

THE VALUE OF MONEY

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A Discussion of various Monetary Theories,
and an Exposition of the Yield Theory of
the Value of Money

BY
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CONTENTS

SECTION I

VARIOUS MONETARY THEORIES

PART I

	PAGE
INTRODUCTION	3
CHAP. I. THE OLD PHILOSOPHERS AND THE WRITERS OF THE MIDDLE AGES	6
Xenophon, Aristotle, John Buridan, Nicole Oresne, Molinaeus.	
II. THE BEGINNING OF MODERN HISTORY (THE SIX- TEENTH AND SEVENTEENTH CENTURIES)	9
John Hales, Malestroit, Jean Bodin, Davan- zati, Rice Vaughan, Thomas Mun, Pollex- fen, Sir William Petty, Montanari, John Locke.	
III. THE EIGHTEENTH CENTURY	18
§ 1. John Law.	
§ 2. Richard Cantillon.	
§ 3. Montesquieu.	
§ 4. Bonnot de Condillac.	
§ 5. David Hume.	
IV. ADAM SMITH	32
V. THE NINETEENTH CENTURY	39
§ 1. Ricardo.	
§ 2. The Bullion Report.	
§ 3. John Stuart Mill.	
§ 4. MacLeod.	
§ 5. Jevons.	
§ 6. Pierson.	
§ 7. Menger.	

CONTENTS

PART II

MODERN WRITERS

CHAP.		PAGE
VI.	THE MECHANIC MONEY THEORIES	56
	§ 1. Irving Fisher.	
	§ 2. Cassel.	
	§ 3. Schumpeter.	
	§ 4. Kemmerer.	
	§ 5. Knut Wicksell.	
VII.	BRUNO MOLL: "LOGIK DES GELDES"	84
VIII.	THE "ANRECHT" THEORY	89
	§ 1. A precursor: Hildebrand.	
	§ 2. Bendixen.	
	§ 3. Karl Elster.	
IX.	AN APPLICATION OF THE THEORY OF THE MARGINAL UTILITY TO THE DOCTRINE OF THE VALUE OF MONEY. LUDWIG VON MISES	107
X.	THE RELATIVE PROBLEM: THE CHANGES IN THE PRICE LEVEL. HELFFERICH	114
XI.	THE INCOME THEORIES	119
	§ 1. Friedrich von Wieser.	
	§ 2. G. M. Verriijn Stuart.	
	§ 3. Albert Aftalion.	
	§ 4. Von Böhm-Bawerk.	
XII.	THE CASH-BALANCE THEORIES	145
	§ 1. Marshall and Keynes.	
	§ 2. Marshall.	
	§ 3. Keynes.	
	§ 4. Pigou.	
	§ 5. Edwin Cannan.	
	§ 6. Hawtrey.	
	§ 7. D. H. Robertson.	
XIII.	A THEORY OF BUSINESS CYCLES AND THE PROBLEM OF THE VALUE OF MONEY	170
	J. M. Keynes, <i>A Treatise on Money</i> .	

SECTION II

THE YIELD THEORY OF THE VALUE OF MONEY

CHAP.		PAGE
XIV.	THE FUNCTIONS OF MONEY	197
	§ 1. The functions of money.	
	§ 2. A function that money does not fulfil.	
XV.	VOLUME AND VALUE OF THE STORES OF PRODUCERS AND DEALERS	212
XVI.	THE VALUE OF THE STOCKS OF CONSUMERS	224
XVII.	THE FIRST FACTOR: THE VALUE OF THE TRADESMAN'S STOCK OF MONEY	231
XVIII.	THE FIRST FACTOR (<i>continued</i>): THE VALUE OF THE STOCK OF MONEY OF CONSUMERS	248
XIX.	THE SECOND FACTOR: DEMAND FOR MONEY FOR THE DISCHARGING OF DEBTS AND ITS INFLUENCE ON THE VALUE IN EXCHANGE	260
XX.	THE THIRD FACTOR: INFLUENCE AND SIGNI- FICANCE OF FUTURE POSSIBILITIES. THE CAUSE OF THE GENERALLY LOWER RATE OF INTEREST ON SHORT-TERM CREDITS	265
XXI.	THE FOURTH FACTOR: THE STABILITY OF THE VALUE OF MONEY	275
XXII.	THE FIFTH FACTOR: THE FRICTION IN THE CIRCULATION	283
XXIII.	THE SIXTH FACTOR: THE MARKETABILITY OF OTHER COMMODITIES AND OF SECURITIES	287
XXIV.	THE GILT-EDGED CLAIM AND ITS INFLUENCE ON THE VALUE OF MONEY. COMMERCIAL ACCEPT- ANCES AND BANKERS' ACCEPTANCES	297
XXV.	BANK-NOTES AND CURRENCY ISSUED BY THE STATE	308
XXVI.	PRIVATE BANKS	333
	INDEX	359

SECTION I
VARIOUS MONETARY THEORIES

PART I

INTRODUCTION

THE PROBLEM OF THE VALUE OF MONEY

THE owner of a sum of money can purchase goods (or services) with it. At any given moment the prices in money differ for the different goods among themselves, according as these different goods have a higher or a lower exchange value. In course of time the prices of goods *inter se* vary continually—some goods become comparatively dearer, others cheaper. But it may also occur that the prices of goods in general rise or fall. Although even then the variations of the prices for the different species are not the same, the modifications are such that on an average a rise or fall is observed. The level of prices is then said to have risen or fallen.

The modifications of the level of prices have, from early times, been the subject of the researches of economists. These researches are therefore directed to the *variations* of the level of prices, hence to the variations of the exchange value of the money. Until quite recently endeavours were made almost exclusively to find an explanation of the *variations* in the exchange value of money.

Not until the end of the last century—and even more so in this century—has the problem of the money value been clearly set forth in an entirely different form, though indications of this new way of formulation were already met with here and there in earlier writers.

This modified and infinitely more exact formulation is based on the thought that there would also be a problem of the value of money if no fluctuations of the price level occurred. For then, too, the fact would have to be accounted

for that for a definite quantity of money a definite quantity of commodities can be purchased. In other words, how is it to be explained that at a given moment the level of prices is as it is, and not, for instance, twice as high or twice as low? This is the modern conception of the money problem, and thus it will be treated in this book.

In this general proposition of the problem the question is even disregarded—at least for the present—whether, after all, money *has* value in the same way as the goods we consume or which are serviceable to us in the production. For some authors deny this, and their considerations may also be taken as falling under the general formulation of the problem—viz. what is the reason that for a quantity of money a quantity of goods can be bought, and what factors—lying on the money side—determine this?

Money presents various problems. In this book the value problem will be exclusively treated, together with the other questions inseparably connected with it, as that of the functions of money and that of its utility.

In the first section the theories of a number of writers, who have brought the value problem either nearer to or further from its solution, will be successively treated. In view of the immense volume of the material in the literature on money, only a limited choice from such writers was possible. Instead of trying to come anywhere near completeness, I will only endeavour to place a number of theories side by side, and over against each other, each with the qualities characteristic of it. In doing so my purpose is, on the one hand, to define the problem as closely as possible; for from the critical discussion of the characteristic features of each theory follows—sometimes just where this theory falls short—a closer specification of that side of the problem that was not brought to a complete solution. On the other hand, this discussion of different theories can provide both a justification for and an elucidation of my attempt to give a solution of my own. This attempt at a solution of the problem is dealt with in the second section of the book.

This is not the first publication of the value-theory of money drawn up by me. In 1918 I gave the first very con-

cise and schematical exposition of it in a treatise published in the Dutch language, entitled : *De waarde der ruilmiddelen* (The Value of Media of Exchange).

I gladly avail myself of this opportunity to express my indebtedness to Miss J. D. Van der Waals, who with me provided the translation of my book.

CHAPTER I

THE OLD PHILOSOPHERS AND THE WRITERS OF THE MIDDLE AGES

THE problem of the value of money, as laid down in what precedes is, in this form, not found in early writers. Originally it was only the fluctuations to which prices in general were subjected that attracted attention. From the question why the level of prices is sometimes higher, sometimes lower, the problem has developed only in very recent times to the question, why for a definite sum of money it is possible to purchase a certain quantity of goods, and—at a given moment—exactly that definite quantity of goods.

This course of development has been gradual: there was not a definite moment in the literature on money at which a writer consciously and deliberately stated that he had passed from the fluctuation problem to the real problem of the value of money. This development is, however, evident when the considerations of earlier times are placed side by side with the theories of recent times.

GREECE AND ROME

Mr. Arthur E. Monroe ¹ observes in his *Monetary Theory before Adam Smith* ² that already in classical times the value problem of money did not entirely escape notice. It seems to have been mentioned for the first time in Xenophon's *Revenues of Athens*:

“Gold, if it appears in great quantity, becomes much less valuable, and causes silver to bear a higher price, but silver does not show the same effect, the reason being that nobody ever had so much silver as not to desire more.”

¹ As I have had no opportunity to personally consult the earliest literature I rely on the thorough and trustworthy works of Mr. Monroe.

² Monroe, p. 8.

We can scarcely speak here of a formulation of the value problem of money, but rather of a denial of the existence of the problem. Gold, says Xenophon, has a varying price in silver money, but silver a constant price in the same money, and he thinks he is justified in assuming an invariable value of the metal (as well as of the money) from this constant price for the money metal.

Aristotle thought that the value of money is governed by the same laws as other things. A difficulty here is the question whether Aristotle referred to the money metal or to the money itself.

Mr. Monroe is of opinion that the former is meant in connection with another statement by Aristotle—that money is to be made of a useful commodity easily adaptable to the purposes of life.

About the Roman authors Mr. Monroe remarks that the “references to monetary questions are even more scanty and fragmentary than those we find among the Greeks.”¹

It is difficult to distinguish here any value theory of money.

THE MIDDLE AGES

In the Middle Ages principally the commodity-theory was developed, the theory that taught that the value of money rested on that of the metal of which it was made. John Buridan, who was appointed rector of the University of Paris in 1327, wrote, according to Mr. Monroe :

“The value of money must be measured by human need, for although we do not need gold or silver for our necessities, still the rich need them for their luxurious purposes. And therefore we see that gold and silver in the mass are of the same value or about the same, as in money.”

This is in substance the same as Xenophon said.²

As value-theory of money these statements hardly give occasion for further investigation.

Yet the practical question of the fluctuations in the prices of commodities often attracted attention through the more frequent occurrence of debasement of the currency. Several

¹ Monroe, p. 10.

² *Ibid.*, p. 26.

authors saw a connection between the rises of prices and the depreciations of the currency, as Nicole Oresne, Bishop of Lisieux, in his *Traictie de la Première Invention des Monnaies* (about 1360). Oresne more especially denounces the injustice of debasement of the currency, through which some are injured, others benefited.

Molinæus (1500-1566) embraces another opinion in his *Tractatus contractuum et usurarum*. If all money be raised proportionally, all the prices will rise in the same proportion. Nobody injures another, or is injured. And when the weight of the money is reduced, the value of the money-metal rises, and it would be unjust if a creditor received more in the debased money. It is hardly possible to draw from this any other conclusion than that, for Molinæus, the money unit is the money unit, invariably of the same value, no matter what is done with it. The Prince determines the weight of the coin, and thus the price of the money-metal. The price of the money unit is always the same, however much the coin is changed. Molinæus has given no thought to the value of money in terms of goods.

CHAPTER II

THE BEGINNING OF MODERN HISTORY (THE SIXTEENTH AND SEVENTEENTH CENTURIES)

MOLINÆUS gives a not very felicitous interpretation of the thought which often finds expression in the works of the Middle Ages, that the value of money would not be so much an economical as a juristic question. This *valor impositus* is conferred on money by what the Prince decrees for it. It is difficult to conceive the train of thought of these writers, unless we realise that the economic problem had not yet forced itself upon their thoughts. More and more, however, the opinion gained ground that the depreciation of the money had a real significance for economic life. It made itself, indeed, but too clearly felt in the rise of prices following the debasement of the money. Thus a clear, undeniable connection was established for the first time between the value of money and something else. That other factor was for the present, however, only the weight of the money metal. If the weight of the money was reduced, the prices rose : this was the relation that was found to exist. The question concerning the *value* of this weight in money-metal or the money itself was not even considered.

It is curious to see how thought always followed the events. After the depreciations of the currency and the subsequent rise of the prices, the conviction gradually gained ground that here a logical relation could be pointed out. Thus circumstances changed the theory of the *valor impositus* into that of the *bonitas intrinseca*. But as at this stage no events gave occasion for a closer examination of the value of the money-metal, the matter rested there.

About the middle of the sixteenth century the large quantity of precious metals imported from the New World

caused the prices to rise. It appeared no longer possible to account for this only by debasement of the currency. The relation established between the level of the prices and the weight of the money-metal contained in the money was no longer a sufficient explanation. Not until then did the problem of the value of the money-metal become a matter for consideration.

In the *Discourse of the Common Weal of this Realm of England*, however (about 1550), which is ascribed to John Hales, the writer still adopts entirely the standpoint that the rise of the prices must be attributed to debasement of the currency.

The same opinion is advocated in the *Paradoxes of Malestroit*. Though the prices in France are higher than in former times, says Malestroit, the goods are not really dearer, for they are not sold for more gold or silver than before.

As a reply, the famous *Réponse aux Paradoxes de M. de Malestroit touchant l'Encherissement de toutes Choses et des Monnayes*, by Jean Bodin, appeared in 1568. The latter demonstrated that the rises of the prices far exceed the debasement of the money, and he assigns five causes for these rises: the abundance of gold and silver, monopolies, scarcity of commodities, indulgence of kings and nobles, and debasement. The first is the "principal and almost only cause."¹ Bodin considers the value of gold and silver subject to the same laws as the value of other commodities, and the value of the money is simply that of the metal of which it is made.

In 1582 a real quantity theory appeared in Davanzati's *Lezione delle Monete*:

"All these (earthly things which satisfy men's wants) are, by the consent of nations, worth all the gold (and in this I include silver and copper) that is wrought: therefore all men covet all the gold to buy all the things to satisfy all their wants to be happy. The parts follow the whole: therefore, how much of a man's happiness . . . depends on a thing, so much is it worth of all his gold and labour."²

From the first part of the first sentence one would conclude

¹ Monroe, p. 57.

² *Ibid.*, pp. 59, 60.

that a parity existed between the value of the quantity of gold and that of the goods. The second part of the second sentence removes some of this certainty, because suddenly the writer speaks of what it is worth—"of all his gold and labour." Nevertheless, these are the first indications of a (for the rest still vague) quantity theory.

About 1630 Rice Vaughan wrote his *Discourse of Coin and Coinage*, in which the same standpoint is adopted as by Bodin, in that he attributes the rise of prices to the great abundance of gold and silver and the depreciation of the money. All other causes of changes of prices, such as scarcity, war, and depopulation, will have only a temporary influence. Allied to this opinion, again, are the views of Thomas Mun, published in 1664 in his *England's Treasure by Forraign Trade*. Mun also sees both causes for the fall of prices, but he lays greater stress on the debasement of the money than on the influence of increased supplies of gold and silver.

A remarkable explanation appeared in Pollexfen's *Discourse of Trade*. He says there: ¹

"As it is unlikely that, if three-quarters of an acre were by law called an acre, it would exchange for as much silver as before, so it is unlikely that three-quarters of a crown piece, when called a crown, should exchange for as much land as before."

In this terse, lucid, and plausible statement Pollexfen considers money in its function as a standard of value. If the parallel he draws between a surface measure and a value measure were valid in every respect, the problem of the price-level would already have been brought a great deal nearer to its solution.

In reality, however, the comparison between these two kinds of measures does not hold good in every respect. For money is not exclusively the measure of values: it has also other functions which influence its value. An "acre" is a fixed measure, but a "crown" is a varying measure.

A new form of a money theory is found in the writings of Sir William Petty ²—i.e. that of a cost-of-production theory.

¹ Monroe, p. 106.

² *The Economic Writings of Sir William Petty*, edited by Charles Hull. Cambridge, 1899.

On pp. 50 and 51 Petty writes :

“ If a man can bring to London an ounce of silver out of the earth in Peru in the same time that he can produce a bushel of corn, then one is the natural price of the other. Now if, by reason of new and more easy mines, a man can get two ounces of silver as easily as formerly he did one, then corn will be as cheap at ten shillings the bushel as it was before at five shillings *ceteris paribus*.”

As regards the first part of this sentence, we may say that Petty thereby creates a distinction between himself and almost all other writers who had treated the money problem, as therein he does not try to explain fluctuations in the value of money, but establishes a direct connection between the value of the money-metal and another good at an arbitrarily chosen moment.

This connection he explains from, and reduces to, the space of time required, on the one hand for the production of the money metal, and on the other of the corn, which would be a very easy way of solving the problem. Unfortunately, there is indeed a relation, but one that, if it is to explain anything, would have to be reversed. For an ounce of silver will not have the same value as a bushel of corn because the production requires the same amount of time ; but, inversely, people will be willing to spend the same amount of time ¹ on the production of the one as on that of the other if they are considered of the same value.

Petty has also treated a problem which is closely allied to the value problem—viz. that of the quantity of money required for the trade of a country.

On pp. 112 and 113 we find :

“ It may be asked, If there were occasion to raise 4 millions per Annum, whether the same 6 millions (which we hope we have) would suffice for such revolutions and circulations thereof as Trade requires? I answer yes; for the Expence being 40 millions, if the revolutions were in such short circles, viz. weekly, as happens among poorer artisans and labourers, who receive and pay every Saturday, then $\frac{40}{52}$ parts of 1 million of money would answer those ends. But if the circles be quarterly, according to our custom of paying rent and gathering Taxes, then 10 millions were requisite.”

¹ Disregarding other factors for the sake of simplicity.

There is a connection established here between the quantity of money which a country needs and the velocity of circulation. Later on, in the different forms of the quantity theory, others have given a relation between the value of the money and the available quantity at a definite velocity of circulation. Petty introduced this velocity of circulation only for the determination of the required quantity, for in his opinion the value could already be determined from the time necessary for the production.

A quantity theory defined more precisely than Davanzati's is found in Montanari's *Della Moneta*. Montanari says there :

"All the commodities in commerce between men, taken together, are worth as much as the gold, silver and copper coined and in circulation." ¹

As Monroe also observes, there are here, too, further limitations of the theory of Davanzati—viz. that the goods are limited to those in commerce and the money to coined money in circulation. From this arises the necessity to explain both the relation between "commodities in commerce" and "commodities not in commerce," and likewise the relation between money metal that is coined and that which is not coined.

At one point the necessity for the closer determination of this relation is very apparent ²—where he says that if there were more money in circulation, and not more commodities, a higher price would be paid for the goods, or the money would be partly withdrawn from circulation and the metal would be used for other purposes. Here the question at once suggested itself, Which of these two—rise of prices or use of the money metal for non-monetary purposes—will be chosen?

More important than the objection to the parts of the problem that Montanari did not try to solve is the objection to the main question for which he thinks he *has* given the solution. For the parity that Montanari establishes is a very arbitrary assumption. It is true that in every exchange there is equivalence between the exchange value of the exchanged commodity and the money paid for it, but it is a

¹ Monroe, p. 108.

² *Ibid.*, p. 109.

great step to conclude from this that all the goods that are in commerce should be equal in value to all the coined money in circulation. In later quantity theories the possibility is taken into consideration that in trade the same money may be used more than once.

In *The Works of John Locke*, Vol. V,¹ p. 36, an interesting passage is found from a letter written in 1691 :

"Money, therefore, in buying and selling, being perfectly in the same condition with other commodities, and subject to all the same laws of value, let us next see how it comes to be of the same nature with land, by yielding a certain yearly income, which we call use, or interest. For land produces naturally something new and profitable, and of value to mankind; but money is a barren thing, and produces nothing; but by compact transfers that profit that was the reward of one man's labour, into another man's pocket."

Locke then endeavours to account for the fact that, in spite of this thesis that "money is a barren thing, and produces nothing," people are willing to pay interest for the loan of money. In my opinion he does not succeed in this until he abandons the thesis from which he started and comes to a very different conclusion (on p. 37) :

"It being evident, therefore, that he that has skill in traffic, but has not money enough to exercise it, has not only reason to borrow to drive his trade and get a livelihood, but as much reason to pay use for that money as he who, having skill in husbandry, but no land of his own to employ it in, has not only reason to rent land, but pay money for the use of it."

From this it would necessarily have to be inferred that money is not "a barren thing," as Locke had just stated; for here he explains that in co-operation with "skill in traffic" it is able to provide "a livelihood" for somebody. Now two different conceptions about this would be possible, depending on whether Locke is supposed to mean here by money capital in general or more particularly money—in other words, whether the results attainable with the borrowed money may be ascribed to the money itself or to that which was bought with it after it had been borrowed. There is a remarkable passage on p. 46, from which the conclusion

¹ Edition of 1823.

may be drawn that Locke decidedly meant the former. It appears from this passage that Locke saw a certain connection between the value of money, the yearly income to be obtained by means of it, and the volume of trade. He says :

“ That which raises the natural interest of money, is the same that raises the rent of land, *i.e.* its aptness to bring in yearly to him that manages it, a greater overplus of income above his rent, as a reward to his labour. That which causes this in land, is the greater quantity of its product, in proportion to the same vent of that single commodity, but that which causes increase of profit to the borrower of money, is the less quantity, in proportion to trade, or to the vent of all commodities, taken together, and vice versa.

“ The natural value of money, as it is apt to yield such a yearly income by interest, depends on the whole quantity of the then passing money of the kingdom, in proportion to the whole trade of the kingdom, *i.e.* the general vent of all the commodities.”

In the last sentence four conceptions are brought together :

- (1) The “ natural value of money.”
- (2) The “ yearly income by interest ” that money is able to yield.
- (3) The relation between the quantity of money and the volume of the trade.
- (4) The “ general vent of all the commodities.”

The connection that was established here already in 1691 between the first two is for me one of the most remarkable passages in the literature on the value of money, which contains only scanty indications in this direction. Unfortunately, however, Locke has not logically worked out this relation; on the contrary, what immediately follows means already a return from the course taken. For instead of a further examination of the relation between the “ value of money ” and the “ yearly income ” to be obtained with it, something quite different is given, as it is there stated that the “ value of the money ” depends on the proportion of the quantity of the “ then passing money ” and the “ whole trade of the kingdom.” Immediately follows a further

explanation of what we have to understand by "the whole trade of the kingdom"—*i.e.* "the general vent of all the commodities." Thus in one sentence two different relations are laid down, which are, however, in my opinion incompatible. It seems to me that a choice will have to be made between these two, and that the value of the money can, at most, depend on one of them, but certainly not on both at the same time. For it is by no means indisputable that if in two different years "the whole trade of the kingdom—*i.e.* the general vent of all the commodities"—happens to be exactly the same, the "yearly income" that could be acquired with the money would also be the same. This is, for instance, no more to be expected than that if in two successive years the same merchant fleet should transport the same quantity of goods, the same annual profit would be made in those two years.

Locke has seen that money is an almost indispensable medium for trade, and also that people are willing to pay interest for a loan of money because, among other things, in trade an income may be gained by means of this money. In addition, he has found that, in general, more money can find employment if trade extends under, for the rest, equal circumstances. But it seems rash to conclude from this that the volume of the trade and the income to be derived from it should run parallel.

There is undoubtedly a rough connection between the volume of the trade and the value of the money, other things being equal. This connection might, for instance, be compared with that between the value of an electric power station and the quantity of electric current supplied by it, other things being equal. But a direct relation may be laid down between the value of the power station and the profit to be made by it. It seems to me, however, to be by no means justifiable to mention these two relations side by side as equivalent factors for an explanation of the value of the power station.

The same remark holds good for Locke's arguments for the explanation of the value of money. Besides, the volume of the trade as a factor in the explanation and determination

of the value of money would, at best, be in its place only when the relative problem was studied. For if, without committing an error, it should be allowable to assume that the money has twice its value if the volume of the trade is twice as great, this reasoning would be valid only for the solution of the relative problem. Least of all would it be possible to arrive in this way at the solution of the absolute problem. If Locke had attempted it, he would certainly not have succeeded in solving the problem of the value of money at a given moment, X , from the given value, "the whole trade of the kingdom—*i.e.* the general vent of all the commodities," T . This is therefore another reason why this explanatory element of Locke's should be discarded when examining the absolute problem.

CHAPTER III

THE EIGHTEENTH CENTURY

§ I. JOHN LAW

IN the beginning of the eighteenth century appeared the remarkable work by John Law, *Money and Trade Considered*. He says there on p. 6 :

“ Before the use of money was known, goods were exchanged by barter or contract, and contracts were made payable in goods.

“ This state of barter was inconvenient and disadvantageous :

(1) He who desired to barter would not always find people who wanted the goods he had and had such goods as he desired in exchange.

(2) Contracts taken payable in goods were uncertain, for goods of the same kind differed in value.

(3) There was no measure by which the proportion of value goods had to one another could be known.”

And on pp. 8 and following :

“ Silver as a metal had a value in barter as other goods ; from the uses it was then apply'd to.

“ As goods of the same kind differ'd in value, so silver differ'd from silver, as it was more or less fine.

“ Silver was lyable to a change in its value, as other goods, from any change in its quality, or in the demand for it.

“ Silver had qualities which fitted it for the use of money :

(1) It could be brought to a standard in fineness, so was certain as to its quality.

(2) It was easie of delivery.

(3) It was of the same value in one place that it was in another ; or differed little, being easie of carriage.

(4) It could be kept without loss or expence ; taking up little room and being durable.

(5) It could be divided without loss, an ounce in four pieces, being equal in value to an ounce in one piece.”

And on p. 14 :

"For these reasons, silver was used as money; its being coined was only a consequence of its being applied to that use in bullion, tho' not with the same convenience.

"Mr. Locke and others who have wrote on this subject, say, the general consent of men placed an imaginary value upon silver, because of its qualities fitting it for money.

"I cannot conceive how different nations could agree to put an imaginary value upon any thing, especially upon silver, by which all other goods are valued; or that any one country would receive that as a value which was not valuable equal to what it was given for, or, how that imaginary value could have been kept up. . . .

"It is reasonable to think silver was barter'd as it was valued for its uses as a mettall, and was given as money according to its value in barter the additional use of money silver was applied to would add to its value, because as money it remedied the disadvantages and inconveniences of barter, and consequently the demand for silver increasing, it received an additional value equal to the greater demand its use as money occasioned."

And, further, on p. 16 :

"If either of these values are imaginary, then all value is so, for no goods have any value, but from the uses they are apply'd to, and according to the demand for them, in proportion to their quantity."

We see from these considerations that Law already held very advanced views as regards the relative value problem of money. For he understands that silver, having already value for other reasons, was used as money because this facilitated trade, and because it possessed the qualities required for this more than any other commodity. He also sees that silver acquired an increased value by being used as money. He also has a very clear notion of the influence of debasement of the currency on the value of the money, and, further, of the influence of the increase in the quantities of silver on its value. Hence in a number of cases he can explain the rise or fall of prices owing to causes lying in the money, especially those which concern the supply of money. Many aspects at least of the relative value problem he has mastered.

The absolute value problem, however—the problem as we see it at present—he did not even know of, much less did he succeed in bringing it, however little, nearer a solution.

In so far it would have to be said that the task Law set himself went much less far than that of Davanzati and Montanari with their quantity theory, and Petty with his cost-of-production theory.

Besides, Law still had a very imperfect insight into the distinction between the ideas money and capital.

Thus he says on p. 117 :

"Silver or money increases in quantity by so much as is imported to Europe, more than is consumed or exported. The demand has increased, but not in a proportion to the quantity, for 1st the same quantity of silver or money won't purchase the same quantity of goods as before; 2ndly 10 per cent. was payed for the use of it, now it is to be had at 6, in Holland at 3 or 4."

We see from this that Law was of opinion that the amount of interest that had to be paid for the loan of money was determined by the proportion of the demand and the available quantity—at least, he concludes from the lower rate of interest that the demand has not increased in the same proportion as the supply. If Law could once more have studied the money problem more than two centuries later, he would certainly have wondered that his first argument had proved to be so lasting and his second so untenable. The times of inflation have shown convincingly that "the same quantity of money would not purchase the same quantity of goods," but, at the same time, not only 10 per cent., but sometimes 100 per cent. and more, was "payed for the use of it."

On p. 188 a passage is found expressing a thought which we shall find in many other writers, and which has been of great significance in economic literature. Law there writes :

"Money is not the value for which goods are exchanged, but the value by which they are exchanged: the use of money is to buy goods, and silver while money is of no other use."

This passage is so important that it calls for detailed consideration.

The first part—"Money is not the value for which goods are exchanged"—seems to me in conflict with reality; nor is it conformable to the view demonstrated by Law when he

refuted Locke. There he understood that it would be impossible to maintain an imaginary value of money, because in this case purchasers of goods willing to exchange their goods for that money of imaginary value could never be found.

To the second part—"but the value by which they are exchanged"—I have no objection; in my opinion this is even the cause why money has value, hence that "money is the value for which goods are exchanged."

The third part seems to me again to be in contradiction to the second, and, what is still worse, to Law's clear exposition of the use and utility of money (quoted above). For there Law set forth how money was introduced in order to obviate the "inconveniences of barter." Now he says, however: "The use of money is to buy goods, and silver while money is of no other use." To obviate the "inconveniences of barter" is, however, a very positive use; hence the demand for money. If the only use of money were to buy commodities, money would only be offered in exchange for goods, and there would never be demand for money against goods.

Law was not the last writer who at first gave evidence of having a clear insight into the utility of the use of money and finally failed to see any other use for money than that it buys goods. Since Law many a money theory has broken down because its writer did not consistently carry through his conception of the use of money.

§ 2. RICHARD CANTILLON

In Richard Cantillon's *Essai sur la nature du commerce en général* (1745) we find again a kind of cost-of-production theory, though, on the other hand, he sees very clearly that the market value of goods can differ from the cost of production. He applies the same principles to his money theory as to his theory of the value of commodities in general, which is so self-evident to him that he hardly states his reasons, save where he discusses Locke. Further on in the course of his considerations he discusses the quantity of money

that a country requires. Finally, he puts the value of this quantity equal to the value of a definite part of the yearly produce of the country. Accordingly, his theory, which he started as a cost-of-production theory, passes into something quite different—*i.e.* into a precursor of the theory which, quite recently, has developed into the cash-balance theory, thanks to Marshall and others.

The first, somewhat complicated cost-of-production theory is found on p. 127 *et seq.* :

“The real or intrinsic value of metals, as of all other things, is proportioned to the land and the labour necessary for their production. The cost of the ground required for this production is only to be considered in so far as the proprietor of the mine could obtain a profit by the work of the miners when the veins prove to be richer than ordinarily.¹ The land necessary for the subsistence of the miners and labourers, *i.e.* the working of the mine, often constitutes the principal factor, and often ruins the enterpriser.

“The market value of metals, just as that of all commodities, is now above, now below their intrinsic value, and varies in proportion to their abundance or their scarcity, in accordance with the consumption.

“If the inhabitants of a State should reject the employment of tin and copper on the supposition, however erroneous, that these metals injure health, and if they should universally make use of earthen utensils, these metals would have a low market value, and the labour of producing them from the mine would be discontinued.

“But as these metals have been found to be useful, and as they are employed for commodities, they will always have a market value corresponding to their abundance or scarcity, and to their consumption; and they will always be produced from the mines to replace the quantity consumed in daily use.”

We see in what precedes how Cantillon starts from a pure cost-of-production theory—which later on he tacitly applies to metal circulating as money—and how it then appears in what follows that the intrinsic value derived from ground and labour is modified to the market value by abundance or scarcity and consumption.

In the last sentence quoted a principle even contradictory to the cost-of-production theory finds expression, where

¹ It is remarkable that in this last sentence the same principle is expressed as was afterwards to be the foundation of Ricardo's theory of the ground rent.

the consumption is placed foremost and the working of the mines is admitted to be the consequence. From this the conclusion would have to be drawn that the intrinsic value would have to be found not in the costs, but in the real cause: the demand for the consumption in connection with abundance or scarcity. Cantillon did not try to examine these relations more closely, and his general value theory must therefore remain unsatisfactory. We shall, however, see in what follows how, by a special way, he nevertheless arrives at an at least somewhat less unsatisfactory value theory for money.

Noteworthy also is his criticism of Locke's theory, found on pp. 148 and 149:

"Mr. Locke says that a value has been given to gold and silver by common consent. This is undeniable, because they are not absolutely needed. It is the same common consent as has given, and gives every day, a value to lace, linen, fine cloth, copper and other metals. Men, absolutely speaking, could subsist without any of these things. But it should not be concluded from this that all these things have only an imaginary value. They have a value depending on the ground and the labour required for their production. Gold and silver, like other merchandise, cannot be produced but against costs corresponding to the value which is given to them, and everything that men produce by their labour must provide for the wants of these men."

The last sentence but one embodies a pure cost-of-production theory, but it is immediately followed by almost the contrary: the cost of the production of the goods must correspond to the value that we assign to them.

