	20,037	890	28,613	21,304
Colombia	98	3,150	2,206	90	2,900	2,159
Guiana	264	8,500	5,952	271	8,700	6,478
Peru	580,242	18,654,793	13,063,578	580,242	18,654,793	13,889,613
Uruguay	..	..	..	..	..	..
Venezuela	84	2,700	1,891	84	2,700	2,010
Chile	103,810	3,337,491	2,337,178	104,438	3,357,688	2,500,000
Bolivia	162,141	5,212,826	3,650,438	141,051	4,534,781	3,376,417
Ecuador	2,333	75,000	52,521	2,177	70,000	52,119
AMERICA	6,585,775	211,732,672	148,272,154	6,405,461	205,935,624	153,331,428
Transvaal, Cape Colony, and Natal	42,735	1,373,930	962,136	43,534	1,399,626	1,042,105
Rest of Africa	5,297	170,303	119,259	12,504	402,010	299,320
AFRICA	48,032	1,544,233	1,081,395	56,038	1,801,636	1,341,425
AUSTRALIA and N.Z.	429,819	13,818,701	9,676,959	334,038	10,739,314	7,996,064
China	3,110	100,000	70,028	3,421	110,000	81,902
Japan	111,893	3,597,351	2,519,153	109,952	3,534,943	2,631,977
British India	151,262	4,863,066	3,405,507	165,138	5,309,203	3,953,020
Dutch E. Indies	49,113	1,578,963	1,105,730	64,799	2,083,256	1,551,109
Rest	3,126	100,494	70,374	3,152	101,354	75,464
ASIA	318,504	10,239,894	7,170,792	346,462	11,138,756	8,293,472
WORLD TOTAL	7,651,929	246,009,534	172,275,552	7,436,026	239,068,295	178,000,685

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