It is interesting to find that Cantillon evidently did not feel satisfied by this undefined relation between "intrinsic value," resulting from the cost of production, and the market-value. For on pp. 157 *et seq.* he develops a theory on this market value which contains elements of the modern value theory:

"Another supposition. In the early season several cooks have received the order to buy green peas. One cook has ordered ten "litrons" to be bought for 60 livres, another ten "litrons" for 50 livres, a third ten "litrons" for 40 livres, and a fourth ten "litrons" for 30 livres. These orders cannot be executed unless there are forty "litrons" of green peas in the market. Let us

suppose there are only twenty : the sellers, seeing many buyers, will maintain their price, and the buyers will raise their prices to that which has been prescribed to them, so that those who offer 60 livres will be served first. The sellers, then seeing that nobody will go higher than 50 livres, will sell the other ten "litrons" for this price, but those who had the order not to go beyond 40 and 30 livres will return without having bought anything."

In the further course of his reasoning, Cantillon discusses the quantity of money which a country needs, and a little later he even comes to a determination of the value of this quantity of money. It seems to me that in this way the difficulties that he met in the inexplicable relation between intrinsic value and market value of goods in general have been evaded. By this I do not mean to say that Cantillon has given a satisfactory solution of the value problem of money—on the contrary—but undeniably the standpoint which he takes with regard to the value of the quantity of the money circulating in a country is much more tenable than the vague views which he held about the value of goods in general. Accordingly, he arrives at a determination of the value of money by a method which is still followed in a modified form down to the present day.

His considerations regarding the quantity of money that a country needs are found on pp. 171 and 172 :

"It will be seen from what I have just said that the proportion of the quantity of money considered necessary for the circulation of a State is not something incomprehensible, and that this quantity may be larger or smaller in States, according to the general conditions of trade and the velocity of the payments. But it is very difficult to make a definite statement about this quantity in general, which may be different in different countries, and it is only by way of conjecture that I say in general that the money counted to be necessary to carry on trade in a State is about equal in value to a third of the yearly rent of the land."

It appears from the words in which Cantillon has clothed this consideration that he himself does not assign any accuracy to his determination of the quantity of money that a country needs. In two ways uncertainty remains. In the first place, the determination of this quantity in itself was only an estimation, and it can by no means be said to be logically substantiated, nor that it is derived from the

factors constituting the motives for the use of money. If this is, *e.g.*, compared with the modern value theory of goods in general, we see how the constructors of the modern value theory have really succeeded in reducing the complicated idea of exchange value to, and deriving it from, the elementary psychological meaning of the marginal utility of the quantity of a commodity at the disposal of an individual. Further, the quantity which an individual demands of a definite commodity will depend, among other things, on the marginal utility that this quantity will yield him. Also Cantillon sees that we employ money because this proves to be useful, but he has not inquired into the relation between this use and the quantity demanded. Instead he has made an estimation of the quantity that will circulate in a country, and this estimation leaves room for another uncertainty. For he introduces the "rapidity of the payments," which will also have a share in the determination of the quantity, and here, too, an estimation must be the basis of his determination of the quantity of money needed in a country. We shall examine the significance of all this more closely when discussing the modern writers, when we shall see that economists have particularly striven to make these estimations, especially of the "velocity of circulation," as accurate as possible. Which, however, does not imply that, even by the most accurate estimation, a logical explanation and derivation could be obtained of what Cantillon set himself as task—*i.e.* the determination of the quantity of money needed by a country.

From this dubious and by no means logically founded determination Cantillon then derives the value of money. On p. 173 he writes :

"On the supposition that the circulating money is equal to one third of the rent of the land, and that the ground-rent is equal to one third of the annual produce of the same lands, it follows that the money that circulates in a State is equal in value to the ninth part of the total annual produce of the ground."

After the foregoing remarks we need not enter into any further details about this determination of the value; its uncertainty, and especially its unsatisfactory logical deriva-

tion, is the same as that of the determination of the quantity of money which a country needs for its circulation.

§ 3. MONTESQUIEU

Another quantity theory is found in Montesquieu's *De l'Esprit des Loïs* (1747).¹ He writes : ²

" If the quantity of gold and silver present in the world is compared with the total quantity of commodities, it is certain that every piece of merchandise in particular can be compared with a certain portion of the whole quantity of gold and silver. In the same relation as the total of the one is to the total of the other, part of the one will be to part of the other. Let us suppose that there is only one commodity in the world, or that there is only one that is bought, and that it is divided in the same way as the money; this part of this commodity will correspond to a part of the whole quantity of the money; half of the total of one to half of the total of the other; the tenth, the hundredth, the thousandth part of one to the tenth, hundredth, thousandth part of the other. But, as what constitutes the possessions among men is not all at the same time in commerce, and the metals or monies that are the signs of them are not so either, the prices will be fixed according to a compound ratio of the total of the things and the total of signs, and the total of things in commerce and the total of signs in commerce; and as the things that are not in commerce to-day may be there to-morrow, and the signs that are not may also return, the fixing of the prices of things always depends at bottom on the proportion of the total of things to the total of signs."

Montesquieu distinguishes himself here from some writers before him, who had already developed other forms of a quantity theory, in this, that he does *not* say that all the goods are equal in value to all the money, but he says instead that all the goods are in a definite proportion of value to all the money. He then assumes, without adducing proofs, and as self-evident, that this proportion of value remains the same. If the quantity of money increases, the new total quantity of money must have the same value as the former quantity; the value of the money has therefore diminished per unit, in proportion to the increase of the quantity. Accordingly, we read on p. 381 :

¹ Cf. *Oeuvres complètes*, Paris 1846.

² *Ibid.*, p. 380.

"If since the discovery of the Indies gold and silver have increased in Europe in the ratio of one to twenty, the price of victuals and commodities ought to have risen in the ratio of one to twenty. . . ."

It is clear that Montesquieu again deals with the relative money problem, viz. the problem of the variations in the value of the money, not that of money at a definite moment. It seems to me, however, that he has not solved the relative value problem either. If he had shown—supposing this were possible—that there was a permanent proportion between the value of the total quantity of goods and of money, he would have solved the relative problem. If, in addition, he had determined and explained this definite proportion—supposing it existed—also even the other problem would have been solved.

§ 4. BONNOT DE CONDILLAC

Etienne Bonnot de Condillac¹ follows, according to his own assertion,² Cantillon's ideas in his *Le Commerce et le Gouvernement*, written in 1776. On p. 297 he makes an estimation of the value of the quantity of money that a country needs, and thus he also treats indirectly the value problem of money. He writes there :

"Let us suppose that half our population lives in town, where we have seen that people spend more than they do in the villages, and where consequently more than half the produce of the ground will be consumed.

"Let us, to fix the ideas, estimate the produce of all the ground at two thousand ounces of silver. On this supposition, because the inhabitants of the towns consume more than half the products, they will need more than a thousand ounces of silver to buy all the things necessary for their subsistence. Let us suppose that they want twelve hundred; then, if this sum suffices them, it will be sufficient to drive the trade of the whole population. It will be passed on to the farmers, and return again to the land-owners, and as this circulation will only stop to be recommenced again, it will always be with the same quantity of money that the exchanges are made in the town and in the country. From this it might be conjectured that the quantity of money required

¹ See E. Daire, *Mélanges d'Economie politique I, Collection des principaux économistes*, Tome XIV. Paris, 1847.

² Cf. his footnote on p. 298.

for commerce depends chiefly on the quantity of what is consumed in the towns, or that this quantity of money is about equal to the value of the products that the towns consume."

Somewhat further on the same page Condillac makes an important reservation with regard to this estimation by introducing the rate of circulation into his reasoning :

" The quantity of money necessary for trade must also vary according to circumstances.

" Let us suppose that the payment of the rents, and of all things bought on credit, takes place once a year, and that, to settle these accounts, the debtors want a thousand ounces of silver ; a thousand ounces of silver are required for the circulation as far as these payments are concerned.

" But if the payments were made every six months, half the sum would suffice, because five hundred ounces paid twice are equivalent to a thousand paid once. It is seen that if the payments took place every three months, two hundred and fifty ounces would be sufficient."

After the discussion of Cantillon I believe that we need not enter any further into Condillac's considerations. Condillac's explanations seem by no means an improvement on those of Cantillon. Here, too, we see merely an estimation of the quantity of money needed for a country. And to this estimation there are again two essential objections. First, the inaccuracy, which leads Condillac himself to say on p. 299 :

" We must conclude that it is impossible to give any precise statement about the quantity of money which is or must be used in business."

But of much greater importance is the fact that in his reasoning the why—the logical explanation—is entirely absent. Even if Condillac had succeeded in giving an estimation, however accurate, this would not have explained the logical connection. Thus Condillac speaks, *e.g.*, of " commerce " as if this were an independent objective matter. But commerce itself experiences again the useful reaction of the use of money, and whilst the use of money is in a certain way dependent on trade, the volume of the trade again experiences the reaction of the use of money. For Condillac

also knew already that trade is promoted by the use of money. This means that on the first use of money, as a substitute for barter, trade could extend, which again made a greater supply of money desirable. Hence there is a certain interaction between trade and the use of money; and if from the volume of the trade at any given moment an estimation of the quantity of money needed for it were made, though it were extremely accurate, an economic and logical explanation would not have been given. For the volume of the trade itself is, with other factors, determined by the value of the supply of money. A valuation, even if it were as accurate as Condillac would wish to make, would have only a statistic significance, but would not be able to give a logical explanation from an economic point of view.

§ 5. DAVID HUME

David Hume, in the Essay "Of Money," in his *Essays, Moral, Political, and Literary*, more particularly set himself the task to refute the thesis that a great quantity of money would promote the prosperity of a nation. In the course of his reasoning, as might already be expected, he also dealt with the relative value problem of money, although only cursorily.

Hume's conception of the nature of money is expressed most clearly in the following passage (on p. 302): ¹

"It was a shrewd observation of Anarcharsis the Scythian, who had never seen money in his own country, that gold and silver seemed to him of no use to the Greeks but to assist them in numeration and arithmetic. It is indeed evident that money is nothing but the representation of labour and commodities, and serves only as a method of rating or estimating them."

In connection with this, his assertion on p. 299 is quite comprehensible:

"If we consider any one kingdom by itself, it is evident that the greater or less plenty of money is of no consequence; since the prices of commodities are always proportioned to the plenty of money, and a crown in Harry VII's time served the same purpose as a pound does at present."

¹ See the edition of 1777.

And further on p. 307 :

" It seems a maxim almost self-evident that the prices of everything depend on the proportion between commodities and money, and that any considerable alteration on either has the same effect, either of heightening or lowering the price. . . .

" It is also evident that the prices do not so much depend on the absolute quantity of commodities and that of money, which are in a nation, as on that of the commodities which come or may come to market and of the money which circulates."

If Hume intended to give a study of the value problem of money here, we must make the same remark with reference to this as we made with regard to Montanari's assertions. For as soon as we limit the significance of the quantity of money for its value to the money that circulates, the question has to be solved, What part of the money circulates?

When reading Hume's essay we see, however, that he has tried to show the fallacy of the theory according to which a greater supply of money would imply a greater wealth for a country.

On p. 306 he points out an apparent difficulty, where he considers the condition in different countries in which a small circulation of money is accompanied by less prosperity, *e.g.* :

" The Austrian dominions in the empire are in general well peopled and well cultivated, and are of great extent ; but have not a proportionable weight in the balance of Europe ; proceeding, as is commonly supposed, from the scarcity of money."

Hume has invalidated this argument in an ingenious way on p. 307 :

" To these difficulties I answer, that the effect here supposed to flow from scarcity of money really arises from the manners and customs of the people ; and that we mistake, as is too usual, a collateral effect for a cause."

It is therefore not the fact that little money circulates in the country which is the cause of the decrease in prosperity, but the fact that the population is not accustomed to avail itself of this useful expedient in a sufficient degree.

Though Hume does not explicitly say so, we cannot but suppose that he has seen that the employment of money is

useful to the population, as also appears already at the beginning of the Essay, where he calls it :

“ the instrument which men have agreed upon to facilitate the exchange of one commodity for another.”

For the value theory of money, however, we find no new material in Hume : he treats exclusively the influence of the quantity of circulating money on the prices of commodities ; and also on this point Hume does not give any details that we have not yet met with in other writers.

CHAPTER IV

ADAM SMITH

IN Chapter IV of the *Wealth of Nations*,¹ entitled "Of the Origin and Use of Money," Adam Smith gives an interesting and, as is characteristic of him, pellucid exposition of the origin and purpose of the use of money. To show the great importance of Adam Smith in general, and of this exposition in particular, I will quote this passage in full :

"But when the division of labour first began to take place, this power of exchanging must frequently have been very much clogged and embarrassed in its operations. One man, we shall suppose, has more of a certain commodity than he himself has occasion for, while another has less. The former consequently would be glad to dispose of, and the latter to purchase a part of this superfluity. But if this latter should chance to have nothing that the former stands in need of, no exchange can be made between them. The butcher has more meat in his shop than he himself can consume, and the brewer and the baker would each of them be willing to purchase a part of it. But they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for. No exchange can, in this case, be made between them. He cannot be their merchant, nor they his customers, and they are all of them thus mutually less serviceable to one another. In order to avoid the inconveniency of such situations, every prudent man in every period of society, after the first establishment of the division of labour, must mutually have endeavoured to manage his affairs in such a manner, as to have at all times by him, besides the peculiar produce of his own industry, a certain quantity of some one commodity or other, such as he imagined few people would be likely to refuse in exchange for the product of their industry."

Here Adam Smith gives a clear exposition of the purpose for which we keep money and of the use money has for us.

¹ Cannan's (4th) edition, pp. 24, 25.

When he has set forth why money is useful to us, and for what purpose we keep it, he arrives at the conclusion, in the last sentence, that to attain our end we require to have at all times "a certain quantity of the good that can serve as medium of exchange."

Adam Smith has not inquired, further, how this certain quantity is determined. Had he done so, he might, in this way, have arrived at the solution of the problem of the value of money, as it is seen at present. He could then have found the rate at which we exchange commodities against money at a given moment, and why we do so. Adam Smith did not yet know the problem in this form, hence he did not look for the solution in this direction. He occupied himself only with the question how and why the rate of exchange between money and goods varies. Accordingly, he did not examine the amount of this certain quantity, and left the "certain" entirely "uncertain."

But in spite of this, the proportion of the quantity of money circulating in a country to the goods did, indeed, engage his thoughts, but, as had also been the case with several writers before him, the end he had in view was not to arrive, through the determination of the demand for money, at the value in exchange of money. The interest of Adam Smith and these other writers was directly concerned with the question in what proportion the quantity of money stood to the goods. They confined themselves to valuations, did not try to find further explanations, and gave no thought to the relation that can be found between the demand for money and the value in exchange of money.

On this point Adam Smith wrote : ¹

"What is the proportion which the circulating money of any country bears to the whole value of the annual produce circulated by means of it, it is, perhaps, impossible to determine. It has been computed by different authors at a fifth, at a tenth, at a twentieth, and at a thirtieth part of that value."

What, however, does occupy Adam Smith's thoughts is the problem as it was seen before—viz. the causes of the variations in the value of money.

¹ Cannan's (4th) edition, p. 279.

In this connection Adam Smith deals with the question of the debasement of money : ¹

“ But the nominal sum which constitutes the market-price of every commodity is necessarily regulated not so much by the quantity of silver which, according to the standard, ought to be contained in it, as by that which, it is found by experience, actually is contained in it. This nominal sum, therefore, is necessarily higher when the coin is much debased by clipping and wearing than when near to its standard value.”

The consequences of debasement of the coins for the prices Adam Smith considers to be directly proportional to the degree of the debasement : ²

“ Any rise in the money price of goods which proceeded altogether from the degradation of the value of silver would affect all sorts of goods equally and raise their price universally a third, or a fourth, or a fifth part higher, according as silver happened to lose a third, or a fourth, or a fifth part of its former value.”

In a footnote Prof. Cannan says regarding this statement :

“ The arithmetic is slightly at fault. It should be, happened to lose a fourth, a fifth, or a sixth part of its former value.”

The influences of variations in the demand and supply of precious metals on the prices are discussed by Adam Smith as follows : ³

“ The quantity of the precious metals may increase in any country from two different causes : either, first, from the increased abundance of the mines which supply it ; or, secondly, from the increased wealth of the people, from the increased produce of their annual labour. The first of these causes is no doubt necessarily connected with the diminution of the value of the precious metals ; but the second is not.

“ When more abundant mines are discovered, a greater quantity of the precious metals is brought to market, and the quantity of the necessities and conveniences of life for which they must be exchanged being the same as before, equal quantities of the metals must be exchanged for smaller quantities of commodities. So far, therefore, as the increase of the quantity of the precious metals in any country arises from the increased abundance of the mines, it is necessarily connected with some diminution of their value.

¹ Cannan's (4th) edition, p. 194. ² *Ibid.*, p. 239. ³ *Ibid.*, p. 188.

"When, on the contrary, the wealth of any country increases, when the annual produce of its labour becomes gradually greater and greater, *a greater quantity of coin becomes necessary in order to circulate a greater quantity of commodities.*"¹

It is interesting to note that Adam Smith seems to see that the influence of the corruption of money is different from the influence of greater abundance of the mines. While in the first case he regards a proportional rise of the prices as the consequence of the debasement of money, when speaking of the greater abundance of the mines he states that "it is necessarily connected with *some* diminution of the value."

Noteworthy also is his treatment of the second point. When the wealth of a nation increases, he expects an increased supply of precious metal without modification of the value. That in such a case the value of the precious metal will not fall, he shows, but he does not take into account that there remains a possibility of a rise in the value, in spite of the increased supply of precious metal, since the stock of precious metal abroad is not inexhaustible, and it is not to be assumed that an increased demand abroad could be covered at an unchanged rate of exchange.

The phrase I have put in italics reveals Adam Smith's views on the quantity of money needed by a country—at least if from his statement that a greater quantity of coin becomes necessary in order to circulate a greater quantity of commodities, it may be concluded that he also assumes that "a certain (fixed) quantity of coin is necessary to circulate a certain quantity of commodities."

At first sight it seems that these two assertions present so close a resemblance that one would be quite justified in applying this modification. I believe that Adam Smith would not have had any objection to this modification. For it appears from the passage quoted from p. 279 that although he does not wish to hazard any estimations, he does assume a definite, though unknown, proportion between the quantity of money and "the whole value of the annual produce." This assumption has, indeed, been maintained in the

¹ The italics are mine.

literature down to the present day. We find the passage from p. 279 expressed by Prof. Marshall in the same sense.

Now it appears to me that Adam Smith's assertion that "a greater quantity of coin becomes necessary in order to circulate a greater quantity of commodities," is irrefragable—*i.e.* if two conditions are fulfilled: *viz.*, first, that in the country itself all other circumstances remain the same; secondly, that abroad wealth does not increase in the same ratio.

To start with the second point. We should have to assume that if wealth did increase abroad in the same ratio, the demand for money would increase everywhere, and the same quantity of money (all other circumstances remaining the same) would serve everywhere to distribute the greater annual produce.

The first-mentioned condition is, however, much more important from a theoretical point of view. For all other circumstances do not remain the same, and that which changes continually forms, besides, part of the factors that determine the value of money. In my discussion of later writers, who have more fully worked out the thesis that "the circulating money" stands in a definite proportion, which cannot be determined exactly, to the annual produce circulated by means of it, and who have taken it more or less as a basis for their value theory of money, this question will be treated at length. It may, however, be pointed out here, in passing, that this proportion between the quantity of money and the annual produce distributed by the money is not only continually varying, but that this ever-varying proportion itself is determined by the very factors that govern the value of money.¹ Consequently it is unjustifiable to make this assumed proportion between a quantity of money and a quantity of products the starting-point for the determination and explanation of the value of money, and likewise for the determination and explanation of the variations in the value of money.

The thought of this proportion is found expressed by Adam Smith several times, *inter alia*, on p. 336:

¹ This thesis will be further elaborated later on.

“ Any increase in the quantity of silver while that of the commodities circulated by means of it remained the same could have no other effect than to diminish the value of that metal. The nominal value of all sorts of goods would be greater, but their real value would be precisely the same as before.”

Expressed thus, there is again no reason to object to a mental reservation here of : all other circumstances remaining equal. Provided, however, that it be not concluded from this that, what with this restriction holds good for variations of the value of money could also be taken as basis for the solution of the problem of the value of money at any arbitrarily fixed moment.

In this direction Adam Smith proceeds again on p. 407 :

“ The value of goods annually bought and sold in any country requires *a certain quantity* of money to circulate and distribute them to their proper consumers, and can give employment to no more.” ¹

Here again a definite quantity of money corresponding to a definite quantity of value of commodities is clearly brought to the fore, with this modification to passages quoted previously—that the author does not here speak of an “ annual produce,” but of “ goods annually bought and sold.” Accordingly, stress is laid here on what is in commerce rather than on what is produced.

For the rest, the substance of this passage is, of course, perfectly correct. A definite proportion at a definite moment being once given, there is no room for more money at the same rate of exchange—provided it be not concluded from this that this proportion is not continually varying, so that the same quantity of goods could not be turned over in one year at the same rate of exchange as in another year, though the quantity of money in one year should not happen to be the same as in another.

On p. 274 there is another sentence which is interesting in connection with what the money theory of another category of later writers has produced. There it is stated :

“ A guinea may be considered as a bill for a certain quantity of necessaries and conveniences upon all the tradesmen in the neighbourhood.”

¹ The italics are mine.

The idea of considering money as a kind of claim for "necessaries and conveniences" served later on as the foundation of the "Anrecht" theory, and it is interesting to note that this early formulation already contains the same difficulty as the "Anrecht" theory itself. That Adam Smith did not enter more deeply into this matter is owing to the fact that he did not occupy himself with the problem of the value of money in its present form. Had he done so, without doubt he would not have spoken so lightly of "a *certain* quantity." For it follows from the value problem, as we see it, that we try to determine and explain *what* is the quantity of commodities that a guinea buys. Without an accurate determination and explanation, this quantity is entirely "uncertain," and by speaking of "a *certain* quantity" we should start from the very thing that we were endeavouring to find.

With regard to Adam Smith's assertion, we may, it seems to me, assume that it was merely meant as a concession to our imagination. In this sense his statement has also been adopted by later writers who can by no means be included among the adherents of the "Anrecht" theory. Only the advocates of the "Anrecht" theory have founded their whole theory on the conception that money is a claim to a certain quantity of commodities and services.

Adam Smith undoubtedly saw money in a different way. The first passage on the "origin and use of money" quoted from him is sufficient evidence that he regards money as a medium that renders useful services in exchange. Accordingly, he says on p. 275 that :

" money, the great wheel of circulation, the great instrument of commerce, like all other instruments of trade, makes a part, and a very valuable part, of the capital. . . . "

In these words the essential character of money is expressed in the clearest way.

CHAPTER V

THE NINETEENTH CENTURY

§ 1. RICARDO

THE very first sentence of *The High Price of Bullion*, by David Ricardo, published in 1809, calls for a closer discussion. In the edition of McCulloch this passage is found on p. 263 :

“The precious metals employed for circulating the commodities of the world, previously to the establishment of banks, have been supposed by the most approved writers on political economy to have been divided into certain proportions among the different civilised nations of the earth, according to the state of their commerce and wealth, and therefore according to the number and frequency of the payments which they had to perform.”

It would have to be inferred from the last part of this sentence that if in one country the number and frequency of the payments are greater than in another, the quantity of money required must also always be greater. This thesis starts from the supposition that the real function of money lies in paying, and in this it is overlooked, in my opinion, that money is frequently wanted not for payments, but to be kept on hand. Especially in times of insecurity and economic depression, commodities will be offered in exchange for money, in order to transmute the precarious goods which are liable to decrease in value to money, which seems to be subject to less risk, and which is seen to increase in value in times of economic depression. More money is then demanded, which is kept in reserve; hence more money by no means corresponds to a greater number and frequency of payments.

This does not alter the fact that, on an average, “the

state of commerce and wealth " will quite certainly exercise an influence on the demand for money; but the closer limitation to the " number and frequency of the payments " will be less readily indorsed.

On p. 284 we find Ricardo's standpoint set forth regarding the value of the quantity of money circulating in a country. Following Hume, he says there :

" The value of the circulating medium of every country bears some proportion to the value of the commodities which it circulates. In some countries this proportion is much greater than in others, and varies, on some occasions, in the same country. It depends upon the rapidity of circulation, upon the degree of confidence and credit existing between traders, and, above all, on the judicious operations of banking. In England so many means of economising the use of circulating medium have been adopted, that its value, compared with the value of the commodities which it circulates, is probably (during a period of confidence) reduced to as small a proportion as is practicable. What that proportion may be has been variously estimated."

Ricardo here gives three conditions on which the proportion of the value of the quantity of money and of the quantity of commodities depends. Unfortunately, he has not further specified how and to what extent this proportion depends on these different conditions. Possibly he did not consider this necessary or desirable, in view of the purpose laid down in his work; but it is also possible that he thought this further elaboration quite unpracticable. This must be inferred from the last sentence. For if one mentions three determining factors, and if it is feasible to find and explain the required proportion from these factors, there is no need to limit oneself in the end to the insignificant statement that " that proportion has been variously estimated."

Yet in the passage quoted we find a point of view expressed that takes us a great deal further than the initial sentence, which we discussed above. For there only the " number and frequency of the payments " were mentioned, and we had to conclude therefrom that unfavourable expectations about business conditions may require a greater quantity of value in money in a country with a smaller " number and frequency of the payments."

In the passage last quoted the "rapidity of circulation" is mentioned, but also the "degree of confidence and credit." A further study of these factors would have shown that, considered as explanatory material, they are of an entirely different nature. For the first factor—"the rapidity of circulation"—is itself again dependent on the second—"the degree of confidence and credit."

As has been stated above, Ricardo did not inquire any further into this question, whereas later economists *have* done so. Hence there would be no advantage in entering more fully into this point here. It will therefore be reserved for discussion when dealing with those writers who have set forth at length the standpoint already stated here in principle.

§ 2. THE BULLION REPORT

The *Report from the Select Committee on the High Price of Bullion* is a document of too great importance in the department of the money problem to be passed over in silence.

In this report it was, indeed, by no means intended to give an exposition of the factors governing the exchange value of money. The object in view was to show that the high price of gold was to be attributed to the decrease in the value of the inconvertible paper money.

In this discussion the value problem of money could not be disregarded, and if only the relative value problem is considered, it must be admitted that in some passages Adam Smith's method of treating the problem has been considerably improved upon.

The most interesting passage is perhaps that in which an examination is made of the quantity of paper currency which can circulate in a country without there being such an abundance that a depreciation of the value of money will ensue.

The relative nature of this examination appears from this: that in the first place abundance is spoken of, and, in the second place, as criterion that is to evince this abundance, the "State of Exchange and the Price of Gold Bullion" are indicated.

Also, the whole purpose of the interesting passage to which I refer is of a relative nature : it is there stated that the same amount of paper currency may under certain circumstances be too small, under other circumstances too great. Further, that the required amount will vary with the extent of trade, with the " quickness of circulation and the number of exchanges performed in a given time," with " the state of public credit " and with " the skill which the great money-dealers possess in managing and economising the use of the circulating medium."

The passage is found in Cannan's edition of the Bullion Report, p. 57, under the title of " The Paper Pound of 1797-1821 " :

" But your Committee must not omit to state one very important principle : that the mere numerical return of the amount of Banknotes out in circulation cannot be considered as at all deciding the question whether such paper is, or is not, excessive. It is necessary to have recourse to other tests. The same amount of paper may at one time be less than enough, and at another time more. The quantity of currency required will vary in some degree with the extent of trade; and the increase of our trade, which has taken place since the suspension, must have occasioned some increase in the quantity of our currency. But the quantity of currency bears no fixed proportion to the quantity of commodities; and any inferences proceeding upon such a supposition would be entirely erroneous. The effective currency of the country depends upon the quickness of circulation, and the number of exchanges performed in a given time, as well as upon its numerical amount; and all the circumstances which have a tendency to quicken or to retard the rate of circulation render the same amount of currency more or less adequate to the wants of trade. A much smaller amount is required in a high state of public credit than when alarms make individuals call in their advances and provide against accidents by hoarding; and in a period of commercial security and private confidence, than when mutual distrust discourages pecuniary arrangements for any distant time. But, above all, the same amount of currency will be more or less adequate in proportion to the skill which the great money-dealers possess in managing and economising the use of the circulating medium."

The compilers of the Bullion Report, however, had set themselves only the task to show that the quantity of paper money was greater than the need, and in connection with

this they instanced a number of circumstances which could modify this need. Considered thus, the Bullion Report gives, indeed, the most typical treatment of the relative problem; but in consequence anything that could establish a connection between the determining factors and the demand for money, or the value in exchange to be determined in an absolute sense, is entirely lacking.

When, *e.g.*, the Bullion Report says that the quantity of money required will vary with the extent of trade, one must ask oneself the question, for the absolute problem as we now know it: What would be the demand for money in a given condition of trade? When the Bullion Report says that "the effective currency of the country depends upon the quickness of circulation," one asks in our times what, with a given quickness of circulation at a certain moment and a given numerical amount, is the effective currency? In fact, in recent times this relation has been accurately determined in the money theories of Prof. Kemmerer, Prof. Irving Fisher, and many others. Accordingly, we shall later on discuss these theories at length. In the Bullion Report we find only the relative proportions indicated—viz. that "all the circumstances which have a tendency to quicken or to retard the rate of circulation render the same amount of currency more or less adequate to the wants of trade." The above-mentioned economists, however, raise the question, What "amount of currency would be adequate to the wants of trade" at a definite rate "of circulation" and at a definite value in exchange of money?

At the bottom of p. 58 we find mentioned the opinion of the compilers of the Bullion Report regarding the criterion that is to decide whether paper money is abundant or not.

"All these circumstances co-operated to render a smaller augmentation of Bank of England paper necessary to supply the demands of our increased trade than might otherwise have been required; and shew how impossible it is, from the numerical amount alone of that paper, to pronounce whether it is excessive or not; a more sure criterion must be resorted to, and such a criterion Your Committee have already shown, is only to be found in the state of the Exchanges, and the price of Gold Bullion."

Even this criterion has again a relative significance. We should now no longer concur with the statement that the adequate quantity of paper money circulates if only the rate of exchange and the price of gold remain unmodified, because the possibility still remains that in other countries the money and the gold may have undergone a variation in value, so that we should compare with a modified standard.

Now it cannot be denied that every standard of value in exchange must remain relative, since the conception "value in exchange" itself expresses a relation between two or more goods. But, nevertheless, the science of economics has succeeded in reducing the value in exchange of goods in general to, and in explaining it from, the elementary factors, through which we also get an insight into the causes of the variations in the value in exchange of goods in general.

We must set ourselves the same task with regard to the value in exchange of money. If, in accordance with the Bullion Report, it is assumed that "the quantity of currency required will vary in some degree with the extent of trade," we must ask what is the essential factor in the state of trade, and what must be the quantity of this factor to arrive at the quantity of money which is required at a definite value in exchange of the money-unit.

The value problem of money did not reach this position until much later, and a great many interesting theories have been formulated for the purpose of finding the relation between the value in exchange and the factors governing this value.

§ 3. JOHN STUART MILL

In his *Principles of Political Economy*, John Stuart Mill gives us an interesting passage on pp. 494 and 495 :

"If each piece of money changes hands on an average ten times while goods are sold to the value of a million sterling, it is evident that the money required to circulate those goods is £100,000. And consequently, if the money in circulation is £100,000, and each piece changes hands by the purchase of goods ten times in a month, the sales of goods for money which take place every month must amount on the average to £1,000,000."

In these two sentences Mill has tried to give a solution of two different problems. The problem of the first sentence is, generally speaking, the earlier one. In former times economists occupied themselves more particularly with the question how much money a country needed for its trade. Mill solves this by a simple mathematical formula, when he starts from the value in money of the goods in commerce and the velocity of circulation of the money.

The same formula can then serve in the following sentence to find the value in money of the goods when the nominal quantity of money and the velocity of circulation are given. This solution of the problem of the exchange proportion of money and goods was afterwards scientifically worked out by Irving Fisher, and will be discussed at greater length when dealing with this writer.

There is another interesting question that engaged Mill's attention and occupied the thoughts of many before and after him, *i.e.* the maxim that the nominal quantity of money that circulates is of no importance, except in so far that if, instead of the existing nominal quantity, there were a greater or smaller quantity, the level of prices would proportionately be higher or lower. Mill says regarding this (on p. 490) :

"The demand for money, again, consists of all the goods offered for sale."

And on p. 493 :

"So that the value of money, other things being the same, varies inversely as its quantity, every increase of quantity lowering the value and every diminution raising it, in a ratio exactly equivalent.

"This, it must be observed, is a property peculiar to money. We did not find it to be true of commodities generally, that every diminution of supply raised the value exactly in proportion to the deficiency, or that every increase lowered it in the precise ratio of the excess. Some things are usually affected in a greater ratio than that of the excess or deficiency, others usually in a less : because, in ordinary cases of demand, the desire being for the thing itself, may be stronger or weaker ; and the amount of what people are willing to expend on it, being in any case a limited quantity, may be affected in very unequal degrees by difficulty

or facility of attainment. But in the case of money, which is desired as the means of universal purchase, the demand consists of everything which people have to sell; and the only limit to what they are willing to give is the limit set by their having nothing more to offer."

From the point of view of economic history, the first half of the last sentence seems very remarkable to me. For in this half sentence two thoughts are placed side by side, which have afterwards developed into two theories—they present, indeed, some affinity, but in my opinion they are essentially entirely different. One of these thoughts is expressed in the words "the demand consists of everything which people have to sell," which, also in connection with the sentence quoted on p. 490, seems best to represent Mill's opinion. I am afraid, however, that here a very special meaning is assigned to the conception of "demand," which is never applied to any other goods. When two commodities are exchanged, it can never be said that the demand for one commodity consists in the offer of the other. The demand for one commodity will then, in the first place, be explained and determined by the utility that people believe they can derive from it, which renders them willing to make the offer of the other commodity that is to be exchanged for it. Mill in this statement sees no demand for money on account of the utility that can be derived from it: he only sees the limitation by the offer of the commodities to be given in exchange. Hence the somewhat singular assertion on p. 490, that "the demand for money consists of all the goods offered for sale."

From this conception the mechanic quantity theories have developed, which will be discussed later.

In contradiction to this seems to me the other part of the same half-sentence: "Money, which is desired as the means of universal purchase." Here an argument is adduced for the demand for money which is related to a property of money itself. Here the demand for money is not the offer of commodities, but money is demanded because a "means of universal purchase" is desired. One gets here the impression that this passage has slipped into Mill's reasoning

more or less incidentally—at least nothing of the kind is found in his other discussion.

Nevertheless, its tenor is of importance. It became later the basis of the scientifically elaborated cash-balance theories. In how far these theories can furnish the solution of the value problem depends, then, only on whether they succeed in determining the quantity of the cash balance in question.

Whether it is explicitly stated or not, the cash-balance theories are, however, founded on the thought that as cash balance, not a nominal quantity of money units is required, but a quantity of value in exchange in money. Accordingly, these theories can show, in an easy way, the only nominal significance of the nominal quantity of money.

§ 4. MACLEOD

In *The Elements of Political Economy*, H. D. MacLeod treats only the problem of the variations of prices, not that of the value of money at a definite moment. But to a discussion of the influence of an increase in the quantity of money on the prices of commodities he adds a consideration on the influence on the rate of interest. He deals with the latter point in connection with a criticism by Adam Smith of those who, with John Law, held the view¹ that from abundance of money a permanent lowering of the rate of interest would result.

On pp. 232 and 233 MacLeod then sets forth how a large supply of gold brings about only a temporary decrease in the rate of interest.

“An example of the truth of what we say occurred in the year 1844, when from various circumstances an unusual quantity of capital was accumulated in the hands of bankers, and the rate of discount fell to 2 per cent., but no increase in the prices of goods generally took place; that is, there was a great diminution in the value of money with respect to debts, but no diminution in its value with respect to commodities.

“But however enterprising the country may be, there is a limit to its enterprise, and as soon as that limit is reached, an increased quantity of money can lead to no fresh enterprise; the

¹ See p. 20 of this book.

consequence of which is very manifest. The quantity of money being continually added, generates no fresh enterprise, as it is called, and having no fresh work to do, it merely requires a greater quantity of money to do the same work that a less quantity did before. That is to say, a diminution in the value of money with respect to commodities takes place."

MacLeod has raised a very important question with his inquiry into the influence of an increase in the quantity of money on the rate of interest, and as considerable prominence will have to be given to the interest of money also in our later consideration of the value problem of money, MacLeod's ideas are of great importance also for us.

Not that, in my opinion, MacLeod has succeeded in establishing the connection between the rate of interest and the value of money; nor is his exposition of the course of affairs convincing.

MacLeod says that the additional quantity of gold "under the artificial system of the currency produced by modern banking invariably finds its way into banks in the first instance." These lower their debit interest tariffs, and "new operations of all kinds are commenced." Now it is curious that MacLeod thinks that on the one hand these new operations would not have the tendency to raise the rate of interest again, and that, on the other, the level of prices of commodities would not be raised.

Equally strange is MacLeod's view, in the passage quoted above, that the rate of interest would adapt itself when "no fresh enterprise is generated," and that in this case the prices of commodities would rise.

It may be that a not sufficiently sharp distinction between money and capital has influenced MacLeod's views. I believe that at present we should see the course of affairs thus: that an increased supply of gold would cause the banks to offer credits, and that this would depress the rate of interest, unless new operations should absorb the offers of credit. Until new operations are commenced, the prices of goods will be little affected. If, however, the credit is absorbed for new operations, these new operations will entail a demand for goods to higher prices. Both the rate of interest and the level of prices will, in this case, rise.

However, it seems to me that even this modern conception of the movements of prices with credit as an intermediate link cannot yet give a definite solution of the value problem of money; for, in the first place, the value theory of money must also be able to account for variations in the price level by modifications in the quantity of money, if we imagine a society *with* money circulation, but without credit system; and, in the second place, only the problem of the variation in the value of money would have been dealt with, not that of the value of money at a definite moment.

§ 5. JEVONS

In the second half of the last century the problem of the value of money at times receded more or less into the background. Several of the most prominent writers did not even so much as mention the problem. W. Stanley Jevons does not devote a word to it in his *Money and the Mechanism of Exchange*. And even the allied problem—the quantity of money that a country needs—is only very cursorily treated. Here Jevons gives evidence of his sceptical attitude regarding the possibility of solving this problem in a way that is at all satisfactory.

On p. 335 he says :

“ We shall find that to ascertain how much money is needed by a nation, is a problem involving many unknown quantities, so that a sure solution can never be obtained.”

It appears, besides, that Jevons, when speaking of this problem, makes no attempt to ascertain the absolute quantity of the exchange value of the money that a nation needs. He only considers a few factors that can augment or diminish the quantity needed.

Thus he continues on p. 335 :

“ To decide how much money is needed by a nation, we must, firstly, determine the quantity of work which money has to do. This will be proportional, *ceteris paribus*, to the number of the population; twice the number of people, if equally active in trade and performing it in the same way, will clearly want twice as much money. It will be proportional, again, to the activity of industry, and to the complexity of its organisation. The

more goods are bought and sold, and the more often they pass from hand to hand, the more currency will be needed to move them. It will be proportional, again, to the prices of goods; and if gold falls in value, and prices are raised, more money will be needed to pay the debts increased in nominal amount."

It appears from this that Jevons only tried to solve the relative problem: he does not endeavour to ascertain how great the quantity of money needed must be; but he indicates three factors which, if they are modified, cause the required quantity of money also to be modified proportionately.

The first of these three factors is the population, a factor which certainly presents the fewest difficulties for the relative problem. The second factor—the quantity of goods in commerce—entails already much greater difficulties. For there, more or less axiomatically, a side is taken in the difficult question, whether money performs its real function when a payment is made or whether the real significance lies in the keeping of a cash balance for later purchases. We shall find the first alternative adopted in the later mechanic money theories, the second in the cash-balance theories. But, with regard to this, even the mechanic money theories have introduced another factor, which has modified the significance of the goods in commerce. They have at least taught that it is not sufficient simply to accept the thesis that "the more goods are bought and sold, and the more often they pass from hand to hand, the more currency will be needed to move them." This thesis is expressed more completely in the mechanic money theories by the introduction of the velocity of circulation of money, in consequence of which a greater number of transactions do not necessarily require greater quantities of money.¹

However, Jevons also deals with this rapidity of circulation, which he calls "efficiency of the currency." From what he says on this point (on p. 336) it must, however, be concluded that he holds the opinion that this "efficiency" for every nation is to be considered as a more or less objectively

¹ Probably Jevons will have intended to apply the comprehensive expression "*ceteris paribus*" also to this sentence, and in this formulation it then contains at the same time the condition that the rate of circulation also remains the same.

given constant, which is determined by the temperament and the character of the population and by the nature of their money system.

The third factor that Jevons mentions as a cause of a greater or smaller need of money is the price of commodities. That this factor could thus be introduced into his reasoning is explained by the fact that Jevons entirely ignored the problem of the level of prices. This enabled him to take this factor into consideration as an independent one, whereas if he had also wanted to explain the price level, he could certainly not have used the price level itself as an independent factor in the closely allied problem of the quantity of money needed in a country. The two problems present too close an affinity to allow the unknown quantity of one problem to be inserted as a known quantity into the other.

§ 6. PIERSON

N. G. Pierson says in his *Leerboek der Staathuishoudkunde*, Part I, p. 73 : ¹

“ There is therefore not only a great difference between the meaning of the words Value and Cost price : one word expresses the very opposite of the other. Yet it is a well-known truth that the proportion of value which the things bear to each other is in most cases more or less in harmony with their cost of production proportion. How is this to be explained ?

“ The reason is that everybody's labour directs itself preferably to those things through the production of which he can acquire the greatest profit. Value is, so to speak, the regulator of labour ; it determines the direction in which people labour, the objects on which work is spent. Speaking generally, every work is continued until it has become as remunerative as any other work.”

And on p. 74 :

“ The relation between value and cost price, or value and cost of production, is often represented in a way that may give rise to misunderstanding. The value of things, it was said, *depends* on their cost of production, or is *determined* by it. Such expressions, though quite intelligible to a practised reader, are dangerous. Things have no value because they cost work, but work is spent

¹ 3rd edition.

on them because they have value; the value of a quantity of commodities is not determined by the difficulty of producing them, but by the disadvantages which the lack of this quantity would involve, according to general estimation. The representation given above seems more accurate to us. Let us therefore not say the value of things *depends* on their cost price, but rather, the mutual value relation between goods which can be obtained by labour must ultimately coincide with the relation between their cost prices."

It is absolutely necessary to precede a discussion of Pierson's treatment of the value problem of money by his exposition of the relation between the ideas value and cost price, as otherwise it might be wrongly supposed that Pierson had solved the value problem by means of a kind of cost-of-production theory. It appears convincingly from what precedes that this can by no means be expected from this author.

On the value of money, however, he makes some statements which, without knowledge of his views on the significance of value and cost price, might easily lead to this supposition.

On p. 403 he says :

"Let us begin by examining how the value in exchange of money is determined in a country that produces the money metal. It is not difficult to answer this question. The value of money is, in such a country, governed by the same causes that determine the value of all other things. Money is there an ordinary product of home industry. Gold and silver are used for all kinds of purposes; they are also used as medium of exchange. If those who produce these metals do not receive a normal remuneration, they stop their work, and use their capital for other purposes, which naturally leads to diminution of supply, to scarcity, higher value of money, hence to lower prices."

If we were not warned by Pierson's remarks on the ideas of value and cost price, we should have to conclude from the above that he reduces the value of money to the difficulty of attainment. But fortunately we know from the passage quoted from p. 74 that it was also his opinion that "things have no value because they require labour, but that labour is spent on them because they have value." Accordingly, we must interpret his consideration of that which determines

the value exchange of money in a country that produces its money metal in the way that is represented in the last sentence quoted from p. 74—viz. that the mutual proportion of value between money metal and other goods that can be multiplied by labour must ultimately coincide with the proportion between their cost prices.

This coincidence gives, indeed, a determination of the value of money, but not a causal determination. If Pierson had wished to give an explanatory determination of the value of money in its causes, he would, after the determination on the strength of the coincidence with the work required for the production, have endeavoured to ascertain, in connection with his assertion on p. 74, to what cause this value is to be ascribed for which people are willing to spend labour. And he would also have inquired into the disadvantages ensuing from the absence of the quantity for which the work of production was spent.

He who wishes to explain and determine the value of money in its causes must ascertain what positive use money is to us that it induces us to spend work in producing it.

Instead, therefore, of entertaining the idea that Prof. Pierson has given a kind of cost-of-production theory of money, we must place him in the same category as writers like Jevons, who have not stated the real value problem, as we are endeavouring to study it here.

§ 7. MENDER

In his article "Geld" in the third edition of the *Handwörterbuch der Staatswissenschaften*, Prof. Dr. C. Menger has given very valuable considerations on the functions of money, particularly valuable with regard to the function of money as a medium of exchange.

Menger points out that the difficulties attending barter have led to the use of some current good as a medium of exchange.¹ These difficulties arose owing to the fact that many goods formed a less current object for barter than others, so that A had goods to offer in exchange and wished

¹ P. 556 *et seq.*

to receive goods in exchange from B, but B did not wish to possess the goods A had to offer. This obliged A first to exchange his goods with a third person for goods that B desired to have—if at least this third person wished to obtain the goods of A—so that no fourth or fifth or further transactions were required to put A ultimately in possession of the goods desired by him in exchange for his own goods.

Menger then states how the drawbacks attached to this have led to the use of a more current article as medium in exchange. Now A has only to find somebody who wishes to acquire his commodities through exchange, and who is in possession of the current article. With this current article he may then expect to be able to obtain the goods of B. Taught by experience, A will even, as a rule, immediately exchange the fruits of his labour for the current article, so that as soon as he shall wish to possess other goods he will easily be able to obtain them by exchange.

This gives rise to a certain demand for this intermediate good, this medium of exchange, hence a demand for it to be kept in reserve as cash.

Strictly speaking, Menger has not treated the problem of the value of money directly, but he *has* given indications about the extent of the demand for money, which is, after all, a problem closely akin to the value problem.

But, unfortunately, he gives only relative considerations on this subject. So he says on p. 606 :

“ The quantity of money which an individual must keep at his disposal as medium of exchange to be sufficient for the requirements of his business and his other expenses under normal conditions, and to enable him to carry on his business even under abnormal circumstances, depends first of all on the nature and the extent of what he has to administer : his business and his personal expenses.”

So far as I can see, however, Menger has not determined here the quantity of the demand for money of every person, but only the relation of the quantity of the demand for money of the different persons *inter se*. If the affairs A has to manage are more extensive than those of B, A's demand for money will also be greater than that of B. But what A's

demand for money will be in proportion to his demand for other goods Menger's explanations do not show.

Nor do we attain our end by considering his further explanations on the total demand for money of a country, because he starts from the demand for money of the different individual members of society. For since, in my opinion, he has not been able to determine the demand for money of the members separately, he cannot define the total derived from it.

On p. 608 he writes :

" A theory of the demand for money of a country corresponding to the extent of its trade can only be attained through an investigation that is based on the demand for money of the various individuals that constitute a nation, taking into account the functions of the Institutions which tend to economise on the use of money."

It seems to me that in this passage Menger gives a perfectly true exposition, and that really the total demand for money of the nation must be regarded as being composed of that of the separate members. But the link that is missing in his reasoning is the proportion between the demand for money and that for other goods. Menger has only found the relation of the demand for money of one to the demand for money of the other, and not the relation of the demand for money to the demand for commodities of one and the same individual. For this reason his theory will always remain inadequate to give a decision regarding the conditions on which people are willing to exchange money for commodities or commodities for money.

The problem of the exchange value of money cannot be solved in this way.

PART II

MODERN WRITERS

CHAPTER VI

THE MECHANIC MONEY THEORIES

§ I. IRVING FISHER

IN his book *The Purchasing Power of Money*, Prof. Irving Fisher has tried to solve the problem of the level of the prices, or in other words, of the value in exchange of money, by drawing up an equation.

Besides the price level P there occur five magnitudes in this equation. In this M is the quantity of money in circulation, V the rate of circulation of money (or the average number of times that the money is exchanged for commodities in a year), M^1 represents the total amount of the deposits on call, V^1 denotes the rate of velocity of this deposit currency and T is the quantity of goods that is exchanged for money in the same time.

The equation drawn up by Fisher runs then :

$$MV + M^1V^1 = PT.$$

By means of this equation the quantity theory is distinctly and exactly formulated. It appears that P can only change when one or more of the other factors are modified—in other words with the other factors also P has been determined.

Prof. Fisher's theory has led to a great deal of controversy, meeting with much approval in some quarters, but also with much opposition. Part of this criticism has been easily refuted by Prof. Fisher. He successfully opposes¹ his

¹ P. 296 *et seq.*

adversaries who advocate the opinion that price level and quantity of money are not always in inverse ratio to each other, but that other factors also can be modified. That Prof. Fisher could easily invalidate this criticism is at once evident when his equation is studied. For this contains other factors besides quantity of money and price level, and in so far as a modification in the price level takes place which does not vary inversely as the quantity of money, we shall have to find this in the other factors.

A more careful refutation was required to the critics who thought that Prof. Fisher had indeed drawn up an equation of exchange, but that he had not succeeded in proving that this had *causally* explained the price level from the other factors.

In answer to these critics Prof. Fisher writes on p. 298 :

“ As previously remarked, to establish the equation of exchange is not completely to establish the quantity theory thereof of money, for the equation does not reveal which factors are causes and which effects. But this question has been answered in Chapter VIII.”

And in Chapter VIII, p. 151 :

“ It is proposed in this chapter to inquire how far these proportions are really causal proportions. We shall study in detail the influence of each of the six magnitudes on each of the other five. This study will afford answers to the objections which have often been raised to the quantity theory of money.”

Prof. Fisher then carefully examines the different factors of the equation, and finds that each factor exerts its influence independently of the others. It is true that a variation in the money circulation will also entail a temporary modification in the velocity of circulation, in consequence of which this change in the quantity of the money is at first not fully expressed in the price level, but in course of time the circulation will reassume its former rapidity, and the variation in the price level will quite adapt itself to that of the circulation.

Prof. Fisher's conclusion appears on p. 183 :

“ In general, then, our conclusion as to causes and effects is that normally the price level is the effect of all the other factors

in the equation of exchange (M , M^1 , V , V^1 , and the T 's); that among these other factors deposits (M^1) are chiefly the effect of money, given the normal ratio of M^1 to M ; that this ratio is partly the effect of trade (the T 's); that V and V^1 are also partly the effects of the T 's; and that all of the magnitudes, M , M^1 , V , V^1 , and the T 's are the effects of the antecedent causes outside the equation of exchange ad infinitum."

Prof. Fisher's reasoning is as lucid as it is clear, yet I do not regard it as convincing. On the contrary, I think that the exact point where the causality falls short can be indicated.

For the sake of convenience I shall make use of the original simpler equation of exchange, which Prof. Fisher has drawn up for a community that employs only banknotes and coins, and does not know of deposit currency.

According to this equation of exchange :

$$MV = PT$$

the price level P would follow causally from the quantity of money M , its rate of circulation V , and the commodities exchanged for money T .

If we inquire how the price level comes about, the answer is: from the prices paid in the separate transactions. Every price paid in a transaction in a definite period contributes to fix the price level of that period.

The following equation of exchange holds in general :

$$MV = PT$$

or for a definite period, 1 :

$$M_1V_1 = P_1T_1$$

Let us now consider a second period 2, which contains the first period 1, plus one other transaction, *i.e.* the next that is completed after period 1 has elapsed. For this period, which comprises only one transaction more than the first mentioned, holds :

$$M_2V_2 = P_2T_2.$$

Let us imagine the condition of the person who acts as

purchaser in the transaction in question, which is the first after the expiration of period 1.

Let us for the moment assume that it is already certain beforehand *that* the transaction (*e.g.* the purchase of 100 bushels of corn) will take place.

The man who is about to act as buyer will, together with the seller,¹ fix the price level P_2 by his transaction. For P_2 is perfectly defined by P_1 , plus the price that will be paid in the transaction in question.

According to Prof. Fisher, P_2 is, however, also defined by :

$$M_2V_2 = P_2T_2.$$

In this equation T_2 is equal to T_1 plus the hundred bushels of corn. If we assume, further, that since the preceding transaction (the last of period 1) no money has been coined or has become lost, then $M_2 = M_1$.

Our buyer is in possession of part of this money, and is now considering the purchase of the hundred bushels of corn.

According to Fisher's equation of exchange P_2 is now perfectly defined (besides by the quantities M_2 and T_2 already given) by the rate of circulation V_2 .

When we now examine in what way the rate of velocity itself is again defined, we find two possibilities :

- (1) The rate of velocity depends on technical circumstances, outside the will of our buyer ;
- (2) The rate of velocity is determined by a decision formed of the buyer's own free will.²

If we base ourselves on the following passage, occurring on p. 152 of Prof. Fisher's book, we shall have to assume that he considers the rapidity of circulation as determined only by technical circumstances.

For he says there :

" As a matter of fact, the velocities of circulation of money and of deposits depend, as we have seen, on technical conditions,

¹ Other possible buyers and sellers are left out of consideration for the sake of convenience.

² And of the seller's free will ; for the sake of brevity only the buyer is mentioned in what follows.

and bear no discoverable relation to the quantity of money in circulation."

These technical conditions may be ¹: the density of the population, the area of the country, and many others.

If, therefore, V_2 is determined by these technical conditions, P_2 is also perfectly defined. But P_2 was also determined by P_1 , and the price that our buyer pays for the hundred bushels of corn. Not his free will, however, has been able to guide him in fixing the price, but a number of quantities given by technical circumstances. And the worst is that in fixing his price the purchaser has to take into account a number of data of which he does not even know the value.

If e.g. M_1 was = M_2 = \$100 million, V_1 = 10, and if the technical conditions required that V_2 was = 10.0001, then independent of the will of the buyer, M_2V_2 , hence P_2T_2 , *must* be = \$1,000,010,000. And then our purchaser *must* know—though he *cannot* know—that he *must* pay \$10,000 for the hundred bushels of corn.

One hypothesis—viz. that V_2 is determined by technical conditions irrespective of the will of the buyer—we must therefore abandon as leading to absurd consequences.

There remains the other hypothesis—the purchaser's own free will determines V_2 .

Prof. Fisher seems not to have realised the importance of the difference between velocity of circulation determined by technical conditions, and velocity of circulation determined by the purchaser's own free will. And it is just for the causal relation that this difference is of the greatest importance. That Prof. Fisher was not fully alive to the difference between these two ways in which the velocity of circulation is determined is proved by the fact that he continues the passage quoted above on p. 152 as follows :

"Velocity of circulation is the average rate of turnover, and depends on countless individual rates of turnover. These, as we have seen, depend on individual habits. Each person regulates his turnover to suit his convenience. A given rate of turnover for any person implies a given time of turnover—that is, an average length of time a dollar remains in his hands."

¹ Cf. pp. 164 and 165.

Here it is, therefore, personal considerations that determine the velocity of circulation. In fact, it is by the personal considerations of buyer and seller that the velocity of circulation is fixed.

But the same decision that determines the velocity of circulation V for every transaction determines also the price level P .

For if, for some reason, buyer and seller agree on the price of \$9000 for the hundred bushels of corn, this one decision fixes the value of V_2 (at 10.00009) and at the same time of P_2 .

Hence, when we try to find the factors that determine the value of money or the price level, the introduction of the conception of velocity of circulation is of no avail, but we must trace the factors that determine both price level and velocity of circulation at the same time.

I quoted above what Prof. Fisher writes on p. 183—viz. that P is the result of the other factors of the equation of exchange, and that all the other causes can act on P only through these factors.

In opposition to this, we see that every transaction is accomplished in virtue of considerations that determine both V and P . P does not follow causally from V , but both have the same cause.

Further, not only does every transaction come about in virtue of considerations that determine both V and P , but also the question whether a transaction will come about or not is determined by the same considerations. Also, T results from the same cause. For in the instance cited above we have assumed for the sake of convenience that the transaction will take place in any case. But perhaps buyer and seller cannot come to an agreement, because the buyer values his money, and the seller his good, too highly to render a transaction possible.

Accordingly, we see that only the quantity of money is an independent magnitude, which can influence the price level. The quantity of money is independent of the decision of buyer and seller. But rate of circulation and turnover of goods are not independent factors, which determine the

price level, but they are themselves determined by the same causes as the price level itself.

On p. 296 Prof. Fisher draws a parallel between the equation of exchange and the law of Boyle, which teaches that only *at constant temperature* pressure and density of a gas vary in direct ratio. Statistics would therefore soon show that pressure and density of the atmosphere do *not* vary in direct ratio from day to day. For, continues Prof. Fisher, the temperature *is not constant*, and for this reason the factor of the temperature has been inserted into the law of Boyle. In the same way, statistics will also be able to show that the price level is not really proportionate to the quantity of money in circulation. For the velocity of circulation and the turnover of goods are not constant.

This parallel, which Prof. Fisher draws, is so remarkable that it calls for close consideration and examination.

For this teaches us, as shown above, how Prof. Fisher could invalidate the criticism of those who thought that the relations expressed in the equation of exchange were faulty, and by pursuing the parallel we can point out also, by way of comparison, in how far causality is absent.

For if the question is asked why the barometer is lower to-day than it was yesterday, I cannot answer satisfactorily by saying that the lower pressure of the atmosphere is caused by the smaller density. Certainly this *relation* exists, but the *cause* must be found in various meteorological phenomena.

And when it is asked why the price level has risen more rapidly than can be accounted for by the increase of the quantity of money, and in spite of the increase of the turnover of goods, this question cannot be answered by a reference to the greater velocity of circulation. A real *cause* may be, *e.g.*, the shaken confidence, the fear of further fall of the value of money, which already in anticipation both forces the prices up and causes people to dispose of their cash as soon as possible—in other words, increases the velocity of circulation.

Here too, the relation, as Prof. Fisher has expressed it, in the equation of exchange, certainly exists. Causally the

explanation of the value of money has not been attained by it; but nevertheless the equation of exchange is of fundamental importance both for the theory and for the practice in money matters.

§ 2. CASSEL

In *The Theory of Social Economy*¹ Gustav Cassel gives an exposition of the quantity theory, following the example of Prof. Irving Fisher.

When giving the equation of exchange, he justly adds, however, that "this equation must properly refer to the entire number of payments, not merely the purchases of commodities."²

Really *e.g.* the payment of a debt would also have to be included in this equation, if, among other things, the frequency of the payments were also given a place among the factors that have to fix the price level.

In the course of this reasoning, Prof. Cassel gives a modified form of the equation of exchange. There is, however, no essential difference. In the question whether the price level *P* was causally determined by the other factors of the equation, we had to consider two possibilities in Prof. Irving Fisher's discussion: first, the possibility that the velocity of circulation was objectively determined; secondly, that it was dependent on the free will of the participant in the exchange transaction. For both possibilities were left open by the way in which Prof. Fisher formulated his theory.

By Prof. Cassel's considerations another opinion is, however, revealed. He takes the velocity of circulation as exclusively determined by objective factors. Thus he writes on p. 425:

"The rapidity of circulation of money represents, in a sense, an independent factor in the problem of the fixing of prices. How often a coin can be used for payments in a given period *depends upon the habits of the people in regard to the use of cash*, the stage of development of the system of exchange, the density of the population, the efficiency of transport, and so on—in a word, upon factors which must be taken for granted when we

¹ Translated by Joseph McCabe.

² P. 424.

are dealing with the theory of money. This does not, of course, exclude the possibility of changes in the general level of prices or the quantity of money having a certain influence upon the rapidity of circulation of money. When this rapidity of circulation is said to be an independent factor, we mean only that it *has independent causes which lie outside the problem of the fixing of prices.*"

Only the phrase italicised by me—"depends upon the habits of the people in regard to the use of cash"—points to a subjective determination of the velocity of circulation depending on the will of the participant in a transaction. The impression that Prof. Cassel meant this as a subjective determination is, however, entirely cancelled by the other statement italicised by me, where he states that the rapidity of circulation "has independent causes which lie outside the problem of the fixing of prices."

Besides, *this* subjective factor, which depends on the habits of a people, is a datum that is little liable to change, whereas it appears in reality that the valuation of money is open to great oscillations, so that in periods of crisis we observe a much higher valuation of the money unit than in times of general prosperity.

Prof. Cassel continues on p. 426 :

"The substance of the quantity theory is always that the existing quantity of money must *involve a definite performance of payments, to which the level of prices is obliged to adjust itself.* In the original quantity theory this view is expressed in the principle that the entire amount of existing money purchases the amount of commodities. In the present form of the quantity theory this supposition is generally replaced by the assumption that the rapidity of circulation of the money is constant. This means that in the unit-period there must be a definite work of payment defined by the quantity of money."¹

By the side of the equation of exchange given by Prof. Fisher, Prof. Cassel draws up another equation. He observes on p. 430 :

"We can also consider the value of money in its connection with the demand for cash, for money, at the time."

And, further, on p. 431 :

¹ The italics are mine.

"We assume that this demand is, all things being equal, proportionate to the general level of prices. This means that, if two independent cases are compared, when all the other factors which influence the demand for money are the same, the demand is in direct proportion to the general level of prices."

Prof. Cassel then arrives at his equation in the following way :

"Given a certain quantity of the real exchange in the unit-period—this quantity we may call I —the demand for money at the beginning of the period is determined by the stage of development and the organisation of the monetary system. This demand at price-level I and real exchange I we will call the relative demand for money, and express it as R . Hence R is equal to the demand for money at a certain point of time per unit of the work of payment in the subsequent unit-period. Generally speaking, the demand for money at any given moment is equal to the total work of payment in the subsequent unit-period, or TP multiplied by the relative demand for money R , and is consequently equal to the product RTP .

"The causes of this relative demand for money have been thoroughly studied in the previous chapter. The relative demand for cash depends, according to the results we reached there, upon the concentration of the cash in the banks and the displacement of money by banknotes in private supplies.

"When the demand for money is definite, equilibrium requires that the demand be equal to the total existing amount of money M , or $RTP = M$. This equation suffices to determine the unknown, the general level of prices."¹

In this interpretation of the quantity theory there are no factors to be found that determine the relative demand for money R , except objective ones, so that, also according to this view of the matter, the price level P is determined by purely mechanical means.

The price level has therefore been determined irrespective of the will of the participants in the exchange transactions. And since these participants determine the price, hence the price level, once more, when their transactions are concluded, we arrive in this way at an insuperable contradiction.

This contradiction compels us to reject the mechanic quantity theory, also in the way it was formulated by Prof. Cassel.

¹ The italics are mine.

§ 3. SCHUMPETER

Joseph Schumpeter's money theory must also be classed among the mechanic theories. Prof. Schumpeter developed his theory in 1918 in the *Archiv für Sozialwissenschaft und Sozialpolitik* (44 Band, 3 Heft), under the title of "Das Sozialprodukt und die Rechenpfennige."

Prof. Fisher left the choice between two possibilities. One was that some objective, independent factors were cast in a mould, from which the price level would proceed as a causal result. Factors, objectively given—*i.e.* lying outside the will of the participants in exchange transactions—would, according to Prof. Fisher, already fix the price level, which is, besides, determined once more by the resultant of the transactions brought about through the will of the participants. This led to a contradiction. The other possibility left open by Prof. Fisher's words was that at least one of the determining factors, the rapidity of circulation, is dependent on the participants in the transactions. It appeared, however, that when a transaction is completed, *the same* considerations contribute to fix both the price and the rapidity. Accordingly, the theory was not mechanic in this case, but at the same time the causal explanation of the price level was lost.

In Prof. Cassel's work scarcely any indications are found that the rapidity of circulation is also determined by subjective factors. Only the words quoted above—"depends on the customs of a nation," etc.—left open the possibility of a subjective determination of the rapidity of circulation.

In Prof. Schumpeter the indication that the rate of circulation is also determined by subjective factors is entirely wanting. His theory is the most mechanic of any in the literature known to me.

Already the expression found on p. 668 is characteristic of the mechanic character of this theory :

"Over against this offer there are only these hundred coins—let us call them a hundred crowns—for which there is no possibility of being used in any other way but to purchase these commodities."

We see at once that Prof. Schumpeter's way of repre-

sentation is purely mechanic. According to him it is the crowns that buy the commodities in a definite proportion, governed by objective circumstances. According to him it is *not* the participants in the transaction who weigh the advantages connected with the possession of money against those of the commodities and base the proportion of exchange of money for goods on this.

When constructing his equation Prof. Schumpeter starts, accordingly, from the premise that the income in money buys the articles of consumption. He writes on p. 675 :

" Let us denote the sum of the incomes of all individuals of a state, including the revenue of the State and the other public institutions—in which income is to be taken in the accepted sense—in a certain year by E , the quantity of money by M , the average rate of circulation by U , the quantity of separate articles of use and consumption—in which for those articles of use which outlast the period in question the normal quantity of articles that has yearly to be renewed should be taken into account by m_1, m_2, m_3 , etc., and their prices by p_1, p_2, p_3 , etc., then the following equation holds :

$$E = MU = p_1 m_1 + p_2 m_2 + p_3 m_3 + \dots p_n m_n$$

According to this way of representing the question, it is the income in money, E , which is equal to the product of the total quantity of circulating money, M , and its rate of circulation U , that buys the quantity of articles of consumption.

On p. 676 Prof. Schumpeter says that he will examine the explanatory value of his equation in detail, and

" first of all whether its magnitudes may be distinguished into determining and determined magnitudes, so that a causal relation is disclosed by them. . . . The conclusion of the quantity theory is . . . that M , U , and the quantity of goods are the *active determining factors*, and that the *price level is the passive determined element*."

Prof. Schumpeter considers the rate of circulation U to be objectively given; he even sees it almost as a constant, so much so that he wants to speak simply of variations of the quantity of money, and understands by this all the variations of $M \times U$.¹

¹ P. 685.

It is self-evident that, starting from U as objectively given magnitude, we arrive at the same contradiction as results from Prof. Fisher's equation.

And practically Prof. Schumpeter leaves us no choice. Just as it is certain beforehand what the pudding will be like when it comes from the mould, so it is also certain what price level will result from $M \times U$ and the available articles of consumption. One can only wonder that the consumers already know what price is too high for them, what not high enough, and what exactly the right price, so that they may duly contribute to fix the proper price level, which had already been determined irrespective of themselves.

But though Prof. Schumpeter assumes the rapidity of circulation to be objectively determined, on closer consideration of his equation not only the rapidity of circulation U , but also even what he calls the quantity of money M , appears, on the contrary, to be determined by—together with and caused by—the same subjective considerations that determine the price level. Nay, this applies even once more to the sum of the incomes E , the product of M and U .

On p. 678 of Prof. Schumpeter's work, an indication in this direction is already found with regard to the money M :

“Further, the persons may now have an inducement to increase or diminish their hoarded money, their reserves, etc., which means a change in the circulating quantity of money, so that this case can be left out.”

For here we see how a possible purchaser is given the alternative either to offer a price for a commodity put on the market which is high enough to obtain the good, or to add to his reserve of money. If he decides to do the latter, both the price level and what Prof. Schumpeter calls the quantity of money would, in consequence, be lower than if he had decided on the former. Prof. Fisher would have spoken here of a retarded rapidity of circulation. Prof. Schumpeter regards only the circulating quantity of money, and if the rapidity of circulation of part of this quantity of money becomes zero for the time being, this amount of money is, as it were, sunk into non-existence. This part

can afterwards again emerge into existence, when the decision is made to decrease the money reserves.

It is, indeed, remarkable that Prof. Schumpeter has not deemed it necessary to consider this point more closely, for at bottom there is nothing in this temporarily "disappearing" money that differs essentially from what Prof. Schumpeter calls the circulating money. All the circulating money circulates every time only for a moment, and then temporarily disappears.

Now it is possible that Prof. Schumpeter is of opinion that the more regularly circulating money after every interruption immediately forms part of the sum of incomes again, and as such distinguishes itself from the money that is hoarded for a long time. Yet it is impossible to detect an essential difference even here—it is only a question of the length of time that the money is laid by.

Besides, there is a great deal of money that regularly circulates, and yet for long periods does not form part of the sum of incomes. Let us take as an example the case of a man who buys a bicycle for nine pounds out of his income. In this first transaction the full amount of nine pounds should be included in Prof. Schumpeter's equation. Of these nine pounds one pound may, *e.g.*, be the profit of the dealer in cycles and wages for his hands. The dealer and his men spend this income again as consumers. This one pound should then also be included in Prof. Schumpeter's equation. But the dealer spends the remaining eight pounds to buy a new bicycle from the manufacturer. In this transaction these eight pounds are no income at all for the dealer, nor expenditure of income, while they are only income for the manufacturer for perhaps ten shillings. Hence seven pounds ten shillings circulates in this transaction without forming part of the sum of incomes, hence without being included in Prof. Schumpeter's equation. If we look more closely into this case, it appears that much money permanently circulates which only partly finds its way into the sum of the incomes.

Prof. Schumpeter treats this question on pp. 671 and 672. It deals chiefly with the quantity of circulating money, but

neither his equation nor his explanations give in any way a solution of the question. For the proportion of this money active in the production to the money that forms part of the sum of incomes is not discussed at all. How does the latter money pass into the former, and the former into the latter? Prof. Schumpeter does not explain this to us, but it is clear that what we found for Prof. Fisher's velocity of circulation V holds not only for Prof. Schumpeter's velocity of circulation U , but also for his circulating money M . For the same consideration that decides whether or no a person coming to market will be willing to pay a certain price for an article of consumption, also decides the question how much money will, for the time being, form part of the sum of incomes. If, *e.g.*, the prospective buyer decides not to buy the bicycle, but instead of this makes up his mind to have his house painted, almost the whole amount that he spends forms again part of the circulating money of the sum of incomes.

There is, further, another objection that applies to Prof. Schumpeter's equation and not to that of Prof. Fisher. Prof. Schumpeter starts from a sum of incomes E , which buys the commodities m_1, m_2, m_3 , etc., at the prices p_1, p_2, p_3 , etc. It should, however, also be taken into account that the income E is not a magnitude given in the first instance, which buys commodities m_1, m_2, m_3 , etc., for prices p_1, p_2, p_3 , etc., but that for many these prices p_1, p_2, p_3 , etc., represent proceeds that determine their incomes. When a man buys the commodity m_1 , out of his income, and with the seller agrees on a price p_1 , the income of the seller depends again on the value of p_1 . And if, *e.g.*, the buyer of m_1 is at the same time the seller of m_2 and the seller of m_1 at the same time the buyer of m_2 , the income of the seller of m_1 is, among other things, determined by the price that the seller of m_2 was willing to pay, and, also, the income of the seller of m_2 is partly determined by the price that the seller of m_1 was willing to pay. Or, to speak less in the language of formulæ and more in every-day language, when the baker offers a higher price for meat, and the butcher more for bread, E rises proportionally at the same time,

according to the same considerations as caused p_1 and p_2 to rise.

Where in Prof. Fisher's equation we came to the conclusion that his velocity of circulation V could not be an objectively given magnitude, which was one of the factors determining the price level, but that V and P were both determined by the same subjective considerations, we find in Prof. Schumpeter that the same thing holds, as well for his velocity of circulation, U , as for his quantity of money, M , and once more separately for the product of these two factors, the sum of incomes E .

§ 4. KEMMERER

Already before Prof. Irving Fisher, Edwin Walter Kemmerer in his *Money and Credit Instruments in their Relation to General Prices*, had given an exposition of the quantity theory, which is practically constructed in an entirely analogous way.

Also in Prof. Kemmerer's discussion of the objections advanced against the mechanic quantity theory, we may observe the same thing as struck us in Prof. Fisher's explanations. For Prof. Kemmerer, too, succeeds perfectly in showing the fallacy of the criticism of those who think that in certain circumstances the equation of exchange does not correspond to the facts. On the other hand, he is no more convincing as regards the possibility that the mechanic quantity theory would be able to teach us anything as to the real causes that can determine and explain the value of money.

On p. 22 he discusses the criticism of those who have given it as their opinion that the mechanic quantity theory has not taken "hoarded money" into account.

To refute this objection, he says :

"Hoarded money performs the money function of a storehouse of value, creates a demand for the money-metal, is popularly known, and should properly be considered as money having a zero rate of turnover during the time it is hoarded. The money supply (MR) is represented by the amount of money multiplied by its average rate of turnover, and the commodity supply (NE)

is represented by the number of commodities multiplied by their average rate of turnover. Money therefore which is hoarded, and whose rate of turnover is zero, and likewise commodities which are not exchanged, have no numerical importance whatever in the price formula $P = \frac{MR}{NE}$.

In this way Prof. Kemmerer has quite invalidated the criticism, so far as it contended that the equation of exchange would not also provide for those cases in which money is hoarded. But as regards the causality, the question how P is brought about, he also is unable to extract a satisfactory result out of his equation.

It is true that he continues :

“ Nevertheless, the subjective valuations placed upon them may have been indirectly of extreme influence upon the price level, through their influence upon R and E in the process of price determination.”

I am, however, unable to subscribe to the contents of this sentence, for, as was shown when dealing with Prof. Fisher's theories, I hold that this “ extreme influence upon the price level ” is not exerted “ through the influence upon R and E ,” but that the “ subjective valuations ” determine at the same time R and E and the price level P . For as soon as the “ subjective valuations ” assume such a character that we no longer wish to hoard our money, but want to buy commodities with it, we cannot say that an increase of P has been caused by an increase of R and E , nor that R and E have risen in consequence of an increase of P . For then the causality is this, that on account of the smaller “ subjective valuation ” of the money, at the same time R rises more rapidly than E , and the price level P becomes higher.

The fundamental cause is therefore “ the subjective valuation,” and the theory that proposes to determine and explain the price level has the task to examine what the “ subjective valuation ” of money is based on, and in what way we can arrive at a determination and explanation of the price level from this basis. In the mechanic money theories we shall, however, be unable to find a satisfactory answer to this question.

In a similar way to that in which he has dealt with the criticism referring to the influence of the hoarding of money Prof. Kemmerer now deals with the criticism of the influence of barter. His expositions on its influence and significance are no less important to us, because they reveal, with the same clearness, in what respect Prof. Kemmerer's quantity theory seems to fall short, from the point of view of causality, of the explanation of correlation. I will therefore quote in full the passage found on pp. 24 and 25.

" Among other examples of barter which may be cited, are the renting of farms on shares, a large part of the business of the so-called company-store, the balancing of accounts by merchants, and the working out of taxes in the United States. Transactions of the above kinds do not involve a money price; they make no demand upon the circulating medium, and it is evident that they are not included in the price formula $P = \frac{MR}{NE}$."

From this it appears, therefore, that the equation of exchange is perfectly correct, notwithstanding the fact that there exists such a thing as barter. If it is realised that in case of barter part of the goods N has a rate of turnover E which is equal to zero, the equation of exchange is valid also for this case. But immediately after this Prof. Kemmerer proceeds to give his views on the influence of the greater or less use of barter.

" It must not be thought, however, that economic prices are not influenced by variations in the extent to which exchanges are effected by barter. The process of evaluating commodities which results in their being bartered for each other is essentially the same as that previously described which leads to the exchange of commodities for money. The exchange of goods by means of barter represents a demand for goods just as truly as does their exchange by means of money. Such exchanges affect the subjective valuations placed upon goods by the various members of the community, and the varying extent to which barter is resorted to affects the demand for money and the subjective valuations placed upon money by the people of the community. The demand for a given article of merchandise in a country store is no less real if that article is bartered for eggs than if it is sold for money. Increase the extent to which exchanges are effected by means of barter in a given community, and the supply of

money relative to the demand will increase, lower subjective valuations will be placed upon the money unit, and a higher level of economic prices will result. This alteration in the price level, however, it is to be noted, would be effected in a manner perfectly in harmony with the principle of the quantity theory as stated in the formula $P = \frac{MR}{NE}$; for the changed subjective valuations above referred to would affect P through their influence upon E and R of the formula."

Here, too, the variations in P are by no means causally determined through E and R , but these different factors are all three simultaneously determined by the considerations of the "various members of the community." For let us suppose that somebody offers his goods in exchange for other goods or for money. If his offer of exchange for money is not sufficiently profitable, a transaction will be completed of exchange of goods for goods (barter), and, as Prof. Kemmerer says, "it is evident that this transaction is not included in the price formula." If his offer of exchange for money is, however, sufficiently profitable, if he asks only so little money that he finds a buyer for his goods against money, a price is fixed which at the same time depresses the price level P and raises the product of N and E more greatly than R .

How little the equation of exchange is able to explain will, moreover, appear from the fact that a diminution in the use of barter can likewise involve a rise of P , at which the equation of exchange also holds good, but cannot lay claim to even the slightest causal signification. Let us reason the other way round. A person possesses both a quantity of money and a store of goods. He wishes to obtain other goods. If in exchange for those other goods he offers little money and much of his own goods, goods will be exchanged for goods, *i.e.* barter will take place. If, however, he offers much money in exchange for the goods desired by him, he contributes to diminish the use of barter and to raise the price level P . We must therefore conclude from this that not only can the equation of exchange explain nothing about the price level, but that even more or less barter need not necessarily mean a higher—respectively

lower—price level. This assertion seems to be incompatible with the sentence quoted from Prof. Kemmerer :

“Increase the extent to which exchanges are effected by means of barter in a given community, and the supply of money relative to the demand will increase, lower subjective valuations will be placed upon the money unit, and a higher level of economic prices will result.”

Yet I can indorse this statement. The apparent contradiction again lies in the question of the causality in the problem, in the question where the final cause lies of the value of money. For I gave two examples, in the former of which less barter (or, in other words, greater use of money) entailed a lower price level, and in the latter less barter gave rise to a higher price level. In the former case a large quantity of goods was offered for little money, in the latter case much money was offered for a small quantity of goods. The difference between the two cases is therefore a difference in the judgment of what the money is considered to be worth. Prof. Kemmerer's sentence now refers to the case, which in substance he tacitly supposes, that exchange of goods by the mediation of money will be replaced by barter, because this *is considered to be no less advantageous*. People therefore see no particular advantage in the use of money, and if, without money, exchanges can be effected just as well as with its aid, money will come to be considered as superfluous, and people will try to get rid of it. From this it ensues that the prices rise. It is then no longer the question barter or no barter, but the question why barter or why no barter, that is to be regarded as the explanatory cause.

In his conclusion of Book I on p. 87 Prof. Kemmerer brings only his quantity theory to the fore, but in the conclusion of Book II, which is intended to provide the statistical confirmation of the theory of Book I, he adds—what he indeed also adds in other places—that “the value of money is determined, like the value of other commodities, by the fundamental law of demand and supply.”

I can fully concur with this addition. There remain, however, at least six more questions unanswered—viz.

- (1) How is this law of demand and supply to be interpreted? (2) Is the demand for money directed to a nominal quantity of money or to a quantity of exchange value in money? (3) Does the supply of money refer to a nominal quantity or to a quantity of exchange value in money? (4) How do we unravel the difficulty of the determination and explanation of the value in exchange of money, if it should appear that we should already have to measure the volume of demand and supply in quantities of exchange value in money? (5) On what is the demand for money based? (6) On what is the supply of money based?

I do not believe that a satisfactory answer to any of these questions can be found in Prof. Kemmerer's quantity theory. He gives an exposition of the quantity theory which, as regards lucidity, far exceeds anything given before him. In addition, he has tried to include in it also the factors of demand and supply, and, as has been already mentioned, the factor of the "subjective valuations." Prof. Kemmerer has justly considered it necessary to give a place to these economic factors in his theory of the value of money. Yet I believe that by taking a quantity theory as the basis of the theory of the value of money one will be confronted by insuperable difficulties, if one wishes to give to these economic factors the prominence that is due to them.

Nevertheless, the different quantity theories have furnished a positive result both for scientific insight and for the practical money policy. The insight of the adherents of a quantity theory comes to this, that to the *nominal* quantity of money only a very nominal significance is due for the total value in exchange of the total quantity of money. The advocates of the quantity theory tell us that by, *e.g.*, bringing more money into circulation the value of the total quantity of money *ceteris paribus* cannot be raised, and in so far as this does temporarily succeed, it should be designated as an erroneous judgment on the part of the users of money. But when we wish to make a closer examination of this judgment of the users of money, when we want to ascertain of what value money is to them and

why they are willing to give or receive a definite quantity of goods in exchange for a definite quantity of money, the results of *the*, or of *a*, quantity theory do not lead us to success.

§ 5. KNUT WICKSELL

Prof. Dr. Knut Wicksell has given a very interesting study in his *Geldzins und Güterpreise*. Here Wicksell appears to be an adherent of the mechanic quantity theory, but adds to his considerations a discussion of the influence of the rate of interest on money on the price level of goods, which enhances the importance of his book. Had he not stated so explicitly that he ranged himself with the followers of the mechanic quantity theory, his theory of the value of money might even be considered to form a class by itself. Now, however, it is impossible to separate his personal share in his money theory from the quantity theory as it had already been developed at the time of the appearance of his book (1898).

Prof. Wicksell gives his opinion of the signification of the use of money on pp. 19 and 20. He considers this signification to be twofold: viz., first, as an expedient for the participants in exchange transactions in all those cases in which one participant does not happen to wish to receive the goods of the other in exchange, nor the other the goods of the first. Secondly, he sees the significance of the use of money in this—that people who have to offer goods in exchange generally do not wish immediately to receive other goods in exchange. In this case, he says, money not only performs the function of a medium of exchange in the real sense, but acts as “store of value.”

It is noteworthy that Prof. Wicksell speaks here systematically of the “*signification* of the use of money,” and of the “*function* as medium of exchange and as store of value.” Undoubtedly his ideas would have developed in an entirely different direction if he had spoken of the *utility* of the employment of money and of its *services* as medium of exchange and as store of value.

He would quite certainly not have come then to the conclusion (p. 27) :

“Money as such, *i.e.* so long as it functions as money, has only mediating signification for its employers; its utility and marginal utility are determined by its purchasing power as regards commodities, not the latter by the former.”

This assertion by Prof. Wicksell is surprising, especially in regard to the function of money as store of value. For Prof. Wicksell, who includes the rate of interest on money in his value theory, has every reason to wonder that interest is paid on money that lies inactive in the safes and in the pockets, if this function of store of value did not render services to the holder—in other words, if this did not represent a utility. Interesting in this connection is a passage on p. 43, where Prof. Wicksell, by way of explanation of the apparently paradoxical phenomenon that inconvertible paper money has value, observes, among other things, “that a medium of exchange is indispensable.” Would, in spite of this, the medium of exchange have no utility?

By reason of his insight into the function of store of value, Prof. Wicksell has, in my opinion, already slightly deviated from the principles underlying the quantity theory, though, nevertheless, he considers himself an adherent of it. In virtue of this insight, Prof. Wicksell seems to me to approach to the cash-balance theory of Prof. Marshall and others. For where the mechanic quantity theories start from the number of times that money passes *from hand to hand*, the cash-balance theories are based on the money that is required as cash balance, hence that lies inactive. There can, indeed, be established a mathematical relation between the average time that the money is lying inactive in the safes and in the pockets, and the number of times that the money passes from hand to hand in a definite period, but—as we shall discuss more at length when dealing with the cash-balance theories—quite different principles serve as the basis of the value theory in these two cases.

Prof. Wicksell himself has not made a distinction between quantity theory and cash-balance theory. In effect he

inserts the principles of the latter into his considerations on the quantity theory. Yet on p. 35 he gives a lucid exposition of a relation between cash balance and prices of goods :

“ If for some reason or other the prices of goods rise, the quantity of money remaining the same, or if the quantity of money diminishes, the prices remaining the same for the present, the cash balances, though in the first case they have not suffered any real change on the whole, will gradually seem too small *in comparison with the then existing prices of goods*. If also in this case I may reckon on increased receipts in course of time, for the present I run a risk of not being able to meet my liabilities in due time, and would at best in any case have a chance to be obliged to allow some profitable bargain to pass by for want of cash. I try, therefore, to increase my stock of ready money, which (disregarding for the present the possibility of a loan, etc.) can only be accomplished by a *smaller demand* for goods and services, or by an *increased* (premature or below the price) *offer* of my own ware, or through both at the same time.”

As we see from this, Prof. Wicksell starts from the premise that a definite cash balance corresponds to definite prices of goods, and that in this case the prices of goods cannot be modified, because with higher prices of goods the need of a greater cash balance would at once make itself felt. It seems to me that in this interesting passage Prof. Wicksell has reached a positive conclusion, though we must at once define the limits of what has been reached. The positive result is that he can demonstrate that a deviation from a definite price level must again be cancelled if, for the rest, the circumstances have remained the same. The limitation of his result is this—that we must assume that originally the *quantity of money corresponded to the price level*. Prof. Wicksell cannot show, however, what the relation is between the right cash balances corresponding to a definite price level, or the right price level corresponding to definite cash balances. Accordingly, he speaks on p. 37 of “cash balances” that have reached their “normal amount.” The important question is now : What is this normal amount? We shall have to examine whether the way in which Prof. Wicksell treats the phenomenon of the rate of interest on money in its relation to the normal rate

of interest enables us to form a logically founded opinion on this point.

Let us, however, first follow his discussion of the quantity theory. As we saw before, there is a difference of opinion between the various adherents of the quantity theories, which chiefly consists in the way in which they suppose the velocity of circulation to be determined. Although Prof. Wicksell gives us interesting considerations on this subject (pp. 45-53), his conclusion is disappointing. For he writes on p. 53 :

“ With the exception of the last-mentioned category ¹ and on the conditions made, the average period of rest, hence the average velocity of circulation of money, appears consequently to be an almost invariable magnitude, which would at once react to an accidental increase or diminution.”

Here we have in effect again arrived at a very mechanic form of the quantity theory, and also in what follows Prof. Wicksell endeavours to prove that the velocity of circulation is determined by objective factors.

The most important feature of Prof. Wicksell's work is, however, found in his theory concerning the influence of the rate of interest on money on the price level. To my great regret, the various references to this subject are scattered over too many pages to be quoted literally, and I have therefore to restrict myself to a *resumé*, which, I hope, will convey as adequately as possible the gist of this theory.

Prof. Wicksell's contention is, in short, as follows. Suppose that credit is offered by the banks at a rate of interest that is lower than the normal rate of interest on capital at the same moment. Those who avail themselves of this credit are then particularly benefited, and by reason of this advantage they are at once able to offer a higher price for goods. For the sake of convenience we may express this in figures. Let us suppose that a producer must buy 100 units of goods for 100 crowns in order to acquire, after a year, a product of 105 units of goods, which can be sold for 105 crowns, and that this increase is equal to the normal rate of interest on capital at the moment. Suppose, further,

¹ In which the money serves as store of value.

that the banks offer credit for 4 per cent. a year. Under for the rest equal circumstances, the producer can then at once pay nearly 101 crowns for the 100 units of goods, even if after a year he should not obtain more than 105 crowns for the 105 units of goods. Urged by competition, he *can not* only pay these nearly 101 crowns, but will be compelled to pay them, because if not, others would do so in any case, and he would be obliged to look on passively. Prof. Wicksell thinks, however, that the producer will be able to obtain more than 105 crowns for his 105 units of goods, because the rise of prices brought about by himself (and his competitors) in the beginning of the year will be maintained. If at the end of the year the interest charged by the banks continues to be below the normal interest on capital as it is then, the same process will be repeated, etc., etc., so that the rise of the prices will never cease, unless the tariffs of interest of the banks are raised to the same level as the normal rate of interest on capital at the moment.

To realise the significance of this reasoning, we must first of all distinguish two possibilities. The first is that, contrary to what Prof. Wicksell expects, the prices do not continue at the level paid by the producers at the beginning of the year, but that they relapse again to the 105 crowns for 105 units of goods. If this supposition should be true, there would be no question of an ever-continued rise of prices.

The second possibility is that which Prof. Wicksell assumes. He says regarding this on p. 86 :

“ In all probability the course of events will, however, not be like this. There is more reason to assume that this process, as long as the lower interest is maintained (all other circumstances remaining the same), is not only permanent, but *constantly repeated*. To understand the connection we shall have to direct our attention partly to the more or less *formal* nature of the value of money, partly to what might be called the *vis inertiae* in the national economic mechanism.”

I fear that there is a decided flaw in the way in which Prof. Wicksell explains the—undeniably existing—relation

between interest on money and price level. My objection is this, that in the way Prof. Wicksell explains the relation, not only a too low rate of interest, but also all kinds of other causes, might occasion a continual rise of prices. To bring this about the *vis inertiae* in itself would already suffice. If, as Prof. Wicksell supposes, the nature of the prices of goods were really *formal*, a very natural and frequently occurring optimism would in itself already be sufficient to cause a constant rise of prices. Viewed in this way, we should almost have to regret that Prof. Wicksell has added considerations on interest on money to his mechanic conception of the quantity theory. For with this mechanic quantity theory we had at least something to hold on to—a firm foundation, which led, indeed, to undesirable and rejectable conclusions, but did not leave everything entirely unsettled. This is, unfortunately, the case with Prof. Wicksell's explanation of the relation between interest on money and price level, which leads to the conclusion that at any moment an endless rise of prices might set in, *e.g.* as a consequence of a too low rate of interest charged by the banks, but as a consequence, too, of a number of other causes, one of which is optimism with regard to the future course of the prices of goods.

There is, however, another objection to Prof. Wicksell's explanation of the relation between the proportion of the interest on money and the normal interest on capital at the moment on one hand and the goods on the other hand. For to what conclusion does this connection lead us, if interest on money agrees with this normal interest on capital? To none, in my opinion.

If Prof. Wicksell's considerations on the interest on money were to serve us as basis for the determination and explanation of the value of money, they would have to supply something to guide us in case the rate of interest on money did agree with the normal interest on capital at the moment. The only information Prof. Wicksell's theory gives us about this is, however, that in this case there is no particular reason to expect any change in the price level. If Prof. Wicksell's theory could give us some information about

what will take place in case of a too high or a too low rate of interest charged by the banks, we should only get an explanation of variations in the value of money. But we should, *e.g.*, get no answer at all to the question why the prices of goods are as they are, and why, *e.g.*, they are not twice as high or twice as low.

It is, however, to be regretted that Prof. Wicksell's introduction of the interest on money into the theory of the value of money has not led to more fruitful results. For that the interest on money—or at least factors in the closest connection with it—plays an important part in the formation of the value of money, seems beforehand plausible. The positive significance of Prof. Wicksell's work is therefore to be found in the fact that he has drawn attention to the factor of the interest on money, which was previously mostly neglected. Perhaps it would have led us farther if Prof. Wicksell had not tried to find a *direct* connection between too cheap bank credit and rise of the prices of goods, but had inserted plentiful creation of money as a link between them. But even then the solution of the problem of the value of money at a given moment would be the first condition for a possibility of a full explanation of the other phenomena.

CHAPTER VII

BRUNO MOLL: "LOGIK DES GELDES"

BRUNO MOLL's views, developed in his *Logik des Geldes*, do not give a theory of the value of money in the full sense of the word. In so far a discussion of his doctrine would be out of place here. However, his theory of the ultimate gratification (*endliche Befriedigung*) is too closely allied with the conception of value, and, besides, is too interesting from the point of view of a theory on the value of money, not to be treated here. The problem that Prof. Moll wishes to consider is found on p. 14: ¹

"With the question what the State uses and acknowledges as legal tender, the static problem has not yet been solved for us; of eminent importance is the further question, if and how far the (economic) value of this legal tender is stable with reference to the price level at home, and with reference to foreign money. And if we are not concerned here with the question according to what laws changes in the value of money take place in separate cases—this is the problem of dynamics—this one thing we, too, wish to know: in how far is the possibility of a stability of value or a variation of value (in particular a decrease of value) in a money system to be given beforehand?"

According to Prof. Moll, we must endeavour to attain the solution by way of the "problem of the end as fundamental task of the logic of money." ²

There must, he says, be an "*endliche Befriedigung*" (ultimate gratification) which renders people willing to accept money.

"For circulation—the mere process of being passed on—cannot be its ultimate end, it cannot be thought as being continued in all eternity. Some time there must come a redeeming, a gratification. For all money (and very certainly paper money) seems,

¹ Second ed., 1922.

² See heading Chapter II, p. 26.

considering the way it is used, only a *claim* to other commodities, a mere sign, a token, but not a thing that contents us in itself." ¹

The gratification must come through the ultimate redeeming, in money itself we find no satisfaction. Prof. Moll's assertion, "Not a thing that contents us in itself," is met with in various other writers in almost the same terms, and I shall discuss this statement more in detail later on. Many writers, however, have merely confined themselves to making this statement. Prof. Moll has not been satisfied with this, but has thought it necessary to try to ascertain what does give the gratification that induces us to accept money. He sees this in the expectation of an ultimate redeeming of the money. He asserts that "the economic ideas of men require that the *possession of money in the end leads to some material (or perhaps immaterial) gratification, which either would be directly reached through the material of the money itself or else through redemption in other goods or services.*" ²

Notwithstanding the fact that Prof. Moll's theory shows a decided superiority to that of many other writers who deny a value of its own (gratification) to money, several objections may be made to his doctrine.

First, if the gratification that money gives lies in an ultimate redeeming, this can only be expected to take place at a far-distant time. If everything proceeds normally in a State, this redeeming is not to be expected so long as the money to the issuing of which the State has contributed continues to circulate. Not until the organisation of the State is decomposed, or something similar takes place, can there be any question of redeeming. Mostly, however, such events take place under circumstances that might endanger any possibility of redeeming. And it would be just this very critical moment to which our confidence would look forward for an ultimate gratification. But, besides, this moment lies in a distant future, and the more distant the better! But if a gratification lies in a far future, its cash value is exceedingly small. Hence the more solid the internal conditions of the State, the less a redeeming

¹ Pp. 28 and 29.

² Pp. 58 and 59.

may be expected, the smaller the cash value of the ultimate gratification !

Secondly, if gratification can really only be attained through redeeming, and money in itself gave no gratification, convertible paper money would always at once be presented to be exchanged for gold. If the gratification that money gives lay in the redeeming, this would always be desired to occur as soon as possible. That, in spite of this, convertible paper money is not immediately handed in to be converted is the proof that this conversion is *at least* not the *only* way in which money can yield gratification. Besides, were we justified in assuming that by the side of another gratification also that of the redeeming exists, we must assume that the latter is neither greater than the former nor adds even the smallest particle to it. For if the gratification of converted money were greater than that other gratification, we should present the paper money to be converted, and use the metal for non-monetary purposes. This is, indeed, actually done for more or less limited quantities, but it holds good for what continues to circulate as convertible paper money that the other gratification must be greater than that yielded when it is converted. That the conversion does not add anything to the other gratification appears from this, that people do not always at once convert their paper money and use their metal money to attain both the gratification through the converted money and the other. It must be denied that the gratification which the conversion gives both alternatively and cumulatively is greater than that which the use of the convertible paper yields as money.

It might be objected to this that gold, *e.g.*, undeniably has a greater value through its being used also for non-monetary purposes, and this greater value would then point to a greater gratification. This, however, is by no means called in question in what precedes. What *is* denied is that the gold that is kept in reserve for the purpose of conversion, and also the convertible paper money, would itself have a greater value, because there are other purposes for which other gold is used. For the very fact that this paper money

is not exchanged is the proof that the gratification which the exchange might give is already fully covered by that other gold.

Nor is it, of course, asserted that if what I have called that "other gratification" which paper money gives, should, for some reason or other, become lost or be diminished, in this case exchange would not give a gratification. But this gratification of a conversion, if it takes place, does not act cumulatively with respect to the "other," nor alternatively, but only alternatively under certain circumstances. As an explanation of the basis on which "gratification" offered by money is in general founded it can render no services.

Thirdly, the expectation of an "ultimate gratification" by redeeming is in conflict with what Prof. Moll asserts on pp. 16 and 17. In these pages his exposition is undoubtedly clearest, and there he also uses the conceptions current in economy: utility and value. He says there, among other things:

"The value of money cannot be owing to the gold or silver as such, for in itself no thing is valuable."

This seems to me little in harmony with his later reasoning, according to which gratification would be found in a redeeming, as we find it in the above-quoted passage on pp. 28 and 29. Prof. Moll continues on p. 16:

"Only their usefulness, therefore, gives metals their value. This usefulness is, however, by no means only due to their fitness to be used for ornaments and for industrial purposes. But it lies partly in this, that gold and silver serve at present, and have served for a long time, as material for money."

Here too, therefore, Prof. Moll expresses his firm conviction that it is the monetary function that confers value on money, as long as it circulates. Why should we then ask for another *Befriedigung*, when it circulates no longer? Why this "problem of the end" at all?

If we realise that a house is of use to us while we live in it, and will be of use to the next inhabitants, so that we can sell it when it can be of no further use to us, must we then, too, be able to imagine an "end" or an "eternity" to

understand the "logic" of the house? Must we know then that the bricks that are left to us can furnish a gratification to us, in order to be able to realise that we must now take the house in exchange for other goods?

The sentence quoted above from pp. 58 and 59 shows that with regard to money Prof. Moll thinks that "the economic ideas of men" demand that the "possession of money leads in the end to some material (or else immaterial) gratification," whereas on p. 17 he appeared to perceive that "at present for a great part the monetary function gives its value to the metal." It seems improbable to me that people, when buying a house, are satisfied with its function of habitation, and do not trouble about the "problem of the end," but that they should require from money, besides its function of money, another "ultimate gratification."

From this far and doubtful future we shall have to return to the present, and try to ascertain what to-day determines the value of money.

I cannot agree with Prof. Moll, when he says (on p. 62) :

"The certainty of the individuals to be able to pass on the money rests in the end on the trust—whether conscious, half-conscious or unconscious—that even the last owner of the money, who cannot pass it on, has in his possession something of value."

The history of the last five thousand years, *on the contrary*, gives me the firm and deliberate conviction that the money that I readily accept to-day will one day be valueless. But this has no perceptible influence on my readiness to accept it. Whether the shilling that I accept to-day will still be worth a shilling after a thousand years, or nothing, makes in cash value only the difference of a *small* fraction of a farthing.

Accordingly, for the value problem we return to the value that money has at the present day.

CHAPTER VIII

THE "ANRECHT" THEORY

§ I. A PRECURSOR. HILDEBRAND

Die Theorie des Geldes, written by Dr. Richard Hildebrand in 1883, may perhaps be considered as an introduction of what was afterwards developed by F. Bendixen and others into the Anrecht theory. Hildebrand himself refers again to Locke and other writers with partial approval. Indeed, vestiges of the Anrecht theory can be traced down to the earliest times of economic literature.

Prof. Hildebrand's theory cannot appropriately be called a complete Anrecht theory, as we shall find it later in Bendixen. The same thought, however, from which the Anrecht theory starts we find on p. 113, in the words :

"With more reason the value of the money must be considered as being *given* before it appears on the market."

We find here the characteristic that also marks the more completely worked-out Anrecht theory—*i.e.* the denial of the existence of a value problem. Where we try to explain how the rate of exchange is determined between (other) goods and money, on one side by the valuation of the goods, and on the other side by the valuation of the money, Prof. Hildebrand considers only the valuation of the goods, and thinks that the value of the money is already fixed beforehand.

In harmony with this view is his thesis that money *is* not a commodity. He writes on p. 6 :

"That *gold* or *silver* is a commodity is beyond doubt. But does it follow from this that *money* should be a commodity? Or do not rather money and commodities by their very nature represent diametrically opposed ideas? For precious metals can

be both commodity and money, or, according to circumstances, either commodity or money, but never money and commodity at the same time.

"To get a clear idea of this we need only compare the part money and commodities play in trade somewhat less superficially than has always been done up to now, or, in other words, to subject the turnover or sale and purchase of goods to a closer psychological analysis.

"Every ware is negotiated, because comparatively one has abundance, another need of it, or because, no matter from what cause, one values its possession more highly than another. All trade—and merchandise is nothing but the objects of trade—is founded on a distribution of the article in question among the different individuals (respectively towns or countries or also times) that does not correspond to the need, or on the different value the different persons (respectively whole towns, countries or times) set on the possession of one and the same thing or species of commodities. . . .

"*Money, on the contrary*—at least in the commodity market, and we are only concerned with this here, in contrast with the so-called money market—passes from hand to hand, *not* because one possesses more, another less than he needs or can use, or because one sets a greater value on its possession than another. For money *in itself*, or by its origin, is no object of need at all, *i.e.* there is no question of a possible abundance on one side, or a possible shortage on the other side. It is always only by trade that it becomes an object of a definite need, because in trade definite obligations (of payment) are entered upon. In other words, *all* money only exists in order to be *spent*, sooner or later, in some way (remunerative or unremunerative)."

It seems to me that in this "psychological analysis" Prof. Hildebrand has done violence to the facts as they present themselves to us. It is remarkable that the latter part of his reasoning, which is the logical consequence of the first part, naturally leads to contradictions with the actual facts, which compels us to call in question the validity of the suppositions made in the first part.

He says in the first part that in exchanges between commodities and money only the comparative shortage of, or the higher value attached to, the commodities plays a part, and that in such an exchange there can be no question of a comparative shortage or a higher value attached to money. But in the second part he is naturally led to the consequence of this standpoint—*i.e.* that money would not be an object

of need at all. Now, however, two facts may at once be mentioned that are in flat contradiction to this statement. The first fact is the existence of gold money. If there were no need of money, there would exist no gold money, for the first persons to lay hands on it would at once use it for other purposes—*e.g.* for making ornaments. Now this objection might be answered by alleging that the first person who came into possession of the gold money did not make it into ornaments because he set greater store by the goods that he could buy for the gold money: he therefore spent it. Hence Prof. Hildebrand's assertion: "All money only exists to be spent." If this allegation were true, however, there would only be *offer* of money in exchange for commodities, and commodities could never be bought in exchange for money. This is the logical inference of the standpoint that money is "no object of need at all." In so far as the meaning of money in exchange transactions is concerned, I would turn Prof. Hildebrand's sentence that "all money only exists to be spent" into its very opposite, and say that the economic significance of money is due to the fact that we generally prefer *not* to spend it for some time, but keep it till the moment arrives when we really set a higher value on some good than on the money for which we can buy it.

Another fact that is in conflict with Prof. Hildebrand's arguments is that the holder of money, if this were no "object of need," would always at once render his possession remunerative, *e.g.* by depositing it in a bank or by buying bonds or other value for it. That this is often not done—and even so far as money is rendered remunerative care is often taken that it can immediately be at the disposal of the owner, on account of which he must be satisfied with a low interest—is the proof that the possessor of money in some way or other gets adequate compensation for his loss of interest. Accordingly, during the time that the holder of money keeps it on hand his need of the money is so great that he is willing to lose the interest for it.

I believe that this also disposes of Prof. Hildebrand's reasoning, where he denies that in the commodity market a

formation of the value of money would take place. He writes on p. 112 :

“ Money is no commodity, and therefore no object of demand and supply in the commodity market—at least in the sense in which this is the case with goods. And consequently there can be no question of a formation of the value of money in the commodity market (according to the relation of demand and supply). With more reason the value of money must be considered as being *given* before the money appears on the commodity market, *i.e.* meets the commodities as medium of exchange, or before the game of demand and supply begins, through which the price of each separate commodity is determined. For every article a definite price is, indeed, bid, and a definite price is *asked*, but the amount of the price that is bid or asked for an article, is in no connection whatever—at least in no direct and necessary connection—with the quantity of the available money or the money in circulation, or with the relation between this quantity and the need of money, except then in the opposite sense, that the quantity of the money in circulation, or at least the need of money, is influenced by the prices, but not that the prices are determined by the quantity of money. Hence a confusion of cause and effect.”

In the latter part of this statement Prof. Hildebrand gives a very interesting exposition. We have already come to the conclusion that the facts compel us to reject the first part of his reasoning, and that, in opposition to what he says, we cannot but assume that the prices of commodities are undoubtedly determined, among other causes, by the demand for money. But, on the other hand, it is impossible to deny the validity of the latter part of Prof. Hildebrand's reasoning, where he states that the prices of commodities contribute to determine the demand for money. We must, however, deny that there should be a confusion of causes and effect, though it seems to be so. The conclusion we arrive at is that on one side one thing is cause, the other effect, and on the other side, the other cause, and the one effect.

It is obvious that this led people into a vicious circle with regard to the solution of the problem of the value of money. This has frequently happened, and it remains an urgent question how it is possible to surmount the difficulty of this interdependence.

§ 2. THE "ANRECHT" THEORY (BENDIXEN)

One of the clearest and most pronounced interpretations of the Anrecht theory is found in *Gesammelte Aufsätze* by F. Bendixen, under the title of "Geld und Kapital."

Bendixen's insight into the nature of money is clearly expressed in his preface to the second edition, in these words :

"Hence money, which has given a name to this economical form and is adopted for its service, is not a medium of exchange, still less a commodity of exchange, but a symbol of a service accomplished for the community, a claim to a service in return on the ground of a service done."

With great appreciation Bendixen bases his statements on the work of Prof. G. F. Knapp, *Staatliche Theorie des Geldes*. I must, however, call in question whether Mr. Bendixen does justice to many other writers when he writes :

"So far the value of money had been derived from the value of gold, the value of money had been taken as equal to the value of gold, and from this premise the value of money as medium of exchange had been determined and explained."¹

It appears from the history of the doctrine of money that already centuries ago it was understood that the value of money could not simply be derived from the value of gold.

When Bendixen says :

"Accordingly, money does not owe its value to gold, but gold owes its value to money, *i.e.* to the legal regulations of the money system"²

he will have met with hardly anything but approval as regards the first part of this sentence. Also the latter part on the legal regulations was not new, but was already to be found in the old theory of the *valor impositus*. And even Aristotle had already expressed a similar opinion.

What is characteristic of the Anrecht theory is that it teaches that there is no sense at all in speaking of the value of money. Thus Bendixen writes :³

"Money is the abstract unit of value. When we want to express the value of a thing, we mention a number of units of

¹ P. 4.

² P. 5.

³ P. 22.

value. The values of the things that are to be estimated are the numerators to the common denominator money.

"What, however, is the value of money itself? Or has money itself no value?

"If money is understood as the expresser of value, the question, after the value of money is paradoxical. It would be as if one tried to find the numerator which belongs to the common denominator in itself, hence without taking the relations into consideration for the unification of which it is called into existence.

"An abstract unit of value can have no value, that is self-evident, a matter of course."

And further :

"The question is, therefore, has concrete money value—apart from its material—and what value has it? There is only this simple answer to it: money has the value of all that can be bought for it. . . .

"By means of money all values are expressed in figures, but money itself as abstract value unit is not the object of the valuing thought, cannot be so. Does this not also apply to the concrete means of payment?

"Also concrete money offers no hold to which the process of valuation might attach itself. For it refers only to abstract units of value, which evade valuation. In another place I have defined money as a claim to a service in return for a previous service rendered. Hence money is only the mediator between mutual services. Only to this is the human will directed, only to this the thought of valuation."¹

To this I will add what Mr. Bendixen writes on p. 18 :

"The unit of value, also called unit of account or money unit, is—considered formally—the magnitude fixed or recognised by the State, on which the official money is based."

It seems to me that this last sentence contains the essence of what I consider as the fallacy of the Anrecht theory. To Mr. Bendixen *unit of value* and *money unit* were synonyms. And this may be accepted up to a certain point, if we consider a definite moment. At a definite moment we may state: 1 kilogram of wood is *A* shillings and 1 kilogram of iron is *B* shillings, in which the shilling can be both unit of value and money unit. If, however, different moments are compared, *e.g.* now 1 kilogram of wood is *A* shillings and a year ago 1 kilogram of wood was *B* shillings, the shilling is, indeed,

¹ P. 23.

in both cases still money unit, but for this purpose of comparison it is no longer an adequate "unit of value," because there may have occurred some change in the *money unit* between *now* and *a year ago*.

If the money unit were really an invariable "unit of value" it would to a certain extent be justifiable to speak of money, as Mr. Bendixen does on p. 19, as of "a claim (*Anrecht*) to the negotiable products of consumption, which is expressed in figures in units of value." In reality, however, the money unit is variable as regards numbers of units of value, hence also as regards values of claims (*Anrechte*).

The case of the unit of value in economics is comparable to cases in physics. For instance, the weight of one litre of water can serve as unit of weight if, at a given moment, it is desired to compare the weight of iron and copper. But as soon as it is observed that the weight of a litre of water is modified when temperature and pressure vary, the weight of a litre of water can only be used as unit, at a definite temperature and pressure. We must even go a step further: if in the future it should appear that still other factors can be of influence on the weight of a litre of water, it would henceforth be necessary also to take these factors into consideration when establishing the unit of weight. What physicists do on logical grounds, economists ought also to apply to their science.

As soon as they observe that in general the prices of goods in money units are modified in the same direction, they must realise that in this way this standard unit considered cannot serve as unit of value, and that this variable money unit must not be called synonymous with a unit of value.

When Bendixen writes:

"Everybody knows by experience that when he buys or estimates the value of a thing, he takes the money as a fixed unit, to the value of which he does not give a thought"¹

this sentence, written in 1910, is quite excusable, but it is not correct.

The normal differences in temperature and pressure, too,

¹ P. 24.

are not such that we need trouble our heads about their influence on the weight of a litre of water, if not too accurate comparisons are concerned. But as soon as there is really a question of very exact comparisons, we must avail ourselves of the data of experience that we have at our disposal.

Since then, in the years 1922 and 1923, the money in Germany and also in other countries passed through such vicissitudes of temperature and pressure that not only scientists, but also everybody else, can hardly consider money in daily use as a stable measure, about the value of which they do not trouble their heads.

It is therefore not possible to subscribe to Bendixen's statement that money has no value.

But putting the question like this, the value problem becomes to him very simple indeed.

On the other hand, the fluctuations of the price level present, of course, very great difficulties to the Anrecht theory.

Bendixen writes on p. 25 :

"That in general prices have risen in the course of the last decades, that, as it is usually expressed, life has become more expensive, is an experience of which nobody doubts, and everybody is prepared for the fact that this process will proceed further in the years to come. To enter more deeply into the causes of this phenomenon would lead us too far. I will only mention that in times of great activity in conflicts about wages, the energy of those that demand is greater than that of those who refuse, and that general rises of wages must raise the general price level; further, that possibly also the system of the creation of our money will have a price-raising influence."

Very interesting here is the passage about the "energy of those that demand," which is stronger than that of those that refuse. For according to Bendixen's definition, money is a claim to a return service acquired by a previous service. Previous service and service in return are in this way directly connected. The intermediate claim does not play an independent part. Now it suddenly appears that those that claim are too strong for those that refuse, and succeed in acquiring a quantity of claims which can supply them with more services in return. The result is, however, not,

as would have been expected as a logical consequence of the Anrecht theory, that this larger quantity of claims would also obtain a greater quantity of return services. On the contrary, Bendixen thinks it now a most natural thing that the greater quantity of claims obtain about the same quantity of return services as the smaller quantity of claims did before. This makes money no longer a neutral link between "previous service" and "return service," but it undergoes a change itself between the moment that it was given as a receipt for the previous services and the moment that it acts as claim to services in return.

This variation, however, involves the necessity of a value theory of money which accounts for this change, explanatorily and quantitatively.

But, then, it would not be easy to build up a theory of the value of money on the economic forces acting between those that claim and those that refuse. If the strength of the claiming party is greater than that of the refusing one, only an ever-accelerated rise of the price level is conceivable.

There are two passages that might have brought Bendixen to the point from which a valid solution of the problem of the value of money would have been possible. He says on p. 26:

"Possession of money means loss of interest; hence everybody tries to dispose of his money in return for other acquisitions."

Possession of money meaning loss of interest, people try to exchange money for other acquisitions. But if possession of money really meant *nothing else* than loss of interest, why should it then not always be immediately disposed of? That it is not always at once exchanged for some other good is the convincing proof that the possession of money has still some other meaning, and that this other meaning is a sufficient compensation for the loss of interest till the moment that the money is spent.

The second passage is found on p. 68:

"The cash balances do their service without yielding interest."

Here one would have to argue as follows: this money

does not return interest ; that people put up with this is the proof that it is useful in another way. This would at least be a step in the direction of a solution.

On p. 35 it is stated :

“ When somebody has a claim to the tenth part of the contents of a wine cask, has this claim for him then any other value than the tenth part of the cask? The bank deposits are nothing but claims to commodities and services. To how much of them depends on the price level, in which money is thought of and treated as a stable magnitude, and by no means forms an object of variable value, as in the exchange of two commodities *inter se*.”

If we begin our examination of these three sentences, which represent the Anrecht theory in a nutshell, by first subjecting the last sentence to a close scrutiny, two remarks may be made about it.

First, this, that since 1912, when Bendixen wrote the above passage, there have been times when we very decidedly did not consider and treat money as a stable magnitude. At least for those times, in which from day to day we were prepared for considerable variations in this far from stable magnitude, we ought therefore to have a theory that can account for the phenomena in connection with this. But also when these variations take place so slowly that we do not perceive them from day to day, and accordingly do not take them into account, they nevertheless play a part.

Let us take another example. Suppose that cigar manufacturers can rely on a steady sale of their products for many successive years, so that they have begun to consider and treat the extent of their sales as a stable magnitude. Suppose, further, that the habit of smoking, *e.g.* by an increased pursuit of sport, very slowly diminishes (*e.g.* 1 per cent. a year), would this decreasing demand for cigars not manifest itself either in the price or—if the prices had been fixed by contract—in another way? Also the variations in something that is considered and treated as if it were stable, but is not so, present a problem that calls for a solution.

Besides, we noted above that Bendixen himself sees variations take place in his claims, *i.e.* between the moment that

those that demand succeeded in possessing themselves of a greater quantity of claims to return services as reward for their previous services, and the moment that they exchange their return services for them.

Secondly, also if we could not only consider and treat money as an invariable magnitude, but if it were also actually an invariable magnitude, a problem would force itself upon us—viz. the determination of the value of this magnitude, and the explanation, why logically the value of this magnitude is as it is, and why it *must* be so.

In my opinion, this problem would be still more puzzling, and certainly not simpler, than the problem of the value of money, as it is in reality.

If we now consider the second sentence of the quoted passage, it appears that Bendixen regards the bank deposits as being of the same nature as, e.g., "a claim to the tenth part of the contents of a wine cask," as mentioned in the first sentence.

Let us for a moment accept Bendixen's statement, in spite of the objections we advanced to it above. Let us, therefore, disregard (what appeared above) the fact that there is an essential difference—viz. that with bank deposits (and with money in general) the magnitude of the claims is not invariable (even if it is often considered and treated as such), but that it is determined every time anew in every exchange transaction, whereas a claim to a tenth part of a cask of wine has a definite magnitude—even then a problem of the value of money would continue to exist. And that for this reason, that I cannot accept Bendixen's assertion that the *value of a claim is equal to the value of the thing to which it refers*. For though Bendixen puts the first sentence in the interrogative form, it is evidently his intention to answer the question thus: "Without any doubt the claim to the tenth part of the contents of the wine cask has the same value as the tenth part of the contents itself."

Many examples may, however, be adduced in which the claim has another value than the good to which it refers. Thus ten tickets each for one dinner are worth considerably more than ten dinners. For of these ten tickets I can

exchange one for a dinner to-day, and reserve the others for the nine following days. Accordingly, I prefer the ten tickets to the ten dinners, which I should not know what to do with. Now it may be argued that the value of these ten tickets is, indeed, worth more than that of ten dinners delivered at once and at the same time to the same person, but that the value of the tickets is not greater than ten dinners supplied on ten successive days. But in this case the nine remaining dinners are only negotiable in the form of a claim. In those cases where the claim refers to a future delivery it is even practically impossible to replace the claim directly by the thing to which it refers. Hence there can be no question of an equal value.

We might, however, partly agree with the opinion that the ten tickets *are* equal to the ten dinners. We have already seen that it is impossible to concur with this opinion when the choice refers to ten tickets and ten dinners supplied at the same time. We have also seen that the ten tickets present considerable advantages over the dinners supplied on ten successive days, because it would even be impossible to negotiate these future dinners in another way than by means of claims. But we must, of course, at once readily admit—at least to a certain extent ¹—that to-day the first ticket is equal in value to the first dinner, to-morrow the second ticket to the second dinner, etc., etc.

But even then the tickets offer an additional advantage, because in general the choice is left to the holder *when* he wishes to exchange them—a factor which plays an important part in the theory of the value of money.

It is, indeed, strange that from the fact that the claim derives its value from the thing to which it refers, Bendixen and other adherents of the Anrecht theory should draw the rash conclusion that this value must be equal to it. For why should claims be created if they did not present advantages? And do these advantages not represent a value above the value of the thing that can be obtained for it?

Besides the possibility of a greater value of the claims—which is, indeed, the purpose of their creation—there is also

¹ See for the restrictive addition below.

that of a smaller value than that of the things to which they refer. For the moment of exchange is always that at which the claim has a smaller value for us than the thing for which it stands; thence the decision to proceed to the exchange. Besides, a circumstance may occur that had not been foreseen in the creation—viz. that the possibility of exchange becomes uncertain, for some reason or other, so that the claim can fall in value far below the thing to which it refers.

Taking everything together, it appears that it is not admissible to equate the value of the claim to that of the thing to which it refers. Finally, it may still be mentioned that also the value of the thing to which the claim relates may again be influenced by the creation of the claim. I can negotiate a box of cigars in kind, but a parcel of a hundred bales of tobacco is rendered easily negotiable only by the creation of documents that give a claim to the parcel. The value of this parcel of goods is considerably influenced by this negotiability.

To the Anrecht theory the modifications of the price level and the influence of the creation of money are, of course, a problem that is difficult to bring into harmony with the theory, as was already shown above. In his *Bemerkungen zur Goldschöpfungslehre* (written in 1929) Bendixen says: ¹

"I have repeatedly expressed the guiding rule of the creation of money in these words, that money that is intended to buy in the market should not be created when at the same time a corresponding increase of goods does not take place."

The question is, if by a side way, after all, the same view of a certain relation between quantity of commodities and price level has not slipped into the Anrecht theory as is held by the adherents of the different forms of the quantity theory.

For when newly created money must agree with a corresponding increase of commodities, the consequence of this standpoint must also be that decrease of the existing quantity of money must agree with a corresponding decrease of commodities.

The difference from the various forms of the quantity

¹ *Geld und Kapital*, p. 58.

theory is, however, then only this, that in the latter an endeavour has been made to determine the relations of price level, quantity of commodities, and quantity of money, whereas Bendixen does not define the relation more closely than by speaking of a *corresponding* increase of commodities.

Whether this "corresponding" would mean "equal," as the more primitive forms of the quantity theory taught, or whether there are other definite relations, as the scientifically constructed quantity theories teach, is left an open question by Bendixen. But that he does not work out this point further does not mean that the point did not come under his notice, and that a further study would not have been necessary to make his theory convincing.

Perhaps it is possible to obtain somewhat more certainty with regard to the meaning of the word "corresponding," for it might be inferred from his theory of the creation of money that "corresponding" means "representing the full compensatory value in agreement with the existing price level."

But if this assumption is correct, we find that, after all, Bendixen's theory of the price level is closely allied to the more primitive forms of the quantity theory.

Summarising, I have therefore been compelled to conclude, with regard to Bendixen's Anrecht theory, that his opinion that the term of value cannot be applied to money is incorrect, for :

- (1) His comparison of money to a claim did not hold good.
- (2) If it did hold good, those claims also would require a value theory.

In addition, it appeared that though Bendixen did not desire an explanation of the conception of the value of money, the phenomena of the variations of the price level called for an explanation also in his exposition. He supposed that he could find it in his theory of the creation of money, but the arguments he adduces there are by no means more competent to give a real explanation than the long-discarded more primitive forms of the quantity theory.

§ 3. KARL ELSTER

Karl Elster has laid down his money theory in his book *Seele des Geldes*. Like Bendixen, he is a follower of the Anrecht theory. In a sympathetic way he gives evidence of his veneration for this capable precursor, to whom he has dedicated his book.

Notwithstanding a close resemblance in their views, there is also an important difference in their way of reasoning, when they discuss the problem of the value of money. Bendixen said, as we know: Money is a claim to commodities. Accordingly, we cannot speak of the value of the claim, but only of the value of the thing to which the claim refers.

Elster, however, follows another method. He gives a description of, and compares, the motives that lead us, first in the case where two commodities are bartered for each other, then in the case of an exchange of a commodity for money. Where in this way he gives an exact analysis of economic motives in an economic process I prefer his method. The more so as Elster excels in great accuracy and lucidity. He thereby puts those who cannot entirely concur with his reasoning under an obligation to indicate exactly where the point lies that renders another view necessary.

The above-mentioned description and comparison of an exchange of two commodities and a purchase of a commodity for money are found on p. 18 and the following pages of *Seele des Geldes*, and once more in an appendix of this book, which contains many "Monographien zur Geldtheorie." The first of them is a reprint from the *Jahrbücher für Nationalökonomie und Statistik*, p. 116 (Dritte Folge, Bd. 61), 6 Heft, entitled "Vom Werte, den das Geld nicht hat."¹

He writes on p. 20:

"Where in exchanges four different considerations present themselves—viz. four different valuations:

- (1) That of the commodity that is to be given away,
- (2) That of the commodity that is desired,

¹ *Seele des Geldes*, 2nd ed., Jena, 1923, p. 373

(3) All the commodities that might possibly be given away instead of the commodity we are going to give,

(4) All the commodities that might possibly be obtained instead of the commodity we desire,

there are only three things to be considered in a purchase—viz. two valuations :

(1) That of the desired commodity (compare above under 2),

(2) All the commodities that might possibly be obtained instead of the commodity we desire (cf. above under 4), and besides these two valuations of commodities

(3) Also the consideration whether the desired commodity might possibly be obtained for a lower price. This consideration—as need not be further explained—is no valuation of a commodity; this is clear without further elucidation.”

First of all I should not declare a further explanation of point (3) among the considerations in case of a purchase superfluous because it is no valuation of a commodity, but I would do so because it is not a point of difference with the considerations in case of barter. For though Elster has not added it as the fifth point in the case of barter, yet if in a certain case (3) and (4) do not come into consideration because the commodity that is to be given away is the least desired and the desired commodity is more desired, an endeavour will be made to obtain the desired commodity at the sacrifice of a quantity of the commodity that is to be given away, which is as small as possible. Only when a single and indivisible good is concerned, this point need not be considered.

If we therefore confine ourselves to the four considerations in case of barter, and to the two considerations in case of purchase, as also Elster wishes (though on other grounds), we find the following possibilities :

(1) In a case of barter between two commodities the transaction is completed between the commodity under (1) and that under (2), if the commodity that is to be given in exchange has less value for the giver than the commodity to be received (under (2)) and than all the other commodities that might be given in exchange instead of it (under (3)), and the commodity to be received in exchange more than

all commodities that might be received in exchange instead of it (under (4)).¹

(2) An exchange between the commodity under (1) and one of the commodities under (4) is completed if the commodity to be given in exchange has less value for the giver than the commodity under (4) and also than those under (3), the commodity under (2) having also less value for the giver than that under (4).¹

(3) An exchange between a commodity under (3) and that under (2) takes place if the commodity under (3) has less value for the giver than that under (2), and also than the commodity under (1), all the commodities under (4) also having a smaller value for the giver than that under (2).¹

(4) An exchange between a commodity under (3) and one under (4) is completed if the commodity under (3) has less value for the giver than that under (4), and also than the commodity under (1), the commodity under (2) also having a smaller value for the giver than that under (4).¹

(5) *No exchange* takes place if the commodity under (2) and all the commodities under (4) are of less value to the giver than the commodity under (1) and all the commodities under (3).

In the case of purchase, as Elster puts it, it is only stated that if *it is given that the purchase takes place*, the commodity bought will be that under (1), if all the commodities under (2) have less value for the buyer than that under (1), whereas in the opposite case the commodity bought will be one of the commodities under (2).²

It remains, however, entirely unexplained if, and if so why, a purchase is completed. If the possession of money offers no advantages at all which in certain cases are greater than the advantages connected with a commodity, it is unaccountable that a possessor of money should not be willing to buy for money at all times and in all cases, if need be at any price, and also that a seller should ever be found willing to part with a valuable good for money, the

¹ And if the conditions required for this exchange are also present in the receiver.

² And if there is nothing to prevent it on the side of the seller.

possession of which presents no advantages to him—in other words, that has no value for him.

For the same reason, it is also unaccountable that we should not always try to invest our money at once, in order to prevent the loss of interest attending possession of money.

In the way Elster puts the motives for the case of exchange of commodities he can explain everything¹: he can explain if a transaction will take place or not, and if it takes place, between what commodities.

But as he puts the motives of a purchase for money, he can only indicate *what* commodity will be bought *provided it has once been established that some purchase will be completed*.

But whether a purchase will be completed at all, and in what case it will, and in what case it will not, is by no means explained by Elster's exposition of the motives.

His assumption that we do not assign any value of its own to money founded on the services that it does to us, would have to lead to the conclusion that we should wish to make at once effective that money which has no other value for us than that we can buy commodities and services for it, by concluding the bargain without delay. It would be utterly unaccountable if we should defer the purchase even for a moment. There would always only be buyers, scarcely ever any sellers in the market (viz. only those who immediately want to buy again).

Elster's train of reasoning leaves the whole system of exchanges for money completely unexplained.

¹ Assuming that the motives of the other party are also given.

CHAPTER IX

AN APPLICATION OF THE THEORY OF THE MARGINAL UTILITY TO THE DOCTRINE OF THE VALUE OF MONEY

LUDWIG VON MISES

IN his *Theorie des Geldes und der Umlaufsmittel*, Ludwig von Mises has made an interesting attempt to explain the value of money by the aid of the same foundations as, according to the "Austrian" theory of value, determine the value of commodities (in general). This attempt is not only interesting for the theory of the value of money, but for the theory of marginal utility itself it would be also of great importance if it should appear that the explanation of the value of money could be incorporated with it. For it will always remain a serious shortcoming of the theory of marginal utility, which must detract from the force of its argumentation—however great it may be for the rest—if it should be impossible to explain the laws governing exchange in the important chapter of economic science which deals with money, on the basis of its fundamental principles.

In my opinion, Prof. von Mises has taken the only way possible to achieve his purpose. Some difficulties have, however, arisen in this way, to which is due the fact that Prof. von Mises, although his indication of part of the features of the problem is perfectly correct, has, in my opinion, not succeeded in arriving in the end at a logical explanation of the value of money. Why the value of money lies logically cramped at every moment at a definite level is the question the answer to which forms the goal of the way taken by Prof. von Mises, but we are not able to reach this goal when we are guided by his theory.

A first difficulty Prof. von Mises has perhaps created for himself; it remains, however, an obstacle in his further

considerations. It refers to the classification of money among the different species of commodities.

In the fifth chapter, § 1, Prof. von Mises tries to show that money is neither production good nor consumption good. The assertion that money is not a consumption good naturally presents few difficulties. His further thesis that it is not a production good seems, however, to meet with objections. In the end these difficulties arise again from the definition given by Prof. von Mises of the conception production.

Prof. von Mises begins the paragraph in question by mentioning the division of economic goods, as Menger gives it—viz. the division into goods that serve human needs directly (consumption goods) and those that serve them indirectly (production goods). It is remarkable that Prof. von Mises raises no objections to this division, but nevertheless declares that those who, solely from the fact that money is not a consumption good, conclude that it is a production good, take things too much for granted. But Menger's division leaves no other alternative. For if a good is not directly serviceable to us, it must be indirectly serviceable. According to Menger's division, this implies that if it is not a consumption good, it is a production good.

Prof. von Mises, however, adopts the classification of Knies, who distinguishes consumption goods, production goods, and media of exchange. He dissents from Helfferich, who opposes Knies' argumentation, according to which purchase-sale is not production, but transfer of commodities. Prof. Helfferich says in this connection that with as much reason the classification of the means of transport among the production goods might be disputed.

Prof. von Mises conjectures that Prof. Helfferich has been misled by the double meaning of the word *Verkehr* (traffic).

On p. 57¹ Prof. von Mises says:

"Practically the part assigned to man in production consists merely in this, that he combines his natural force with the original force of nature in such a way that from the co-operation of these forces the desired product must result according to the laws of nature. *All that man performs with reference to production is the moving in space of the things, all the rest is done by nature.*"

¹ Of second edition.

The words I have italicised seem to me to contain the less felicitous definition of production. Moving in space has only incidental significance in economic production. Of essential importance for economy is only that things are rendered useful. If we do not move economic goods in space, but render them useful, we produce. If we do move them in space, but do not enhance their usefulness, there is no production. When a contractor builds a house, it is not the essential part of his production that he moves the bricks, but that he does so in such a way that a thing is built that has greater utility than was previously possessed by the store of materials. If he builds the house in the centre of the Sahara, the moving in space has been greater, but from an economic point of view less has been produced. If, however, a contractor sells a house to somebody who is going to live in it, he leaves the house in its place, but through the sale it acquires greater usefulness. This purchase-sale is, accordingly, also part of the production, the money is the mediator, and performs productive service—it is the means of production. It seems to me that in this connection Prof. von Mises does von Böhm-Bawerk an injustice by referring to his *Kapital und Kapitalzins*, II Abt, p. 10 *et seq.* It is true that von Böhm, on p. 11, also literally speaks of “moving of material in space,” but these words should be taken in connection with what has been stated on p. 10. There it appears that they are meant as contrast : production is not *creation*, but merely transformation of things into more useful forms. On p. 130 von Böhm classes money, in agreement with what precedes, with “economic capital, *i.e.* products intended to serve for further production.” Besides, on p. 132 von Böhm speaks of “money, the instrument of trade”—an expression which, in my opinion, represents the nature of money in the tersest and at the same time the most efficient way.

Prof. von Mises' less felicitous definition of money has had an injurious influence on his theory of the value of money.

His value theory is chiefly as follows : ¹

The value theory of money must trace the objective value

¹ P. 100 *et seq.*

in exchange of money back to the moment when the commodity, operating as money, did not yet act as money, hence to the moment when it had value only for another reason. Originally, therefore, this commodity had value because it served other purposes. Then there came a moment when this commodity was also used as a medium of exchange. Starting from this moment it was valued first of all because it was useful in the usual sense, and, in addition, because it could also be used as a medium of exchange.

“Just as that original starting-point of the value of money is nothing but the result of subjective valuations, the present value of money is nothing else.”¹

The fundamental principle according to which the subjective valuations are also value-determining factors for money is what confers its great significance on Prof. von Mises' theory. Added to this, that he starts from the point at which the commodity operating as money originally already possessed value for another reason. But that, nevertheless, Prof. von Mises has not solved the value problem is, in my opinion, clearly revealed in his discussion of Helfferich's criticism immediately following, which criticism Prof. von Mises has not been able to invalidate.

Helfferich considers the total of a nation's wealth, and then finds that the conception of marginal utility rests on the fact that a given quantity of commodities satisfies only a definite need. If need and supply are given, the marginal utility of this supply is fixed, and determines the value of the commodity in relation to the other commodities. This is valid at least for commodities in general—not, however, for money. The utility of money depends on the value of money; the higher the value of the money unit, the greater the quantities of commodities that can be turned over by the same sum of money. While for all commodities the value results from the marginal utility of a given quantity, and in general is the greater as higher degrees of marginal utility are excluded through the restriction of the quantity; but the utility the quantity yields is not enhanced by an increase in its value—the utility that a given quantity of

¹ P. 101.

money yields could, by rise in the value of the money unit, undergo any corresponding extension.¹

Prof. von Mises considers the flaw of this reasoning to lie in the fact that Prof. Helfferich regards the marginal utility of money from the standpoint of the whole community, and not from that of the individual. Every valuation should proceed from a valuing subject.

It seems to me that Prof. von Mises' argument has not refuted the essential point of Prof. Helfferich's criticism. It was undoubtedly the latter's intention to point out that if the value depends on the marginal utility of money, this marginal utility depends at the same time on the value. This point is not refuted, is not even touched, by the fact that the individual valuations proceed from the separate subjects. For the joint individual valuations then determine the value of money, and this value determines again the marginal utility. If these individual valuations are again supposed to be based on the marginal utility, Prof. von Mises reasons in a circle from which, so far as I can see, he does not succeed in freeing himself.

It is perhaps possible to ascertain what were the reasons why Prof. von Mises' attempts to include the theory of the value of money in the theory of the marginal utility could not succeed.

First of all it should be remembered that I pointed out before that Prof. von Mises—in my opinion erroneously—did not rank money with the production goods. This classification ensues, however, from his insight into the nature of money, from his answer to the question, On what does the value of money rest?

In my opinion he is not consistent when answering this question. Thus he says on p. 75 :

“The subjective money value always leads back to the subjective value of the other commodities obtainable in exchange for money; it is a derived conception.”

Through this statement Prof. von Mises himself adopts, indeed, the standpoint of the followers of the Anrecht

¹ Von Mises refers here on p. 102 to Helfferich, *Das Geld*, p. 578.

theory, such as Bendixen. And from this point of view there is no independent marginal utility of money. The money of the derived conception has only a derived marginal utility : that of the commodities it buys. From this point of view every application of the theory of marginal utility is foredoomed to failure. For if the money buys more commodities (has greater value in exchange), the marginal utility is greater, and if the marginal utility is greater, the value in exchange is higher. We are then in the vicious circle. According to this explanation, money might have any value in exchange. Why the value in exchange at a given moment is what it is, and is not twice as high or twice as low, cannot be explained in this way.

In other places, however, Prof. von Mises pronounces a different opinion. This is found—as might be expected—where he sets forth the gist of his theory of the value of money. Thus he says on p. 87 :

“ Not only demand and supply for industrial purposes, but also demand and supply for the service of medium of exchange, influence the value of gold from the moment that gold had begun to be used as money.”

Here a *service* as medium of exchange is explicitly spoken of, which influences the demand for gold, and it therefore seems justifiable to assume that Prof. von Mises has undoubtedly realised that money has a value in itself resulting from this service. However, what is said only two pages later is in glaring contradiction to this.

“ As was explained before, the subjective value in use of money, which coincides with its subjective value in exchange, is nothing but the anticipated value of the commodities that may be bought for the money; its magnitude may be determined by the marginal utility of the commodities that may be received in exchange for the money.”

Here it would be inferred that Prof. von Mises does not assign any *services* to money, for he assigns no value of its own to money.

In contradiction to which, however, it is stated on p. 88 :

“ Its value rests then exclusively on its function as general medium of exchange.”

There is something equivocal in this view of the nature of money—a constant wavering between on one hand the doctrine of the derived value, which is assumed in the Anrecht theory, and on the other hand the acknowledgment that, in some way or other, money fulfils services—has a function. Yet Prof. von Mises' reasoning conveys the impression that the influence of the Anrecht theory predominates. In any case, any further discussion, any further explanation of these services, of this function, is wanting.

In my opinion it is owing to this influence of the Anrecht theory that Prof. von Mises has not been able to attain the end in view with the theory of marginal utility.

CHAPTER X

THE RELATIVE PROBLEM : THE CHANGES IN THE PRICE LEVEL

HELFFERICH

PROF. DR. KARL HELFFERICH's work entitled *Geld und Banken* has already been mentioned in connection with his criticism of Prof. von Mises' attempt to find a solution of the problem of the value of money.

The importance of Prof. Helfferich's work, however, justifies a closer discussion, in particular because of the striking way in which he comes very close to the solution of the problem, and the no less remarkable way in which, just before reaching the solution, he turns off into another road, which in my opinion does not lead to the goal.

In some terse and significant remarks Prof. Helfferich first of all rejects the Anrecht theory. He writes on p. 553 :

" If money were not in itself a good, but only a sign or a claim to real commodities, then it must be possible to get definite commodities in definite quantities of definite qualities for this money ; for a claim or a representative or a symbolisation of any kind whatever is not conceivable, if not that to which the claim refers, that for which a representative stands or that which is symbolised, is definite.

" If we deprive the sign of its meaning, that it constitutes a definite claim on definite persons to definite things, and leave it only the contents, that it serves to obtain undefined things in undefined quantities and from undefined persons, not only money, but every commodity put on the market, becomes a sign."

That money has utility in an economic sense is demonstrated by Prof. Helfferich on p. 556 :

" Objects of need are by no means only those things which are directly serviceable to supply a human need, but, besides, also all those things which indirectly are applied to the production and

supply of consumption goods in the usual sense. . . . But also money, which has the important task to be the mediator in the transference of goods, conveniences and services from one person to another, belongs to this class; as in the process of production it brings together the instruments of production and labour, as it conveys the finished goods from the hands of the producers to the consumers, it serves to supply a need in the same way as all the other kinds of production goods."

At the bottom of the same page it appears that Prof. Helfferich realises that the value of money is also derived from the utility pointed out by him.

"On the other hand, all the other goods share the property with money that they possess a value not through their mere existence, through their substance, but only through this, that by fulfilling definite economic functions they produce, directly or indirectly, the satisfaction of human needs. Nay, the precious metals themselves, as soon as they are employed as money, derive their value just as well from their monetary function as from their practicability as raw material for objects of ornament and utensils."

When we read this, we are led to expect that Prof. Helfferich will now try to find the solution of the problem of the value of money by the aid of the theory of marginal utility.

Accordingly, greater disappointment is hardly to be imagined than is experienced when, twenty pages further on, it is seen that Prof. Helfferich abandons his own standpoint completely, and adopts an entirely different course, in consequence of an only seeming difficulty—in which it appears at the same time that he is no adherent of the theory of marginal utility.

He writes on p. 577 :

"While this theory (the theory of marginal utility) tries to determine the exchange value of commodities from the degree of their utility for individuals, the degree of utility of money for individuals is inversely quite obviously given by its value in exchange. Here we meet with the same phenomenon as in paragraph 2 in the discussion of the 'fundamental value' of money. There we saw that money can be used as medium of exchange only because it has value in exchange; here we observe that also the degree of usefulness of money is determined by the quantitative element of the exchange relations between money and commodities. *i.e.* by the exchange value of money."

It is certainly remarkable that the man who on p. 556 so logically argues that the value of money is derived from the fact that it performs definite economic functions, and very justly remarks that, inversely also, these economic functions are again determined by the value, does not follow the only consistent way, and try to explain this mutual dependence, taking care not to get into a circular reasoning. Instead of this, he casts overboard the results reached on p. 556, and only regards the utility which money owes to its value in exchange.

And from this moment Prof. Helfferich is confronted by serious difficulties, for at once he also renounces the rest of the insight attained by him. For it also appeared on p. 556 that he saw that the usefulness of money was based on the services that it renders—viz. where he said (as quoted above) :

“As in the process of production it brings together the instruments of production and labour, as it conveys the finished goods from the hands of the producers to the consumers. . . .”

This standpoint has been entirely abandoned in the last sentence of p. 577 :

“The marginal utility of money in any given individual case is therefore the smallest utility that can be attained by means of the commodities that can be obtained for the available money, or must be given away for the required money; and this marginal utility has already a given value in exchange of money as condition, so that the latter cannot be derived from the former.”

Here Prof. Helfferich has simply fallen back on the Anrecht theory, which was originally rejected by him—to the theory which teaches that money has no utility of its own, but that its usefulness is determined by that of the commodities and services that can be bought for the money.

The promise contained in the first part of Prof. Helfferich's work has not been fulfilled, owing to the subsequent inconsistencies. At the moment when Prof. Helfferich was brought face to face with the most difficult point of the value theory of money—the interdependence of the utility and the value of money—he cast overboard what insight he had attained in the money problem, and returned to views

closely akin to the very theory that can explain least to us about the problems of money.

In what precedes, Prof. Helfferich has tried to demonstrate that nothing is to be gained by the application of the theory of marginal utility to the problem of the value of money. If, with Prof. Helfferich, it is said that the marginal utility of money is the marginal utility of the commodities that can be bought for it, I concur with this view. It seems perfectly true to me that in this case the theory of marginal utility cannot be of any service to us, as also appeared above in the discussion of Prof. von Mises' theory. But in my opinion the starting point is not correct, and it seems to me that the marginal utility of money is indicated in another way.

However—supposing that we were able to adopt Prof. Helfferich's starting point—I agree with this conclusion. The question is now, however, how Prof. Helfferich himself explains and determines the value of money.

On p. 563 we find the following :

“Accordingly, the problem of the value of money and its variations comprises two essentially different questions :

“(1) The question of the actually existing relations of exchange between money and the other objects of exchange. As the exchanges of money for other commodities are denoted as ‘purchase,’ and the money equivalent as ‘price,’ the question of the amount and the variations of the general purchasing power of money and the general price level is identical with this first side of the problem. The question is exclusively of a *statistic* character; it refers to the establishment of the actually existing prices (in the widest sense) and their changes.

“(2) The question of the grounds on which the determination rests of the variations of the exchange relations existing between money and the other objects of exchange. The question bears an *analytical* character, it requires the clear insight into the causes of certain facts and processes in trade.”

It is remarkable that Prof. Helfferich, in reference to the first, the statistical problem, speaks both of the *amount* and of the *variations* of the “general purchasing power of money.” In reference to the second, the analytical problem, he speaks only of the “grounds on which the determination

rests," of the *variations* in the exchange relation between money and other objects of exchange.

Thus he entirely ignores the existence of the problem of the value in exchange of money at a definite moment, and, with the exception of the critical part of his further reasoning—where, as was set forth above, he rejects the applicability of the theory of marginal utility to money—he analyses exclusively the causes for modifications in the price level.

This procedure is disappointing. At bottom it leads us back to the method of considering the problem of the earlier writers. It is true that in Prof. Helfferich's further discussions valuable considerations are found on a number of circumstances that may modify the supply of money and the demand for money, but it is not possible to combine these different strands into a theory which determines and explains the value in exchange of money at a definite moment.

CHAPTER XI

THE INCOME THEORIES

§ I. FRIEDRICH VON WIESER

SOME of the writers who, in my opinion justly, have endeavoured to bring the theory of the value of money into connection with the theory of marginal utility, which explains the value of the commodities in general, have tried to attain their end by examining the marginal utility of the *money income*. The first important representative of the income theory of the value of money was Friedrich von Wieser, who has laid down his views in his *Theorie der gesellschaftlichen Wirtschaft* in the *Grundriss der Socialökonomik*.

On p. 311 Prof. von Wieser defines immediately :

“ the value of money as the value which belongs to the money unit in virtue of the relation which it bears to the unit of utility.”

So far agreement with Prof. von Wieser's theory is possible with regard to the subjective value of money. But it appears immediately that in Prof. von Wieser's view the utility of money is not inherent in the money itself—that it does not ensue from the services that it performs for us, but that it derives its value from what we can buy for it. On the assumption that the utility of money is derived from the commodities that are bought for it, Prof. von Wieser tries to construct a quantity of money which is determined in a definite way. The last unit of it determines the marginal utility, or, expressed more accurately, what can be bought for this last unit determines the marginal utility. And when once the marginal utility is known, the theory of marginal utility is able to determine and explain the value.

The quantity of money which Prof. von Wieser constructs is the individual money income that buys the commodities. On the same page he writes :

" If a nation's social conditions are stationary, showing neither progress nor decline, the money incomes cover exactly the value of the articles of consumption necessary for the households, and thus we arrive at the shortened expression that under these circumstances the *general price level is determined on one side by the sum of the newly procured articles of consumption, and on the other side by the money income.*"

The way in which Prof. von Wieser supposes the marginal utility to be formed appears on p. 288 :

" In order to estimate the subjective exchange value of money, we start from the prices that rule in the market and that are exactly known to us. In agreement with these the plan of the household is arranged in such a way that the margin of the expenses is extended as far as it is in any way possible with the available resources. The value in use of those goods that, according to the given circumstances of an individual, fall within the margin of the expenses, gives to the individual in question the standard for the subjective exchange value of money, or, expressed more briefly, the marginal utility of the household determines the subjective exchange value of the money unit."

It has been objected to Prof. von Wieser's theory that the theory of marginal utility aims at determining and explaining the value in exchange from the marginal utility, whereas Prof. von Wieser does not reach the marginal utility until the participant in the exchange transactions is able to find out this marginal utility, being already fully equipped with a complete knowledge of the existing prices. Also various writers who are themselves advocates of the income theory of the value of money admit that this difficulty has not been obviated by Prof. von Wieser. In accordance with this, the theories of these writers are all characterised by their attempts at improving and completing the income theory, preserving, however, the fundamental principle as this was set forth by Prof. von Wieser.

In the explanation of the determination of the value of money, the income theory meets, however, with another difficulty, which characterises not only the particular theory of Prof. von Wieser, but also the various modified forms. For at bottom this theory is not able to give the final answer concerning the marginal utility of the last part of the *money* income, but of the income. It does not especially refer to

the *money* income, but to the income in whatever form it be. The same theory that deals with the marginal utility of the income would have the same validity if no use were made of the services of the medium of exchange in exchange transactions—in other words, if there were no money at all. After all, it does not determine the marginal utility of the *money income*, but it determines the marginal utility of what can be bought with the money income at the given exchange rates. Perhaps this fact appears most clearly by laying before this theory the question why, with the actually existing quantity of money, the incomes, as well as the price level, should not be twice as high as they are, or half as high as they are. For then the marginal utility of the money income has remained exactly the same.

The income theory cannot explain why both incomes and price level are not higher or lower than they are. Provided that they vary both in the same proportion, any variation is possible, and every variation would leave society completely indifferent. No counteracting forces would be called up in case of such a variation, as is always observed with other economic phenomena.

The income theories bring the money incomes and the prices of goods into connection, and endeavour to show that, to a definite amount of the money incomes, corresponds a price level that must conform to it. One could just as well start from a definite price level and show that corresponding money incomes must conform to it. But both starting-points leave us in the dark with regard to the question why money incomes and price level are not both higher or both lower.

Prof. von Wieser undoubtedly faced this difficulty when he set forth as his opinion that the amounts of the money incomes are *historically* to be explained when we go back to the time when money was used as such for the first time, hence to the time when the value of the metal of which money was made was determined by the utility that the metal already possessed, resulting from other causes.

He says on p. 312 :

“ As to the point how many money units are used to express

the unit of utility, nothing can be said beforehand; it may be many, it may be few, and, in fact, the money value shows exceedingly great deviations at different places and different times. The decision is always made historically; in every period of time every nation finds a money value formed before, and it forms it further according to the given circumstances in *historical continuity*."

I fear that this historical development is not able to provide the solution why money incomes and prices are at present at the level at which they are, and not higher or lower. On the contrary, when we say that the present level has been reached as the result of the historical development of a level of earlier times, this must be received, not as an explanation, but merely as a historical communication. The explanation could only be given if we could also ascertain why this historical development has been such that with the present quantity of money the incomes and the price level must be as they are, and cannot be either higher or lower.

There is another doctrine of the value of money which tries to find a solution by the aid of the theory of marginal utility, albeit not via the money incomes, and which also introduces the historical development to account for the present position of the price level. I refer to Prof. von Mises' theory, which has already been discussed. But there, too, it could only be pointed out that a reference to the historical development is only the communication of facts from history, and is not an explanation of these facts.

When, in the historical development, the exchange proportion of other commodities among themselves has changed, the theory of marginal utility can explain this by the fact that the marginal utility of these commodities among themselves was modified for the different individuals. We cannot, therefore, explain the present level of money incomes and of commodity prices, as Prof. von Wieser does, by saying that it must appear historically "how many money units represent the unit of utility." It must hold also for money that this historical development itself has taken place in connection with the modifications of the marginal utility of the money for the different individuals on the one

hand, and of that of the goods for the different individuals on the other hand.

Why, with the present quantity of money, money income and commodity prices could not lie at another level cannot be explained historically by the aid of the income theory.

§ 2. G. M. VERRIJN STUART

G. M. Verrijn Stuart is one of the followers of the income theory of the value of money who has occupied himself with the objection advanced against this theory that it should have got into a circular reasoning, and who has tried to invalidate this.

In his *Inleiding tot de Leer der Waardevastheid van het Geld*, p. 29, he argues as follows :

“ Now on application of this theory to money the following difficulty arises. On one hand it is said that the value attached by somebody to some good functioning as money, depends on the importance of the need the fulfilment of which is dependent on this good, hence on the importance of the goods that he will receive in exchange for the good functioning as money ; on the other hand it follows from the price law based on the theory of marginal utility that the price is the result of subjective valuations with regard to the exchanged goods. Since the significance of money depends on what can be obtained for it—*i.e.* on a price—the proportion of exchange of money and other commodities cannot be explained from a comparison of the previous valuation of the money and the other commodities to be given in exchange for it, as in this case the price would be explained from the price.”

Prof. Verrijn Stuart tries to overcome this difficulty by the consideration that the estimation of the subjective value in exchange of the money at our disposal does not *directly* follow from the price level. The preliminary valuation is, indeed, made in connection with the price level known to us, but this valuation is not final. He writes on p. 34 :

“ The basis of this estimation with reference to money is certainly formed for a great deal by the prices known by experience, but it is clear that this basis can never be complete. For prices are subject to continual change ; new commodities appear upon the market, while, besides, he who makes a valuation of the

money at his disposal—*i.e.* makes up his budget—does not know all the prices. In all these cases, which are the order of the day, an appeal to the actually known (but variable) prices is ineffectual; accordingly, in the formation of a subjective valuation of money these prices are only partly followed."

Prof. Verrijn Stuart then gives a scheme indicating the utility that a person who has a definite quantity of money, *e.g.* F. 20, at his disposal assigns to different quantities of different species of commodities, and, further, the presumable price of these commodities. From this scheme he concludes which particular goods this person will choose for his money.

He writes on p. 35 :

"In order to simplify the example as much as possible, I will assume that the person who can dispose of F. 20 only needs goods of four kinds—*a*, *b*, *c*, and *d*—and that he can use three specimens of the first and second kinds, and two of the third and fourth kinds, the utility of which, measured by an ideal standard, is denoted by a definite figure. Then I arrive at the following scheme :

Species of goods	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>
Probable utility . . .	8 6 3 0	5 2 1 0	4 3 <hr/> 0	2 1 <hr/> 0
Probable price . . .	F. 10	F. 5	F. 1.50	F. 1

"Starting from these data, the economic subject now tries to find the most profitable way of spending his money. If he took only the presumable utility into account, he would first try to acquire 2*a*, before proceeding to species *b*. This, however, is not profitable to him; for 2*a* costs F. 20, and promises a utility of 14, while *e.g.* 1*a* + 2*b* costs likewise F. 20, and yields a utility of 15. After due consideration, he will arrive at the following combination :

$$1a + 1b + 2c + 2d.$$

"The utility is $8 + 5 + 7 + 3 = 23$, the price F. 20. Hence the preliminary arrangement of the budget looks like this. As it is, however, based on the presumable prices of *a*, *b*, *c*, and *d*, it is very well possible that the economic subject coming to the market sees that circumstances do not answer to his expectations.

"I will assume that in the supposed case commodity *a* appears

to cost F. 6, *b*, *c*, and *d* appear to cost the amounts already anticipated, *i.e.* respectively F. 5, F. 1.50, and F. 1. At once the man will change his mind. Now the combination $2a + 1b + 2c$, utility 26, price F. 20 is possible."

This ingenious scheme and the precise interpretation of the income theory of the value of money are so interesting that there was every reason to quote the above reasoning in full.

The very precision of the exposition renders it possible to indicate exactly where the income theory gives rise to difficulties. I think that the difficulties lie in the sentence: "I will assume that in the supposed case commodity *a* *appears to cost* F. 6, *b*, *c*, and *d* appear to cost the amounts already anticipated, *i.e.* respectively F. 5, F. 1.50 and F. 1." The sentence would convey the impression that what the commodities cost is already objectively given—that it is something that would be, as it were, independent of the participants in the exchange. The advocates of the income theory, who base their views on the theory of marginal utility, will, however, be the last to assume this. However, it appears exactly from Prof. Verrijn Stuart's close circumscription of the income theory that, for the determination of the marginal utility of the money income, no fixed objective basis is to be found in the way that the adherents of this theory imagine. For the prices of the goods for which the money income is spent are determined on the one hand by the person who spends the money income, and on the other hand by the person who wants to obtain a money income himself by the sale of the commodities. This leads us at the same time to a second objection to the income theory: the additional amount which the spender of the money income pays for the commodities increases the money income of the seller of the commodities by the same amount.

If, therefore, at a given moment the total money income of the joint members of a community could be represented by a certain amount, there can by no means be placed over against this a quantity of commodities fixed beforehand, which this income will buy. On the contrary, the quantity of commodities which this income will buy is not determined

until the prices have been fixed between buyers and sellers. If they come to an agreement at a higher price level, the new total money income of the community is also at once higher, in correspondence to the prices of commodities. There is not first a definite money income which buys a definite quantity of commodities, but there is a money income that buys an indefinite quantity of commodities, and as soon as a price is agreed upon, the new money income and the prices of the commodities are simultaneously determined. In every transaction of this kind a price of the commodities and a new money income are fixed simultaneously. It is therefore not permissible to start from a definite money income and definite prices of commodities, for both are determined by one and the same factor. This factor is : on what conditions are people willing to exchange money for goods, and goods for money? In other words, what is the value in exchange of money? Thus at the conclusion of the discussion of the income theory of the value of money we are still confronted with the problem which the propounders of this theory thought that it could solve, but for the solution of which, in my opinion, other elements will have to be introduced.

Prof. Verrijn Stuart adduces another forcible argument in his exposition, which we do not find in other writers who follow the income theory. He writes on p. 37 :

“ The statement that the earlier prices are the sole basis for the subjective valuation of money would lead to a circular reasoning ; but this vicious circle is obviated by basing the subjective valuation on the expectation about the prices in the future, in which expectation possible modifications are taken into account. The valuation then takes place in essentially the same way as that of a merchant who puts an entirely new article on the market, and very certainly assigns a subjective value in exchange to this article, though it has never yet been exchanged for money or other commodities.”

This argument, indeed, places the income theory on another level. If we base the subjective value in exchange on the prices which will presumably hold in the future, there is a subjective value in exchange of a certain amount, and in accordance with this a marginal utility of a certain amount.

In this way a marginal utility of the money income would have been determined.

It seems to me, however, that this reasoning, however plausible it may appear, contains a dangerous incompleteness. And when we define the matter more closely, we again get into the old vicious circle. The closer restriction is this, that so long as our judgment is based on presumable prices in the future, that which is reached is only the presumable subjective value, and that, in accordance with this also, only the presumable marginal utility of the money income is found. The final subjective valuation cannot be formed until we know definitively how we can exchange commodities for our money, but when we know this definitively, the value in exchange of the money is also already fixed. And it is exactly this value in exchange that we try to determine and to explain.

Prof. Verrijn Stuart's argumentation is, however, the more plausible because in general our valuations are based on the utility that we *suppose* that we shall derive from the goods. Why should we, therefore, in this case not be allowed to base our assumptions on the presumable future prices? ¹

The question formulated in this way admits of two answers. For on the one hand it must be readily admitted that if with a money income commodities can presumably be bought for certain prices, a subjective value in exchange will be ascribed to this money income which will be estimated in connection with these presumable prices. On the other hand, we must reach a clear understanding of the conception of subjective value in exchange if we do not wish to lose our way altogether. For why, after all, do we ascribe subjective value in exchange to a thing? The reason is that we are justified in expecting that others will accept the thing in exchange. If the merchant of whom Prof. Verrijn Stuart speaks appears in the market with an entirely new article, this article, the price of which is by no means settled, has, all the same, subjective value in exchange for him, because he expects that others will wish to receive it in exchange.

¹ See for the conceptions value in use and subjective value in exchange, von Böhm-Bawerk, *Kapital und Kapitalzins*, Zweite Abteilung, III Buch, V Abschnitt.

But why is he justified in expecting this? Because he thinks that he may assume the article to have value in use for the purchasers. What subjective value in exchange may he now assign to this article? The answer to this must be: this will entirely depend on the value in use that he expects the article to have for its buyers. If he must assume the article to possess only a small value in use for the eventual buyers, the subjective value in exchange that he assigns to it will also be low. If he can expect the article to supply an urgent need of the buyers, he will be justified in assigning a high subjective value in exchange.

This holds good for the new, still unknown article. If an article has once become universally known, and if there is a fair demand for it, the merchant need not trouble his head with speculations about the question what need of the consumer this article supplies, after all. He will estimate the subjective value in exchange in connection with the established prices, only *allowing for presumable modifications* in the market price. The *real* basis for his estimation of the subjective value in exchange has now apparently become lost, because he has found a much easier basis in the established market price. This, however, does not detract from the fact that the real basis remains invariably valid, even though a simpler *standard* has been found in the market price. At once the real basis comes to light again, when the circumstances are modified, and there is occasion to suppose that the value in use has changed. A manufacturer of fancy-goods knows on what he bases his assumption when he takes *presumable modifications* in the market price into account. He considers if the value in use of his articles has undergone, or will undergo, modifications with the purchasers. The basis of the established market price is a *standard* chosen for convenience sake; the consideration of presumable modifications always again brings the real basis to the fore: the expected value in use for the purchasers. Now it would seem as if an exception would have to be made with regard to money. For it is often denied that money has any value in use at all. But it seems to me that the assertion that money or the money income has only subjective value in exchange takes us no

further; the difficulty of the problem is merely shifted. For then the money income of A has only subjective value in exchange, because he expects that he can buy commodities from B at a certain price. B, however, is only willing to sell them because he assigns subjective value in exchange to the money income to be acquired in this way, for he assumes that C will consent to sell commodities at a certain price, etc., etc. There is never an end to the expectations and assumptions, and the price level would be exclusively determined by the expectation or the estimation of a future price level. For B will only part with his goods at a price that furnishes him with a money income, with which he can buy commodities which C will be willing to part with in order to obtain a money income, etc. If the expectations—without for the rest being founded on anything else but expectations of expectations *ad infinitum*—rise, both the prices of commodities and the money incomes rise, and there would not be a single motive for a reaction in this continual rise, unless, again without any real grounds, the expectations again fell.

This is the course of events, if a subjective value in exchange of a commodity is not eventually based on the estimation of the value in use which the commodity will have for others. Of course, even then only an estimation is possible. But when the expectation has risen too high, a correction necessarily follows, because the purchasers of the commodity will only be willing to buy at a lower price.

If we do not assign any value in use to money, our idea of a certain stability of the value of money is also deprived of every foundation. When the future course of money incomes and prices of commodities is based only on expectations of this course, without definite factors ever applying the necessary corrections, there is no reason whatever why we should not expect the money incomes as well as the prices of commodities to be twice as high after a year. The only thing required to bring this about is that it is expected. And as soon as it is expected that the prices of commodities will rise, the subjective value in exchange of the money unit (or of the money income unit) has diminished, the prices

of the commodities have risen, as well as the nominal amount of the new money income. And there is no reason whatever why everything should not continue at this level, unless—again without any grounds—the expectations should change either in one or in the other direction.

It should be pointed out here that, in contrast with several other followers of the income theory of the value of money, Prof. Verrijn Stuart *does* attribute a certain value in use to money. He says on p. 58 :

“The demand for money is identical with the striving to obviate the drawbacks of barter by means of a generally negotiable good, and thus to obtain a larger income than would have been the case without it. The demand for money is, therefore, determined by the possible use of money, *i.e.* by the total of the exchange transactions to be completed by means of money in connection with the degree of economy practised in the use of the medium of exchange.”

In the first sentence it is clearly expressed that Prof. Verrijn Stuart sees that a certain utility is derived from the use of money, for a larger money income is obtained by means of it. It would then, however, follow from this that there are always people who do not demand money merely because it has subjective value in exchange, but because it affords a utility to them, which finds expression in a larger income. Formulated in this way, the value in use is analogous to that of (other) production goods.

In the second sentence the use of money is brought into connection with “the total of the exchange transactions to be completed by means of money.” In how far this total might actually serve as an explanatory basis is treated in the discussion of other writers.

The contents of the first sentence confer a signification on money which renders it possible to explain the value of money, and to surmount the difficulties which the income theory left unsolved.

§ 3. ALBERT AFTALION

In his *Monnaie, prix et change*, Albert Aftalion gives an exposition of his income theory of the value of money. He precedes it by a critical discussion of von Wieser's theory.

It appears that for the greater part, *i.e.* for the part that he calls the quantitative side, Prof. Aftalion concurs with Prof. von Wieser's views. Also he considers that the difficulty of the circular reasoning is overcome by Prof. von Wieser.

He writes on p. 166 :

" Through his historical explanation of the price level, Wieser implicitly answers the objection that has been addressed to him, that his theory reasons in a circle, since on one side it considers the subjective estimations of the value of money to depend on its purchasing power, *i.e.* on the existing price level, and on the other side it considers the price level, the value in exchange of money, its purchasing power, to depend on the subjective estimations of the value of money. In the first ages of the history of money it derived its value directly from its utility as commodity. This direct utility of the metal chosen as money gave rise to the establishment of the first price levels. But, gradually, the value of money detaches itself from the utility of money as a commodity. Money becomes more and more purchasing power. Its value, however, is rooted in the past. It is a value derived from its previous value. It is subjected to a series of successive variations, the prices of yesterday influence the subjective valuations of money, and the subjective valuations, in their turn, influenced besides by the variations of the incomes, act on the prices of to-day, raising them, for instance, when the money income increases more than the quantity of commodities. The present foundation of the value of money is formed by the subjective estimations. But these subjective estimations in their turn, which on one side depend on the prices of yesterday, also depend on all that affects the relation between the nominal income and the real income."

When I once more summarise the objections I have to the theories of Prof. von Wieser and Verriijn Stuart, I base my views on the words quoted from Prof. Aftalion.

My objection is, that the " subjective estimations " of which Prof. Aftalion speaks have no definitive basis, no final foundation. According to Prof. von Wieser, the valuations are based on the prices of yesterday, but why a purchase of commodities for money is completed at a definite price is not conclusively determined by this valuation. The prices of yesterday serve only as a basis, from which one can depart, and regularly does depart. When one departs from this basis, it is because a modification has been applied

to the valuation. Prof. Aftalion mentions one possible and *real* ground for such a modification—viz. an increase of the money income. But what is the central point of my objection is that a modification in the valuation can also take place, and can take place just as well, *without any real* ground. It is sufficient that, either on a valid ground or without any ground, the valuation is modified for a modification in the prices to be brought about. This holds good, indeed, for any exchange, also of one commodity for another (*i.e.* without money being used), but a wrong valuation is then corrected, either soon, or in course of time, because the utility of the acquired commodity is not in accordance with the price paid by means of the other commodity.

With regard to money, such a correction of the valuation need never take place, according to the teaching of the income theory, for when the spender of the income begins to pay higher prices, the new income of the seller at once becomes correspondingly higher. Hence there need never appear a correction: because the valuation has been made in this way the prices of goods have risen, and simultaneously with them the new money incomes. Every exchange of commodities, also of commodities for commodities, is founded on estimations, but these estimations rest again on the value in use of the exchanged commodities. The valuations may depart from the actual value in use, but they will always again be corrected by the real basis of the value in use. A deviation in the valuation of the money income would never be corrected, if we follow the views of the income theory.

Prof. Verriijn Stuart has, in my opinion rightly, more or less abandoned Prof. von Wieser's view of basing the prices on those of yesterday. He bases his views on the subjective value in exchange of the money income in connection with the estimated prices of commodities. But for the rest the same objection remains valid in principle.

For this reason I do not share Prof. Aftalion's opinion that Prof. von Wieser has succeeded in obviating the vicious circle in his reasoning.

If Prof. Aftalion himself had been quite satisfied by Prof.

von Wieser's historical explanation of the price level of to-day he would, it seems to me, not have felt the necessity of adding a few amplifications to the income theory of the value of money.

For his introduction of the qualitative element might, as it were, be an answer to the objection formulated by me. And it is undoubtedly meant as an answer to the objections which had already been advanced by others in other words to the circular reasoning. In his discussion Prof. Aftalion pronounces the opinion that Prof. von Wieser has succeeded in eliminating the vicious circle from his reasoning. Yet at bottom he seems not to have been satisfied, and he introduces a qualitative element. On p. 205 he writes :

"What should sooner be objected to the income theory is undoubtedly that it ignores the part that qualitative elements inherent in money itself play in the valuation of the money unit. These qualitative elements inherent in money itself existed, according to the income theory, only in early times, when the metal conferred all its value on money. But later on, when money was valued for its purchasing power, the qualitative element must be found entirely on the side of the merchandise, and consists in the utility of that which the last unit of the income can buy, according to the prices prevailing in the market. With an equal income and identical utility of the commodity, there is no difference between two individuals in their appreciation of the money unit. As their last money unit enables them both to satisfy a need of the same degree, the purchasing power of the money unit imposes the same appreciation of the money unit on them. The income of the individuals being given, and also a descending scale of their needs, the state of the prices in the market determines their valuation of the money unit."

Prof. Aftalion then sets forth that in his opinion this hypothesis is not consistent with the facts, and on p. 207 introduces the qualitative element :

"The difference between the value attached to money and that attached to commodities finds its clearest, but it is true almost pathological, expression in avarice, which makes people desire money for its own sake, irrespective of the satisfaction derived from the conveniences that it is able to acquire. But without insisting on this extreme case, it should be noted that between avarice and foolish prodigality there are, according as there is a tendency to economy or to spending, a series of gradations of different moral states, from which, with equality of income and

purchasing power of money, a great diversity in the individual valuations of the money unit must result."

I have already pointed out that the income theory of the value of money determines rather the marginal utility of the income than the marginal utility of money. It is an income theory, not a money theory. Now I fear that in the above-mentioned reasoning Prof. Aftalion has introduced an element which, as far as I can see, is not in its place in the money theory; this element might with more reason be introduced into the theory of interest on capital. His expression "a tendency to economy and to spending" seems most to point in this direction. The tendency to economy means not a higher valuation of money, but the desire to consume fewer commodities at present for the good of the future. In contrast with the miser, the thrifty man does not save in order to hoard money: he only spends money in another way than the spendthrift: he buys capital goods for it, or he lends it out to others who spend it, either consumptively or productively. The influence of the miser and that of the saver does not differ in degree, but in principle. The miser stores up the money, and thus keeps part of the money supply laid up in his treasury; the saver spends it, and uses it, directly or indirectly, just as much as the spendthrift, though other goods are bought for it.

My objection to Prof. Aftalion's argumentation can be set forth most clearly in connection with what he writes on p. 210, where he considers the valuation of money of a person with an income of 20,000 francs who saves 6000 francs as equal to that of a man who has an income of 14,000 francs and spends it all. It would be truer to regard the money valuation as equal of two persons, both with an income of 20,000 francs, of whom one spends all and the other saves 6000 francs. The only difference is that with the same valuation the one chooses a good for this money that he can consume immediately, and the other a future good.

It is therefore unaccountable how the element of thrift could influence the exchange relation between money and goods; an influence can be exerted on the exchange relation only between future goods and goods that can be consumed

at once, *i.e.* on the discount for future goods—in other words, on the interest on capital.

Altogether Prof. Aftalion has introduced three qualitative elements. On p. 209 he introduces the second element: "the diversity of the demands of individuals in exchanges." He writes there:

"Let us imagine at this moment two persons, with the same income, who have decided on the same economy, two persons who will spend in the end either their whole income, or the same part.

"One of them, however, values the money unit much higher than the other. He is desirous to derive more profit from it, comes to the market with an intention to bid lower prices. He will discuss the prices more eagerly, and give his full attention to the quality. Not waiting with his purchases for the moment that the demand is most urgent, he will withdraw if the prices do not suit him, postpone his purchases till a more favourable moment.

"The other, on the contrary, more careless, weaker, or more generous, will buy without bargaining. He will be one of those who are the cause that the consumers are said to be often responsible for the high prices; he will be answerable for the high prices of certain shops in comparison with others, he will prolong the existence of small retail dealers, who would disappear without him."

I do not think that with this second qualitative element Prof. Aftalion has introduced a factor that applies particularly to money. He gives here rather a qualitative description of two persons taking part in an exchange transaction. It must, of course, be readily admitted that a person who wants to buy commodities, and takes great pains to buy as cheaply as possible, will exercise a different influence on the prices of the commodities in money than a person who buys without troubling much about the prices. But as qualities are concerned here which characterise participants in exchange transactions, the good or bad business man can just as well be found among the sellers as among the buyers of commodities. Inaptitude of the buyer of commodities will force up the purchase price, inaptitude of the seller will result in a lower purchase price. Both the side of the commodities and that of the money can be influenced; skill in business is not a quality of money and is not a factor that accounts for the price level.

Now it may be alleged against this that numerous members of society act exclusively as purchasers, as they do not derive their income from the sale of commodities, and as they spend their income for the greater part in the acquisition of commodities. This is true, and there are many shops which are able to charge high prices for their articles because they profit by the carelessness or indifference of part of the purchasing public. But this results only in certain high prices in certain shops, and in a higher income of the tradesman. But when the latter, in his turn, buys his articles from the wholesale dealer, he will certainly apply all his skill in business. Therefore, already in the second link of the long chain of dealers through whose hands the articles pass on their way from producer to consumer, the influence of this category of ready buyers has disappeared. Accordingly, it is an influence that at most will cause the prices at some places to deviate from the normal price level of the moment. But it by no means determines and explains the price level in normal circumstances.

Finally, Prof. Aftalion introduces a third element, which in my opinion is of an entirely different character from the first, and which is without question a factor in the determination of the value of money. He writes on p. 213 :

“ To the two qualitative elements which precede, and which refer to the characters of the individuals, to the greater or less exigency in the exchange, greater or smaller tendency to thrift, is added a third : the expectations concerning the future value of money. What people suppose they can obtain for the money in the near future has a great influence on what is expected at the present day.”

This is a factor that differs essentially from the others introduced by Prof. Aftalion. The element of the greater or less thrift we could not accept for the theory of the value of money. If many are thrifty, few extravagant, the proportion of exchange of future goods with regard to the goods of immediate use will be modified, and this in favour of the future goods. Nor did the element of skill in business affect the value of money. If many are good business men and few reckless and indifferent, it is quite accidental whether the good business men happen to be in possession of money

or in the possession of goods. But if many expect a rise in the value of money, and, on the other hand, few a fall, the value of money will at once exhibit a tendency to rise.

Unfortunately, this factor alone is not sufficient to give us an insight into the fundamental and principal determinant of the value of money. If we know this principal factor, we can explain how and why a certain value in exchange must be ascribed to money, and we can then examine further how the expectations about the future can bring about a modification in the value in exchange which we should have to assume on the ground of the principal factor.

But the factor of the expectations for the future in itself cannot give the explanation of the value in exchange of money. Nor do Prof. Aftalion's additions to the income theory of the value of money by means of his qualitative elements explain the exchange relation between goods and money.

§ 4. VON BÖHM-BAWERK

Eugen von Böhm-Bawerk has not developed a special value theory of money. He considers money as that which in an exchange is usually the "price good," hence that which is usually offered in exchange, when the demand is directed on another economical good. If we consider only the absence of a special value theory of money, there might possibly be a reason to class von Böhm with writers like Jevons and Pierson.

But if we study his comparatively scanty remarks on money, von Böhm seems to show himself to come nearest to the income theory. In view of the great importance of von Böhm as a writer on economics, it seems desirable to me to quote the passages referring to this in full. In an article written in 1886 we shall find two of the three elements introduced by Prof. Aftalion as "qualitative elements" into his money theory almost half a century later. In the said year von Böhm published an article, entitled "Grundzüge der Theorie des wirtschaftlichen Güterwerts" in Conrad's *Jahrbücher für Nationalökonomie und Statistik* (Neue Folge,

Band XIII), in which we find on p. 527 *et seq.* the following :

" The intensity of the demand, however, is itself again determined by the co-operation of two circumstances. As such, the prevalent theory mentions : (1) the value of the commodity for the would-be purchaser ; (2) his purchasing power. The latter is more accurately expressed as the possession of means to buy the commodity, and consequently it is based on the capital and income relations of the would-be purchasers.

" Apart from a few small imperfections in detail, the first of these factors is stated quite correctly, the second essentially wrongly. Instead of purchasing power, the ' value of the price good for the would-be buyer ' would have been the right expression. It is true that in many cases, as we shall see, the two factors practically coincide, but then, in many cases they do not coincide, and then the formula of the purchasing power becomes entirely erroneous. To illustrate this I will give a few of such cases.

" In the first place, the theory of the purchasing power is not valid in cases of *barter*, in which case the prices should also be adequately explained by the general price theory. When, *e.g.*, a dealer in antiquities makes me the proposal to exchange a beautiful bust which I want to obtain from him for old coins which I have in my possession, it is obvious that I shall be willing to offer the more of my coins as price for the bust the less I care for the coins, and vice versa. Accordingly, we find here a determinant of the intensity of the demand which has manifestly nothing at all to do with my purchasing power, and which, on the other hand, is accurately covered by the determining factor given by us : value of the price good for the would-be buyer."

If I have said above that von Böhm seems to be a follower of the income theory of the value of money, it appears already from the passage quoted here that this can only be maintained with the necessary reservation. For von Böhm expresses here, with the greatest clearness, that at any rate he cannot subscribe to the original and most primitive form of the income theory. On the contrary, when he considers how an exchange comes about, he mentions as one of the factors the " value of the price good for the would-be buyer," and puts this factor in the place of the " purchasing power," the very element on which the income theory in its simplest form is based.

By way of illustration of the manner in which an exchange

comes about without there being even so much as question of "purchasing power," von Böhm then gives the example of the exchange of the bust for old coins. It is the value attached to the coins that constitutes one of the factors by which the exchange relation is determined. To use Prof. Aftalion's words: it is the qualitative significance of the coins, and not the mere quantitative element, that is embodied in the purchasing power.

Also, in exchange transactions in which the price good is money itself, von Böhm wishes to give a place to the qualitative significance of the price good in the determination of the exchange relation. For he continues:

"The same thing can also take place in *prices in money*. When, *e.g.*, in a state with paper currency a would-be buyer fears or foresees that the paper money through events of war will lose its value, the desire to get rid in time of the money, which is in danger of losing its value, may induce him to bid a higher price for a piece of land or a house. The ground for the higher bid lies evidently here neither in the value of the house, nor the piece of land, nor in the degree of purchasing power, but merely in the smaller value which the would-be buyer sets on the price good paper money."

This is one of the qualitative elements which we have also met with in Prof. Aftalion's work, and which we have admitted there to constitute one of the factors that determine the value of money. I then pointed out, however, that this factor can have no independent validity. Expectations about the future value of money undoubtedly play a part, but we lack the full insight into the significance even of this particular factor, if we cannot explain what, apart from the future value, determines the value of money to-day.

The second of the three factors mentioned by Prof. Aftalion is found in the continuation of von Böhm's discussion.

"It is, further, a well-known fact that careless people, spend-thrifts, etc., do not seldom like to throw away money lavishly on the most superfluous things in the world—expressed in our technical language, that they develop a very intensive demand for a great many things that happen to come in their way. On what is this intensity based? Certainly not on the high subjective value which the commodity has for them; for they pay

large sums also for things which they cannot use at all, which therefore cannot possess a high value in use for them. Nor on their exceptional wealth; for they often play their game most madly, when their fortune has already been squandered, and they live, properly speaking, on debts; but manifestly the true ground of this phenomenon lies in the reckless disparagement these people have for the price good money."

I should repeat myself if I once more discussed this element of the appreciation of the price good money, which we have already met with in Aftalion's work. We can only briefly summarise in connection with von Böhm's concluding sentence, that "the true ground for this phenomenon lies in the reckless disparagement these people have for the price good money." For we have already found, with Prof. Aftalion, that the difference between saver and squanderer is not that one does not spend his money, whereas the other does, but rather that they spend money in different ways.

Notwithstanding the fact that von Böhm has substituted the "value of the price good for the would-be buyers" for the purchasing power, I am of opinion that I am perfectly justified in classing his views as synonymous with the income theory, on account of the way in which he interprets the valuation of the price good when it is money. This is confirmed by what he says further:

"After having brought forward a few points in which the theory of the purchasing power proves to fall short, I will readily admit that in by far the greater number of cases it holds good to all appearance. In fact, to prove its invalidity by practical examples, I was obliged to have recourse to not very common cases. Now it is very instructive to disclose the ground of this relation. It lies in this, that the purchasing power, or rather the easy financial circumstances, is, though not the only, yet the chief ground that determines the *valuation of money*, and added to this it lies in the fact that money is the commonest price good."

By this addition von Böhm's exposition comes very close to Aftalion's theory. Where the latter calls the purchasing power the quantitative element, and by the side of this states three qualitative elements, von Böhm combines the three factors together in the expression "value that the price good has for the would-be buyer."

A hundred guilders will then be more serviceable to him than a coat, and more than corn, and he will offer part of his corn in order to receive a hundred guilders in exchange. He does not ask for the hundred guilders because they have value in exchange, but because they render him an important service, which for him is even more important than the value in use of the coat.

However, von Böhm has mentioned here a form of value in use which has special consequences for the value in exchange of money only in particular circumstances. The main factor which determines the value of money, and which is based on the purpose for which we generally use money, has not been adopted in his general value theory.

That we use money for some purpose, that it renders us useful services, has been realised by von Böhm as clearly as by many other writers. It seems, however, incomprehensible to me how it is possible, on the one hand to recognise that money renders useful services, and on the other hand to deny it value in use. In his enumeration of the goods that the "Socialkapital" comprises (in *Kapital und Kapitalzins*, pp. 130, 131), he mentions under (6): "Consumption goods in store with producers and dealers" and under (7) "money."

And on p. 132 he says:

"And for the same reasons for which everybody will reckon the cart and the horses by the aid of which the farmer brings home the corn and the wood among the production goods, and with capital all the objects and instruments of the wider social 'bringing home,' the products that are to be brought home themselves, the streets, the railways, the boats, and the instrument of trade *money*, should, in accordance with this, also be reckoned with capital. It may be said, in addition, that these peculiar commercial instruments may be placed as perfectly equivalent side by side with the other technical production instruments, according to the degree of utility that is derived from them. They are equally remunerative, or more so, than any other capitalistic method of production to which the most famous technical discoveries have led."

It is perhaps impossible to give a briefer, terser and more comprehensive qualification of money than by calling it an instrument of trade, and when it is seen how von Böhm takes note of the rich reward which ensues from the use of

money, it seems hardly possible that he can persist at the same time in the opinion that no value in use should be assigned to money.

It is certainly not a value in use of the same kind as that which consumption goods have in the consumption. We can sooner compare the value in use of money, which is an *instrument of trade*, with the value in use of other machines, and even more directly we can compare the value in use of money with the value in use of consumption goods which are still held in store by the producers and the dealers.

Therefore the problem of the value of money requires that a solution should be found of the relation between the value in use of the instrument of trade and the value in exchange.

Von Böhm has only cursorily touched upon the theory of money in his studies so far as was necessary as part of his general value theory and theory of interest. This cursory treatment left room for a critical discussion. However, I cannot but rejoice that in his classification of the different forms of capital goods, money immediately follows the stores of goods of dealers and producers, and that he further discusses these two categories as one group. The treatment of the value problem, which I shall give later, finds in this powerful and very welcome support.

CHAPTER XII

THE CASH-BALANCE THEORIES

§ I. MARSHALL AND KEYNES

IN his *Money, Credit and Commerce* Prof. Marshall sets forth the principles which determine and explain the value of money.

His exposition is of the greatest importance also for our theory of value, for part of his principles necessarily find a place there. But, on the other hand, quite indispensable foundations for our theory of the value of money are looked for in vain in his discussions. Further—also in connection with this deficiency—no logical sequence is reached, which leads from his basis to an explanation and exact determination of the value of money.

The failure of Prof. Marshall, who has enriched the science of economics by the introduction of an important determinant of value, to attain a satisfactory explanation, must probably be ascribed to his clinging to some old ideas and views of earlier writers, which will be further elucidated in what follows.

In *A Tract on Monetary Reform* Mr. Keynes has constructed his views on Marshall's foundation, but though he bases his views entirely on Marshall, and does not criticise his method of exposition, yet his development of these foundations deviates rather considerably from that of Marshall.

It seems to me, however, that Mr. Keynes has not done justice to the very essential element in Marshall's work which rendered possible the glaring contradiction of Keynes' own thesis on p. 75, that "money has no utility except what is derived from its exchange-value—that is to say, from the utility of the things which it can buy"—and his quota-

tion (on p. 78) of Marshall's words, made with evident concurrence :

"A large command of resources in the form of currency renders their business easy and smooth, and puts them at an advantage in bargaining."

Is this "advantage in bargaining" no independent underived utility of money, after all?

An interesting difference lies also in their opinions on the quantity theory as it is formulated by Prof. Irving Fisher.

Prof. Marshall says regarding this :¹

"But this identical statement does not indicate the causes that govern the rapidity of circulation of currency : to discover them we must look to the amounts of purchasing power which the people of that country elect to keep in the form of currency."

Mr. Keynes draws up his formula in connection with, and starting from what "people elect to keep in the form of currency," and then remarks regarding Fisher's formula :²

"It comes to the same thing in the end, and it is easy to pass from the above formula to Prof. Fisher's. . . ."

Without doubt Mr. Keynes refers here to the simple mathematical relation that exists between the average rapidity of circulation and the average time that our cash balance meets our needs. In connection with which we then decide how great we wish the amount of our cash to be. However, Mr. Keynes' formula—rightly—does not indicate the quantity of money which *will be sufficient* during this average time to purchase our "consumption units," but it denotes the quantity of money which, at a given moment, we *expect to be sufficient* for the purchase of our consumption units during this average time.

This supposition, this expectation, yields an economic determinant for our demand for money at any given moment. Since, however, what we expect to be sufficient is not identical with what will actually appear to be sufficient, there is in reality not the simple relation which Mr. Keynes conjectures between his formula and Prof. Fisher's. In the latter's formula is contained the rapidity with which the money in a completed period circulated ; it is a fact that we,

¹ Marshall, p. 43.

² Keynes, p. 78, footnote.

retrospectively, can ascertain, can measure; it can, however, never be an economic determinant. A fact that we ascertain and measure retrospectively can never be our motive, a cause originating in ourselves.

In the passage quoted above, Prof. Marshall has pointed this out, and as economic formula that of Mr. Keynes excels that of Prof. Fisher in more respects than that it would merely be, as Mr. Keynes says, "less artificial."

§ 2. MARSHALL

Let us, however, for the present confine ourselves to Prof. Marshall's studies. He writes on p. 44 :

"Let us suppose that the inhabitants of a country, taken one with another, find it just worth their while to keep by them on the average ready purchasing power to the extent of the tenth part of their annual income, together with a fiftieth part of their property; then the aggregate value of the currency of the country will tend to be equal to the sum of these amounts. Let us suppose that their incomes aggregate in value to five million quarters of wheat (in a normal year), and their property to twenty-five millions. Then the total value of the currency will be a million quarters of wheat : for, at that rate, every one will be able to have as much ready purchasing power at command as he cares to have; after balancing one against another the advantages of a further ready command, and the disadvantages of putting more of his resources into a form in which they yield him no direct income or other benefit."

In this reasoning we must distinguish two points. Part of it follows earlier writers in their considerations on the amount of ready money which the public needs. Marshall himself mentions Petty, Locke, Cantillon, and Adam Smith. But while these earlier writers restrict themselves to stating that people usually keep part of their incomes and property in the form of currency, Marshall mentions an argument that determines this part in the sentence :

"After balancing one against another the advantages of a further ready command and the disadvantages of putting more of his resources into a form in which they yield him no direct income or other benefit."

This argument of the "advantages" accruing from the possession of "ready cash" is an economic cause that deter-

mines the part that we keep in the form of "ready cash." In this respect Prof. Marshall's interpretation shows a very great advance on that of earlier writers. With regard to the significance of those "advantages" attending possession of "ready cash," Prof. Marshall adds the following particulars.

First of all I refer to the already mentioned passage, also cited by Mr. Keynes.

"A large command of resources in the form of currency renders their business easy and smooth, and puts them at an advantage in bargaining."

Further, Marshall says on p. 43 :

"The amount of ready purchasing power which the people of a country find it advantageous to keep in their own holding is governed by causes, the chief of which can be seen with but little trouble. It is true that comparatively few people analyse their own motives in such matters : but implicit suggestions of their motives are contained in such observations as :

"I have kept a larger stock of money than I really need : I might have used some of it in purchases of personal use, or invested it."

"Opposite reflections occur, when a man has spent or invested nearly all the money which he commands ; and has in consequence failed to take advantage of a good bargain which came within his reach. Or he may have been forced to buy from retailers, who charged him high prices and delivered inferior goods, being fortified by the knowledge that if he raised objections he could be brought into subjection by a hint that he must pay up quickly."

And on p. 46 :

"But, in the absence of any credit auxiliaries to currency, every trader is dependent on the stock of purchasing power which he holds in the form of money, for the means of making good bargains when they offer. By instinct and experience he balances the benefit against the loss of a large holding : he knows, that if he keeps too little purchasing power at his command, he will be frequently brought into straits ; and that if he keeps an inordinate quantity, he will diminish the material sources of his income, and yet may find but few occasions on which he can turn the whole of his ready purchasing power to any great advantage."

We may summarise Prof. Marshall's argumentation as follows :

The possession of "ready cash" offers certain advantages, which we must balance against the advantages which may be derived from all kinds of other things.¹ The result of this comparison decides what part of our property we shall hold in the form of "ready cash." If this relation has been established, the value of the money is also determined. If, *e.g.*, this ratio is one-tenth of our possessions, the value of the money is also one-tenth of our property, and is thus determined and explained at this value.

Hence, according to Prof. Marshall, there are

(a) Certain advantages of money, which are compared with advantages of (other) goods;

(b) A proportion of the quantity of value in exchange of money and the value of the quantity of (other) goods which we possess, determined by (a);

(c) The value in exchange of money, determined by the proportion found in (b) of the property in money to the whole property.

If we wish to analyse why this reasoning does not satisfy us, we must first of all try to find an analogue with the determination and explanation of the value in exchange of economic goods in general.

Let us, for the sake of simplicity, assume that our whole property consisted of only two different kinds of goods, *e.g.* clothes and ornaments, both having utility for us (for which reason we keep them). Now the question we have to ask ourselves is this: Will the different members of the community hold these goods in a proportion which is determined by the proportion of their utility? The answer to this must be in the negative. On the contrary, we do not leave any stores unused, but avail ourselves of the whole existing stock. The result is then the very opposite: the utility (the marginal utility) is, among other things, determined by

¹ Strictly speaking, Prof. Marshall speaks of balancing the advantages attached to the possession of ready cash against the loss of a large holding. It is, however, clear that a large holding can never produce a loss, but that it only means that the holder must forgo the advantages which other things which might be held instead of it might yield. For this reason, I have substituted "the advantages which may be derived from all kinds of other things" for "the loss of a large holding," in the opinion that by doing so Prof. Marshall's argumentation is not impaired.

the quantities of the goods that are available. And, in the end, the value in exchange of these goods is again determined by our valuations in connection with the marginal utility.

It is the same thing with the total stock of money. Here, too, there is not a part that remains unused (except in exceptional cases, as in the case of hoarding, which for the rest may also occur with other goods)¹; the whole quantity of the money is held by the joint members of the community for the sake of the services which money renders. Prof. Marshall has tried to steer clear of this difficulty by putting the position different for money than for other goods. He assumes that for money there is not a demand for a definite quantity of money, but for a definite quantity of value in exchange (or, as he expresses it, purchasing power) in money. In this connection it must be pointed out, in the first place, that economists might have made things much easier for themselves if this were correct. For the explanation and determination of the value of goods in general we might then simply have put: We demand a definite quantity of value of all kinds of goods in such a way that the advantages they offer are in equilibrium. The value of the unit of each commodity is then determined by the proportion of the value of this species to the whole of our property in goods divided by the number of available units of this commodity. No theory of marginal utility would then be necessary to attain the solution of the problem of the value of goods in general.

There was, however, for Marshall, in a certain sense, reason to put the question differently for money than for goods in general, because the services that money renders are actually furnished on account of the fact that money has value. Our demand for money is, indeed, not directed to a quantity of money units, but to a quantity of value in money.

If we could therefore say that we demand a fifth or a tenth of the value of our property in the form of money, the total quantity of money would have a value corresponding respectively to a fifth or a tenth of our property.

¹ Besides, hoarding money is not equivalent to not using money.

However, there is no relation that logically leads from the advantages connected with property in the form of money mentioned above under (*a*), compared with those connected with the possession of goods, to the proportion mentioned under (*b*) of our possession of exchange value in money and our possession in goods.

The economic laws, which political economy has already drawn up, have taught us that this logical connection, which would have to lead from what was given under (*a*) to what was asked under (*b*), does not exist. This logical connection could exist only if the economic laws were different from what they are in reality. Let us suppose for the moment that an economic law should state that if a certain good yielded us twice as many advantages as another good, we should desire to keep in store twice as much of the first good as of the second; then this would really express a logical relation between the advantages offered by different goods and the quantities that we should hold of these two different species of goods.

But since this supposed economic law is not in accordance with reality, no logical connection can be pointed out that leads from what was given under (*a*) to the required relation of (*b*).

Therefore, what was given under (*a*) and the required relation under (*b*) remain quite detached—the relation remains unknown and unexplained.

Prof. Marshall's theory presents another difficulty. He assumes that we hold a quantity of value in exchange in money (purchasing power), which, in connection with the advantages it offers compared with those of other goods, would constitute a definite part of the total value of our possessions. The relation of this part to the total resources being thus determined by the respective advantages, would then determine the value of money.

In a definite case Prof. Marshall would, therefore, reason as follows: if, holding one-tenth of our possessions in money, we perceive that the advantages of the money are in equilibrium with those of other goods, then we shall choose that proportion, and the value of the money is therefore one-tenth of that of our total possessions.

From the knowledge of the relation of our property in money to our property in another form would therefore follow the value of our property in money. I consider this incorrect, for this reason, that we should not know the relation of the value of the different parts of our property at all if we did not get to know them through the way in which we should be willing to exchange them for other commodities. In other words, we do not start with the knowledge how our property is divided according to the value of the different goods, and are then able to compute the value of these goods from this; but inversely, not until we know the value in exchange of the different goods do we know how our property is divided according to the value of these different goods.

I should like to elucidate this view as follows :

Suppose a man lives in a region which is, for the rest, uninhabited, and has no contact with the world outside. He partially provides for his wants by labour. He builds a house, and manufactures furniture by the aid of materials which he already possesses, and out of wood which he has at his disposal in unlimited quantity. He makes his clothes from the skins of animals which he kills. He supplies the necessary food also by hunting game, by catching fish, by gathering fruit, and by growing some plants. This man arranges his labour as economically as possible, *i.e.* he will not waste any labour on the making of additional furniture if he can supply a more urgent need by the same work—if, *e.g.*, he can catch fish in the same time, of which he has a greater need at the moment. If thus he had applied his work as economically as possible, *i.e.* always directed to that which is most necessary, he can divide the parts of his possessions mentioned here according to their respective value, roughly speaking, in proportion to the quantity of labour that is required for them.¹

There are, however, also other parts of his property. He has brought with him to his solitary abode a watch, some books, a pair of spectacles, a violin, etc., all of them articles

¹ At least for so long as his appreciation is not modified after the manufacture,

which he could not possibly replace by others if he should lose them, and all of which nevertheless supply a very decided need.

It is now entirely impossible for this man to determine what part of his property this watch, these books, these spectacles, this violin, etc., constitute. He could only form an idea of this if the possibility of exchange presented itself. For only then could he realise for how many other commodities which he could also construct for himself he would be prepared to exchange this watch, these books, etc.

It appears from this that it is not correct to suppose that we know the value of the parts of our possessions through our knowledge of the relation that they each bear to the total, but, inversely, we can only calculate this relation because we know the value of the different parts.

This holds true in a particular degree for money, which we in general acquire only by exchange. If therefore at a definite moment we have resources in the form of money that we may compute to constitute at the current prices, *e.g.* one-tenth of our total property, and we perceive that we should ascribe a greater degree of utility to the possession of a somewhat larger amount of money than to the possession of some of the other commodities, we consider on what conditions we ourselves should be prepared to exchange part of these other commodities for money, and try to find another party who is disposed to make the exchange on the conditions required by us (price). If the transaction is completed in consequence of our finding another party, the value in exchange is already known, and we can then calculate what part of our property our money resources will constitute.

Accordingly, we can compute the proportion of the resources which we hold in the form of money from the knowledge of the value in exchange, *not*, inversely, the value in exchange from the proportion of the resources that we hold in the form of money.

Prof. Marshall's reasoning has now returned to the, in my opinion, correct central idea, that, in some way or other,

possession of money offers advantages which are of influence on the formation of the value in exchange.

This is the positive result that we owe to Prof. Marshall's work, and that opens the way leading to the solution.

However, the way in which these advantages exert their influence in the formation of the value in exchange would have to be fully examined and explained in order to arrive at a solution of the problem of the value of money.

§ 3. KEYNES

It is remarkable that others have not built further upon Prof. Marshall's positive results.

Mr. Keynes has, indeed, taken Marshall's exposition as his basis, but he has started from other parts of the latter's considerations. For on p. 76 of his *A Tract on Monetary Reform* Mr. Keynes says :

"The amount of this purchasing power (which it suits them to hold or to carry about) depends partly on their wealth, partly on their habits."

It is clear that the "advantages" to which Prof. Marshall refers are entirely disregarded here. The starting point is "their wealth and their habits." Mr. Keynes then continues :

"But if their wealth and their habits in the above respects are unchanged, then the amount of purchasing power which they hold in the form of money is definitely fixed. We can measure this definite amount of purchasing power in terms of a unit made up of a collection of specified quantities of their standard articles of consumption or other objects of expenditure; for example, the kinds and quantities of articles which are combined for the purpose of a cost-of-living index number. Let us call such a unit a consumption unit and assume that the public require to hold an amount of money having a purchasing power over k consumption units. Let there be n currency notes or other forms of cash in circulation with the public, and let p be the price of each consumption unit (*i.e.* p is the index number of the cost of living), then it follows from the above that $n = pk$. This is the famous Quantity Theory of Money. So long as k remains unchanged, n and p rise and fall together; that is to say, the greater or the fewer the number of currency notes, the higher or the lower is the price level in the same proportion."

This formula and explanation do *not* give us a determination of the value of money in connection with the advantages connected with the possession of money, but they give us a determination of this value if we start from a quantity of "consumption units" which we intend to procure in connection with our wealth and habits.

For it is argued already in the first sentence of this exposition that with invariable wealth and habits the amount of purchasing power is definitively determined. This statement seems to me to be in direct contradiction to Marshall's view that the possession of money offers certain advantages which determine the quantity of purchasing power which is held in the form of money.

Only "wealth" is included in Prof. Marshall's theory, *i.e.* where he speaks of the part of our possessions that we hold in the form of money, and this, indeed, bears a certain relation to the advantages, because the appreciation of the utility of a good is, among other factors, determined by our "wealth." The introduction of the notion "habits" seems to me, however, a less felicitous substitute for the "advantages" as determinant for the value. For if these habits should appear not to yield the greatest advantages of money possible, we should begin to modify these habits on economical grounds. For this reason the substitution of the factor "habits" for the conception advantages cannot be called an improvement.

As regards the formula drawn up by Mr. Keynes, this represents actually, as he himself says, the quantity theory—that is to say, it states that the value of the money unit varies inversely as the quantity, if the other factors of the equation remain the same.

But this equation is no more able to give an explanation and determination of the value of money than are any of the others.

For an analysis of this particular equation brings to light that there are certain underlying factors which *determine both k and p* , which makes it impossible to explain p as being determined by the quotient of n and k . If k and p were not both determined by one and the same third

factor, then p might be called logically explained and determined by k and n . If, however, we consider, *e.g.*, the underlying factor of the "advantages" which are connected with the possession of money, the factor introduced by Prof. Marshall, it appears that if, for some reason, these advantages become greater, it will follow that at the same time and to the same extent the value of money rises (*i.e.* that p decreases), and that an amount of value in exchange is held which buys a greater quantity of "consumption units" (*i.e.* that k rises).

Hence k cannot be said to determine p as independent factor (together with the actually independent factor n), but k as well as p are themselves determined in the same degree by one, and actually even by more, other factors.

In order to realise clearly and fully the dependence of k and p , a comparison with n is serviceable. For we see easily that n is an independent determinant of p . There is here no third factor that determines both at the same time. Hence we may take n as a determinant of the value without further analysis. The same thing cannot be said of k , for, both k and p being dependent on other factors, which influence them both in the same degree, p cannot be considered as determined, among other factors, by k .

Nevertheless, Mr. Keynes' formula is so plausible that it is desirable to analyse more closely what relation can be ascertained to exist between this formula and the factor introduced by Prof. Marshall, *i.e.* the advantages connected with the holding of an amount of money at ready command.

Mr. Keynes' formula is so plausible because there are a great number of cases to which it applies directly. For there are innumerable people who have a weekly budget of expenditure which comprises about the same quantity of "consumption units" for every week. Everything that is going to be bought in the course of the week is held as cash at the beginning of the week.

The question now arises whether there is a contradiction between Mr. Keynes' formula, founded on the "wealth and habits" of the users of money, and Prof. Marshall's theory,

which bases the use of money on the advantages derived from it. If we should have to answer this question in the affirmative, there would be every reason to abandon Prof. Marshall's basis of the advantages, since Mr. Keynes' formula is, in numerous cases, quite clearly directly in accordance with the facts.

I do not think, however, that a contradiction can be pointed out here. For, if the same budget returns every week with great regularity, the holding of an amount of cash—at the beginning of the week—corresponding to the "consumption units" to be acquired in the course of the week will agree with the maximum of "advantages."

For more trouble and expense than advantages would accrue to the holder of this amount of cash if he invested, or used in another way, this comparatively small amount of money for only a few days, with the certainty that he would have to convert his investment into ready cash a few days later, in order to be able to defray his current expenses at the end of the week.

Hence there is no other form which can yield greater advantages to these users of money than a stock of ready cash sufficient to buy the total of the consumption units necessary in the course of the week. In these cases Prof. Keynes' formulation is, then, in harmony with the principle of the "advantages."

But there are also numerous other cases in which the advantage of a temporary investment is balanced against the advantage of a larger amount of cash, which will be able to buy more consumption units, or will suffice for a longer period, or which is at ready command, if unforeseen expenses should suddenly arise. This is the case, *e.g.*, with those who receive a large income quarterly or yearly, as doctors, and those who live on the profits from their business.

Here the objectively given factor of the consumption units to be bought cannot be used. In the first series of cases this objectively given factor coincided with the maximum of advantages that was to be reached. In this second series of cases it already appears that not the objectively given

factor, but the advantages that can be reached, is the real basis.

Both series of cases refer to the cash that *consumers* wish to hold at command, but shopkeepers, tradesmen and manufacturers also need ready cash for their trade, and here the basis of a value balancing the consumption units that are to be procured which is determined by wealth and habits is entirely lost. In this case the desired amount of cash can fluctuate considerably: *e.g.*, according as the business man thinks that the prices of commodities will fall or rise, a greater or a smaller amount of cash will correspond to his expectation of the greatest advantages possible.¹

§ 4. PIGOU

Prof. A. C. Pigou has set forth his theory of the problem of the value of money in an article entitled: "The Value of Money" in the *Quarterly Journal of Economics* of November 1917.

He draws up an equation there with which that given by Keynes shows a close resemblance.

In this equation

$$P = \frac{KR}{M}$$

R denotes the total resources expressed in terms of wheat, K the proportion of these resources which are held in the form of "titles to legal tender," M "the number of units of legal tender," and P "the value or price per unit of these titles in terms of wheat."

This theory bears the same character as those of Prof. Marshall and Mr. Keynes. Like them, it starts from the principle that the different members of society desire to hold a quantity of value in exchange (purchasing power) in the form of currency, in order to be able to buy as soon as they may desire to do so. Prof. Pigou shared Prof. Marshall's insight into the advantages offered by a holding in the form of ready cash, which formed the basis of the

¹ Compare, further, on Mr. Keynes, p. 252.

demand for a quantity of value in exchange in the form of money.

The objections to this are, however, the same as those raised to the other theories representing the same principles.

Here, too, it is not to be seen what part of the resources in value in exchange will be demanded in the form of money, since the value itself is first determined by the demand, among other factors, and this is determined by the utility (advantages), and the utility is again dependent, among other things, on the available quantities.

The solution of this complicated interaction is not given in Prof. Pigou's article.

Prof. Pigou, however, briefly mentions a form of the money problem which is not mentioned by many others. He writes on p. 41 :

" If a person is unable to meet his obligations from these sources when they fall due, he will possibly be rendered bankrupt."

We shall become further acquainted with this form of demand for money in our theory, for this form of demand for money also necessarily finds a place in our endeavour to bring the problem of the value of money to its solution.

While Prof. Pigou has thus enriched the science of economics with an important datum, it is surprising to see that, on the other hand, he has drawn up a formula which deals exclusively with a certain *volume* of the demand for money, but in which the *intensity* of the demand is left out of account.

The mechanic way of consideration, to which so many economists are inclined when studying problems referring to money, has evidently also been of influence here. Yet it is clear at first sight that with the same *volume* of the demand for money a considerable difference may be present in *intensity*. A person who has to pay a hundred pounds to discharge a debt, knowing that in case of non-payment his failure is sure to follow, develops an entirely different demand for a hundred pounds from a person who wants to have the convenience of keeping in hand a hundred pounds in cash, in order to be able to buy in all contingencies whatever he may desire to procure.

A person who is in fear of failure if he has not a hundred pounds at his disposal at a definite moment may be prepared to offer a set of furniture for sale for a hundred pounds, with which he would not have parted for double the sum under normal circumstances. The other person's demand for money, on the other hand, will be measured by calm and practical motives, according to the advantages attainable with it. The intensity of his demand for money is much less great.

For the rest, Prof. Pigou's equation appears to come much nearer to Prof. Marshall's equation than that of Mr. Keynes, since Prof. Pigou includes the part of our "resources" that we hold in the form of money in his equation, whereas Mr. Keynes inserts the quantity of "consumption units" which we intend to buy with our ready cash in a certain period.

My objection to Prof. Pigou's formula differs, therefore, in one respect from that to the formula of Mr. Keynes.

When dealing with Mr. Keynes' exposition we had to conclude that there are certain causes (among others the "advantages" introduced by Prof. Marshall) which determine both the value of the money unit (*i.e.* p) and the number of "consumption units" which we suppose we are able to buy with our cash.

Hence p was not explained from, and determined, by k , but both together by a third (and even by several) factors.

With regard to Prof. Pigou, I must refer to the last part of my criticism on Prof. Marshall. In connection with what I there argued, it follows that we do not know the value of money (*i.e.* of P) because we know the part of the "resources" which we care to hold in the form of money (kR), but that this part of the resources is not known to us until we have first realised on what conditions (for what quantity of other goods) we are prepared to acquire this amount of cash through exchange. If we therefore want to explain why it is that we are willing to exchange a definite quantity of money units for a definite quantity of commodities, we cannot solve this by saying that we acquire money in exchange till our quantity of cash is kR , for we do

not know kR itself until we know on what conditions we are prepared to exchange money for commodities.

§ 5. EDWIN CANNAN

In his book *Money* Prof. Edwin Cannan gives his ideas about money, which, without question, far excel those of many writers who have drawn up the most elaborate theories for the explanation of the value of money or of the price level.

It is Prof. Cannan's merit that over against all these intricate considerations he has placed his own very simple, fundamentally correct view that the valuation of money takes place in the same way as that of other commodities.

If this opinion could be maintained in every respect, Prof. Cannan would have brought us the solution of the value problem. However, while Prof. Cannan has seen the most important part—viz. the close analogy as regards the formation of the value between money and other goods, the, also not inconsiderable, differences have evidently entirely escaped his attention.

For this reason his reasoning leaves us unsatisfied, and we sometimes meet with inconsistencies.

Because he has overlooked the important differences, his doctrine carries no conviction to those who, in their explanations of the value of money or of the price level, have been tempted by these very differences to depart from the normal way and have recourse to the most far-fetched and hazardous suppositions.

As an illustration of Prof. Cannan's insight into the analogy as regards the formation of value, his conclusion on p. 63 may be quoted :

“ The conclusion of the whole inquiry is that the value of money, which is the same thing as the general level of prices regarded inversely, is not an anomalous or even very peculiar thing, but depends in the same way as the value of other commodities upon the various influences which affect demand and supply. . . . ”

As an illustration of the correspondence with regard to

decrease of the demand with increasing supply we quote from p. 60 :

“ When more coal is produced, the value of coal falls, and this indicates that additional supply of coal is less required. Of course, if the coal-producers or the gold-producers accept a lower price for their product, they will find, down to a very low limit, plenty of ‘ genuine demand ’ for it, but only because the demand has extended to take advantage of the lower price, and so it is with the note-producers : if they will accept smaller quantities of commodities and services in exchange for their notes, they will find down to a very low limit plenty of ‘ genuine demand ’ for them, because they are cheaper. *The only difference*¹ between coal and gold and notes is that coal is never money, while gold sometimes is, and notes always are : in consequence of which the value required in exchange for coal is always called its ‘ price,’ the value required for gold sometimes is and sometimes is not called its ‘ price,’ and the value required for notes is never in ordinary language called their ‘ price.’ ”

In my opinion there is a far more important difference than in the terminology of ‘ price ’ : it is this, that with money the demand diminishes with increasing supply in an entirely different way from what it does with coals. For in the case of coals new supply actually meets new demand. With money a definite quantity of value in exchange in money is, however, demanded at every moment (as we shall see later). A new supply of money meets, therefore, no new real and lasting demand, but covers, conjointly with the existing quantities of money, the same demand that was previously covered by the existing quantities alone. Therefore the decrease of the value in exchange of the unit on increase of the quantity is as a rule much greater in the case of money than with other commodities.

That there are sometimes inconsistencies, as stated above, appears on pp. 18 and 19. On p. 18 Prof. Cannan makes an attempt to apply the doctrine of “ marginal utility ” to money. He is of opinion that this doctrine holds good for money in the same way as for other commodities, and that

“ the only difficulty we feel is only the result of the strangeness of estimating the value of sovereigns in other things instead of, as usual, the value of other things in sovereigns. The marginal

¹ The italics are mine.

purchaser is the man who is only just convinced, or in practice in modern times the bank or Government which is only just convinced of the desirability of increasing or diminishing the stock of coin in hand, just as the marginal purchaser of house room is the man who is only just convinced of the desirability of paying for more accommodation."

But a little further on (p. 19) he writes :

" . . . people only want money in order to buy other things with it, so that their real aim is the acquisition of these other things and services."

This statement seems to me incompatible with the consideration immediately preceding regarding the " marginal utility." A person who adheres to the thought that we demand money to acquire commodities, cannot easily explain that we part with commodities to acquire money. And it then becomes impossible to assign a " utility " of its own to money.

The " marginal utility " of money itself is then eliminated and transferred to the " marginal utility " of the commodities to be bought for the money. But in this way the marginal utility of money itself, which existed according to Prof. Cannan's assertions, on page 18, has vanished.

If, however, money should not possess marginal utility of its own, but only derived utility—viz. that of the commodities that can be bought for it—we do not know this derived " marginal utility " of money until we know on what conditions we can obtain commodities against money. We do not know this derived marginal utility until we know the value in exchange of money. It can therefore not be serviceable to us in the solution of the problem of the value in exchange of money. We thus get into the same vicious circle which has been imputed to von Mises' theory.

§ 6. HAWTREY

R. G. Hawtrey has given his theory of money in his *Currency and Credit*. In the formation of his conclusion concerning the factors that determine the price level (on p. 60) we find a close resemblance to Prof. Schumpeter's theory. The " sum of incomes " introduced by Prof.

Schumpeter has, however, been replaced by the "consumers' outlay," through which a magnitude has been eliminated which appeared to present many difficulties in Prof. Schumpeter's reasoning.

The idea of the "consumers' outlay" is defined on p. 46, where Prof. Hawtrey says :

"The income is to be what a man has available to spend on his own needs; the expenditure is to be what he so spends. They may conveniently be called the 'consumers' income and the consumers' outlay,' though it must be understood that 'consumer' includes 'investor,' for investment is one of the purposes on which income may be spent.

"The receipts and disbursements of the trader, who buys or produces with a view to sale, may be called the 'trader's turn-over,' to distinguish them from the consumers' income and the consumers' outlay."

Further, Prof. Hawtrey introduces another magnitude, called the "unspent margin." About this conception he says on p. 43 :

"The unspent margin, in fact, is equal to the money in circulation *plus* the obligations of the banks. These obligations are equal to the assets of the banks, less their capital."

And on p. 47 :

"The unspent margin consists of two portions, the traders' balances and the consumers' balances."

Although this does not directly bear on my essential objection to Prof. Hawtrey's reasoning, I may not leave unmentioned here that a great part of the "balances" mentioned on p. 47, and—what is the same thing—of the "obligations" of the banks mentioned on p. 43, consist of time deposits, which are in no closer relation to money than a bond or a mortgage. Such time deposits, as well as bonds or mortgages, are only expressed in the standard of value—money—and though in due time they must be paid with the medium of exchange—money—and though, with some restrictions, they can fulfil the service of money, they are directly no more money than, *e.g.*, the obligation to supply at a certain time a cow is a cow.

My fundamental objection to Prof. Hawtrey's theory of the price level concerns his conclusion on p. 60 :

"Consequently the price level varies *directly* as the unspent margin and the circuit velocity, and *inversely* as the quantity of goods bought by consumers."

This formulation of the price level presents close resemblance to that of Prof. Schumpeter, and the way in which Prof. Hawtrey arrives at this conclusion—*i.e.* through what immediately precedes it—renders this resemblance still closer. The only difference consists, at bottom, in the choice of the terminology, but as regards the contents they show great similarity.

What immediately precedes Prof. Hawtrey's conclusion runs :

"The price level is proportional to the consumers' outlay and inversely proportional to the quantity of goods (including capital goods) bought by consumers per unit of time. Consumers' outlay is proportional jointly to the unspent margin and the circuit velocity of money."

If we consider what Prof. Hawtrey understands by the conceptions "consumers' outlay" and "unspent margin," the definitions of which I have quoted above, it appears that Prof. Hawtrey's theory gives us practically the same thing as Prof. Schumpeter's theory, and what failed to satisfy us in the latter theory for the explanation and determination of the value of money is here again the reason why Prof. Hawtrey's explanation does not lead to the desired solution.

§ 7. D. H. ROBERTSON

In *Money* D. H. Robertson has treated the problem of the value of money in two ways. On p. 29 he says :

"We can fix our attention either on the *stock* of money in existence at a given point of time, or on the *flow* of money being used during a given *period* of time. Each of these procedures has its own advantages; but since the main purpose of money is to be used, the latter procedure is perhaps that which comes more naturally to the ordinary man."

It is clear that the first procedure will lead us in the direction of Marshall, Pigou and Keynes, and that the second is allied to the theories of Fisher and Schumpeter.

It seems to me that what leads to the unsatisfactory

conclusion in the latter procedure results from, and is embodied in, the words "*to be used.*" The method of considering the problem on which this opinion is based also appears clearly from the sentence on p. 32 :

" But during that week some of the pieces of money in existence will *not be available* for work ; they may be *holiday-making* in my pocket." ¹

In this part of his reasoning Mr. Robertson evidently starts from the thought that money is used, and hence that it yields utility, only at the moment that a payment is made, and that it does not render services when it is held at command.

I think this a question of vital importance in the theory of the value of money, and this preconceived opinion, however plausible it may be, and however true it may seem, is the reason why a wrong course has so often been taken in attempting to solve the question. Here the technical and the economic sides of the question have been confused.

What we find clearly expressed here by Mr. Robertson, is, it is true, not explicitly expressed in words by many other writers, but it appears with the greatest clearness from their theories that they have started from the same standpoint.

Over against this I think I shall have to place the view that the most essential function of money is not buying, but being held at command in order *to be able to act as buyer if the opportunity offers.* This most essential function is, accordingly, the very thing that, in opposition to this, Mr. Robertson calls holiday-making. This essential function of money will have to be treated afterwards : here I will confine myself to an attempt to show that the intrinsic function of money cannot chiefly lie in buying.

The view embraced by Mr. Robertson and so many other writers is so plausible and obvious that it seems a hazardous enterprise to dispute it. Besides, it must create the impression of cavilling if this opinion is replaced by one which is expressed in almost the same terms. For this contested opinion says that the function of money lies exclusively in

¹ The italics are mine.

buying; whereas our contention is that this function chiefly lies in the possibility to buy if the opportunity offers.

How essential this apparently small difference is, however, appears already from this—that in the former case only *offer* of money against goods can be explained, and not offer of goods against money, unless it were to offer it at once again in exchange. With the second way of conceiving the function of money, on the other hand, both demand and offer of money in exchange for commodities can be explained. A person who wishes to hold money in hand in order to be able to buy with it if desired will be prepared to offer goods in exchange for it in order to procure the money. As soon as the moment has arrived when the holder of the acquired money prefers certain commodities to the continued holding of a quantity of money, he will offer the money in exchange for the commodities desired by him at the moment.

The idea that the real function of money lies in buying, forms fundamentally also the basis of the mechanical money theories; for these theories have reserved an important place for the number of times that money is used to buy.

As Mr. Robertson, as has already been said, agrees partly with the adherents of these theories (though also partly with those of the cash-balance theories), we find also something about this—viz. on p. 30, where he says that :

“ In any case, an increase in the volume of transactions means increase in the demand for money.”

It seems hardly possible to me to indorse this statement that “ an increase in the volume of transactions ” should necessarily go hand in hand with an “ increase in the demand for money.” Numerous instances may be found in which this is not the case. It depends on other circumstances (what these are will be examined later) whether more transactions give rise to a greater demand for money. This finds expression in Prof. Fisher’s equation, inasmuch as the price level may remain constant in spite of an increase in transactions, provided the velocity of circulation of money increases proportionately. This shows that the demand for money does not increase under all circum-

stances if the volume of transactions has become greater. Now increase of the velocity of circulation cannot assist us to answer the question *why* in certain cases, with a larger volume of transactions, the demand for money does not also increase, but this *is* unquestionably a proof that this is not always necessary.

That the other procedure—*i.e.* that which is closely allied to the cash-balance theories—is to be preferred, is acknowledged by Mr. Robertson, where he says, on p. 35, that :

“ it brings us into touch with the operations of human minds, instead of attaching the notion of demand to a stream of inanimate commodities.”

It is curious that Mr. Robertson then successively adopts the view of Mr. Keynes and that of Prof. Marshall. On p. 35 he starts from the standpoint that they have in common :

“ It will be readily granted that the ordinary person likes to keep ready to his hand a little pool of money, partly for the sake of convenience in conducting the ordinary business of life and partly as a margin to fall back on in unforeseen contingencies.”

But on p. 36 he takes Keynes' standpoint :

“ Without further discussion of it, therefore, we can go on to lay down that an individual's demand for money consists in the real aggregate value, in terms of the goods and services in which he is interested as consumer, of his money pool.”

My objection to this standpoint I have already set forth in my discussion of Mr. Keynes' work : the goods and services in which he is interested and the equivalent of which he holds as money pool, are not an objectively given magnitude, but vary with the importance of the services that money renders.

But in the next paragraph Mr. Robertson passes on to Prof. Marshall's views. Here he says :

“ Now in the case of every individual the pool of real value which is as it were crystallised for him in the shape of money can be expressed as a proportion of his annual real income—that is, of the flow of goods and services which his annual money income gives him the right to command.”

It must be granted that the words "can be expressed" are an exceedingly cautious rendering of Prof. Marshall's view. But, after all, to this also only one meaning can be attached—viz. that there would be a direct logical relation between the "convenience in conducting the ordinary business of life"¹ attending the possession of money, other advantages attending the possession of other goods, and the part of our income that we choose to hold in money.

There is, indeed, a relation, but not a direct one. We can find the part of our income in question when we know what is the value in exchange of money and what that of other goods. But, accordingly, we must first have found the value in exchange of money by another method, which Mr. Robertson, following Prof. Marshall's example, supposed he could derive from the proportion of the income.

¹ Mentioned in the sentence quoted from p. 35.

CHAPTER XIII

A THEORY OF BUSINESS CYCLES AND THE PROBLEM OF THE VALUE OF MONEY

J. M. KEYNES: "A TREATISE ON MONEY"

IN *A Treatise on Money* Mr. Keynes, as he says in his preface, proposes "a novel means of approach to the fundamental problems of monetary theory," which means of approach is contained in Books III and IV of his treatise. These Books III and IV give the basis on which his whole money theory, or, more correctly speaking, his theory of the price level, is built up. He has expressed the conceptions which he first closely describes and defines, in some "fundamental equations for the value of money"; we shall therefore have to study these conceptions and the equations deduced from them carefully in order to examine in how far the solution of the problem of the value of money has been reached by their aid.

Already in the second paragraph of Chapter I it appears that Mr. Keynes embraces an opinion concerning the conception of money itself in which there is no room for the distinction of two functions of money—viz. that of a standard of value and that of a medium of exchange. He says there :

"Such Debts and Price-lists . . . can only be *expressed*¹ in terms of a Money-of-Account."

And then :

"Money itself—namely, that by delivery of which debt contracts and price contracts are *discharged*, and in the shape of which a store of General Purchasing Power is held—derives its character from its relationship to the Money-of-Account, since the debts and prices must first have been *expressed*¹ in terms of the latter."

¹ The italics are mine.

Debts are, however, not *expressed* in the money of account, they are debts in money; as a contract may be concluded to supply 100 bags of coffee on a fixed day, a contract is also entered upon to supply £1000. The coffee contract is not expressed in coffee, but is really a claim to coffee. The coffee is to be supplied at the appointed time, and in the same way the *money* must be supplied in case of a debt. It would not be correct to say that there is first a coffee-of-account, and that the coffee then derives its character from its relationship to the coffee-of-account. For the same reason it cannot be said that money derives its character from its relationship to the money-of-account. Nor can the fact that a debt is first contracted, and that only when the debt falls due is the money paid, be taken as a proof that the money-of-account is primary, for the coffee-contract is also entered upon before the delivery of the coffee takes place. Hence it is not true that "money (is) the thing which answers to the description," as is stated at the top of p. 4, but it is the contents of the contract (the debt).

It seems to me that the confusion has arisen owing to the fact that the claim to money under certain circumstances can itself again act as money, as Mr. Keynes says at the bottom of p. 5 :

"The first of these prepares the way for the next development—namely, the discovery that for many purposes the acknowledgments of debt are themselves a serviceable substitute for Money-*Proper* in the settlement of transactions."

And on p. 15 :

"For the use of Bank-Money depends on nothing except the discovery that, in many cases, the transference of the debts themselves is just as serviceable for the settlement of transactions as is the transference of the money in terms of which they are expressed."

What refers to the debts in the quotation from the second paragraph of Chapter I refers just as truly to the price-lists mentioned there; for these are nothing but offers of commodities against money. Neither the commodities nor the money mentioned in these price-lists are units-of-account; the price-lists are communications that commodities are

offered and money demanded in exchange for them, as communications are also sometimes sent round in which commodities are asked for and money is offered in exchange for them.

Money-of-account is, in my opinion, found only in balance-sheets and inventories, in which property is expressed in units of this very particular commodity called money.

It is not exclusively on account of Mr. Keynes' importance as an economic writer that after having treated *A Tract on Monetary Reform* in a preceding chapter I devote another extensive discussion to his latest work. In the discussion of the first book it appeared that Mr. Keynes' opinions were more or less based on Prof. Marshall's views, albeit that important departures from the latter's theories had to be admitted. The theories embodied in *A Treatise on Money* differ, however, so fundamentally from all that Prof. Marshall has taught us that it would not even be possible to class the theory of business cycles, which Mr. Keynes gives to explain the value of money, in the same category as *A Tract on Monetary Reform*.

Only here and there, and indeed most clearly in Volume II, which Mr. Keynes has called *The Applied Theory of Money*, do the original principles come to the fore again, e.g. on pp. 34 and 35 of Volume I, where the reasons are set forth why a man holds a stock of money.

The interesting considerations on this subject, which I gladly endorse, seem to me, however, but little compatible with the further trend of the book. For as soon as it is realised why a man holds a stock of money, these motives will at the same time lead directly to the fundamental cause of the demand for money, and the problem of the value-in-exchange of money is then reduced to the search for the relations between this demand for and the offer of money on one side, and of commodities and services on the other.

Mr. Keynes has, however, followed an entirely different course, and, as will appear, he has not made things easy for himself in this way.

We shall return to this later when treating Book III, but will first discuss some other questions.

On p. 35 Mr. Keynes defines savings-deposits, and says regarding them :

" It is the criterion of a savings-deposit that it is not required for the purpose of current payments and could, without inconvenience, be dispensed with if, for any reason, some other form of investment were to seem to the depositor to be preferable."

It seems to me that here the money function which the savings-deposit *to a certain extent* also fulfils is ignored. For otherwise it could not be said that it could be dispensed with, whereas just previously, *i.e.* at the top of the page, it was stated that people hold their possessions in the form of savings-deposits in order to be " able to turn them into cash at short notice."

Of course this can also be done with other forms of investments, *e.g.* bonds, but the holder incurs expenses when he wants to turn the bonds into cash; and, moreover, he runs the risk of fluctuations in the price. If a man does not expect, however, that he will have to buy at once, but that he will buy in course of time, a savings-deposit may be held, which has then the same significance as a holding of ready cash, except that this latter can also be applied for purchases that must be made at once or in the near future.

Chapter VI of Book II answers the question, " Is there such a thing as an objective mean variation of general prices? " in the negative.

I readily concur in part with this conclusion. I am, however, of opinion that further conclusions are again drawn from it which present difficulties. We read on p. 80 :

" Nevertheless, Jevons certainly, and Edgeworth and Dr. Bowley to the best of my understanding, have also pursued something distinct from the Purchasing Power of Money, something reached in quite a different way, something which has to do with what they might describe as the value of *money as such*, or, as Cournot called it, the ' intrinsic value of money.' "

And on p. 81 :

" According to the Jevons-Edgeworth conception, the fluctuations in the prices of individual things are subject to two distinct

sets of influences—one set due to ‘changes on the side of money,’ which (subject to friction in the dimension of time) affect *all* prices *equally* in direction and in degree, the other set due to ‘changes on the side of the things,’ which affect prices relatively to one another.”

I regard these passages as in conflict with each other in so far that a “value of money as such” is, indeed, possible without it being necessary that, for this reason, a modification in this value would necessarily have to affect all prices simultaneously, even should it be of long duration.

If for the moment we assume this possibility of a “value of money as such” (which I will demonstrate presently), we can find the incompatibility by making a comparison with some other good—*e.g.* wood. If the value of wood “as such” changes, this will affect the price of iron in terms of wood in a different way from the value of coal in terms of wood, *e.g.* because coal and firewood can be substitutes for each other or, *e.g.*, because when wood is cheaper, building is cheaper, and more iron is needed, or, *e.g.*, because the relations between the fortunes of wood-dealers and those of the owners of iron-mines and coal-mines have been changed, etc., etc.

A modification of the value of wood “as such” need, therefore, not be necessarily accompanied by a modification of the exchange relations of all other commodities against wood in the same “direction and degree.” And the same thing applies to modifications in the value of money “as such.”

Now it remains to show that there is a value of money as such.

Mr. Keynes himself supplies us with an argument in his statement on p. 93, which is in contradiction to the passage quoted from p. 81.

On p. 93 we find :

“Since, therefore, a change in the quantity of money generally involves a changed distribution of purchasing power, it follows that relative prices can be affected not only by a change on the side of things, but also by a change on the side of money.”

This statement, it is true, refers only to relative prices,

while with regard to the Jevons-Edgeworth conception, it was stated that *all* prices were affected *equally* in direction and in degree; but we have seen that this latter statement does not hold good, neither as regards the value of any given good as such nor with regard to a change on the side of money. There is therefore no difference whatever; for the value in exchange of a given good is determined by the way in which the demand for this good is covered by the supply on one side and the way in which the demand for all other commodities is covered by the supply. The same thing applies to money, with only this difference, that the value in exchange of money is often called the purchasing power.

Here Mr. Keynes has brought forward one factor which determines the value of money as such, *i.e.* the quantity. In order to be able to determine this value completely it is necessary to discover and explain also the other factors.

It is necessary here to make a sharp distinction between the two conceptions of value: one that refers to the degree in which the demand for a *definite commodity* is covered by the supply, the other conception being the value in exchange (often called purchasing power with regard to money) which is determined by the *relation* of the degree in which the demand for a *definite commodity* is covered, to the degree in which the demand for the other commodities is covered by the supplies of these other commodities.

With this latter conception of value, variations on the side of the other commodities will always bring their influence to bear. Here one particular commodity (*in casu* money) can never be statistically isolated—that is to say, not from the index numbers.

But, in view of this, we are not justified in supposing that, with regard to the first conception of value, we should not be able to discover the factors that determine the value of money irrespective of the factors that determine the value of the other commodities. When it has been established what it is that determines how the demand for money is covered by the supply on the one hand, and how the demand for other commodities is covered on the other hand, the value

in exchange of money is found by combining these two data.

This value in exchange may then be expressed and measured in definite groups of commodities and services according to the economic or social purpose that one has in view.

This is the great positive significance of Chapters VI and VII of Book II—that when not the theory and practice of the value of money, but the social and economic significance of a certain price level are considered, it should unquestionably be kept in view that the different price levels can, temporarily and permanently, be modified *inter se*.

We now proceed to Book III, which contains the basis proper of Mr. Keynes' money theory. The most essential and indispensable passages will have to be quoted verbatim. In Chapter IX Mr. Keynes first gives a number of definitions—on p. 123 that of Income :

“ We propose to mean identically the same thing by the three expressions : (1) *the community's money income* ; (2) *the earnings of the factors of production* ; and (3) *the cost of production* ; and we reserve the term *profits* for the difference between the cost of production of the current output and its actual sale-proceeds, so that profits are not part of the community's income as thus defined.

“ More particularly we include in Income :

- (a) Salaries and wages paid to employees, including any payments made to unemployed or partially employed or pensioned employees—these being in the long run a charge on industry just as much as other outgoings to remunerate the factors of production ;
- (b) The normal remuneration of entrepreneurs ;
- (c) Interest on capital (including interest from foreign investments) ;
- (d) Regular monopoly gains, rents and the like.”

Hence a conception “ profits ” is distinguished which goes beyond the normal remuneration, *i.e.* the remuneration which is just sufficient to leave entrepreneurs “ under no motive either to increase or to decrease their scale of operations.” This normal remuneration is, accordingly, treated exactly as if it were wages, while, besides, a conception “ profits ” is distinguished, which profits may be positive

or negative. It is stated regarding these profits on p. 124 that they

“must be regarded, not as part of the earnings of the community (any more than an increment in the value of existing capital is part of current income), but as increasing (or, if negative, as diminishing) the value of the accumulated wealth of the entrepreneurs. If an entrepreneur spends part of his profits on current consumption, then this is equivalent to negative saving; and if he restricts his normal consumption because he is suffering windfall losses, this, on the other hand, is equivalent to positive saving.”

Regarding savings Mr. Keynes says on p. 126 :

“We shall mean by savings the sum of the differences between the money-incomes of individuals and their money-expenditure on current consumption. Thus profits, not being part of the income of the community, are not part of its savings either—even when they are not spent on current consumption.”

On p. 135 *et seq.* follow the equations on which the new money theory is built. In this Mr. Keynes denotes by :

E , the earnings of the community in a unit of time ;

I^1 , the cost of production of new investment ;

S , the amount of savings *as defined above* ;

O , the total output in units of quantities of goods in a unit of time ;

R , the volume of liquid consumption-goods and services ;

C , the net increment of investment in the sense that

$$O = R + C ;$$

P , the price-level of consumption-goods.

Accordingly PR is the current expenditure on consumption-goods and $E \frac{C}{O} = I^1$.

The equation then becomes :

$$P \cdot R = E - S = \frac{E}{O}(R + C) - S = \frac{E}{O}R + I^1 - S ;$$

$$P = \frac{E}{O} + \frac{I^1 - S}{R}.$$

Three objections may be raised against these equations ;

for convenience sake we shall consider the first and simplest form in our treatment—*i.e.* $P \cdot R = E - S$.

The first objection is this :

In this equation P is expressed in quantities of money-units, and also the two factors on the right-hand side, *viz.* E and S , consist exclusively of magnitudes expressed in quantities of money-units.

This involves that this equation would also be satisfied if the price level P in money units were twice as high, provided E and S were also twice as high, *even though the nominal supply of units of money should be the same*. In other words, this equation allows us—with a definite quantity of money—to suppose any price level, no matter how high or how low, if only E and S assume corresponding values. And not only does this equation not explain why at a definite moment with a definite quantity of money the price level is what it is, and not twice as high or half as high, but neither could *variations* be explained by the aid of this equation when these variations are the same for E and S as for P .

If, therefore, the earnings of the community should be doubled, or reach a tenfold or thousandfold value, and if the savings should increase in the same degree, *with a supply of money that had remained constant*, it would not be explained why the money unit would be worth only a fraction of what it was worth previously.

Mr. Keynes does show further on how, on increase of the quantity of money or on new “creation of credit,” the price level rises; but this equation leaves room for the possibility that the quantity of money may remain the same, and that the prices nevertheless rise without limit.

Accordingly, there must be some other factor that determines the exchange relations of money and commodities, and that has not been given by Mr. Keynes’ solution. That Mr. Keynes does not arrive at a satisfactory solution must, in my opinion, be ascribed to this—that he regards money as a kind of indifferent intermediate link. He sees only a *money-of-account*, which is the denomination in which all the prices are expressed; he does not see *money* as, *e.g.*, Prof. Marshall saw it—*i.e.* money which renders services

in a similar way to other commodities, and for which there is demand on this account, which demand, in connection with the supply, determines the value "as such."

The second objection is that the price level P in Mr. Keynes' equation represents the price level over a definite time (properly speaking, an average during this time). For R , E , and S are magnitudes referring to a definite unit of time. Accordingly, we cannot find anything else for P but the prices ruling in this unit of time—never the price level at a definite moment. If a calamity occurs during the night—if, *e.g.*, there are rumours of war in the morning papers, or if they report that the issue of banknotes has been considerably increased and the export of gold has been stopped, the price level is entirely different from what it was the evening before, although there has been no change in R , E , and S .

This does not mean to say, of course, that the equation is faulty, but merely that it can indicate the price level only for a definite period of time. There is, however, no question of a determination, much less of an explanation of the price level at a definite moment.

The third objection refers to the meaning attached to the conceptions profits and savings. We have seen that Mr. Keynes makes a sharp distinction between the normal remuneration of entrepreneurs and their profits. The former is included in E , the earnings of the community, whilst as I quoted from p. 126 :

"profits, not being part of the income of the community, are not part of its savings either even when they are not spent on current consumption."

Nevertheless, it cannot be indifferent for the price of consumption goods whether these profits are wholly spent on consumption goods, partially spent on them, or not spent at all. To illustrate this we can, led by Mr. Keynes' equations, compare two communities, in which R , E , and S are the same. In community A, however, entrepreneurs spend only their normal remuneration on consumption goods, whereas in community B they spend, above their

normal remuneration, £1,000,000 of their profits on consumption goods.

We should then find for community A : $Pa \cdot R = E - S$, and for community B : $Pb \cdot R = E - S + \text{£1,000,000}$.

If we were allowed to interpret Mr. Keynes' meaning thus, his equation would be faulty simply because it would not take into account part of the income, which equally with other parts can be directed to the purchase of consumption goods.

We are, however, saved from making this improbable supposition by the above-quoted passage from p. 124, where we read that

"if an entrepreneur spends part of his profits on current consumption, then this is equivalent to negative saving."

With regard to this, it might be alleged first of all that every spending is, after all, the same as negative saving, and that every saving is negative spending : in an equation they are opposed to each other. Also spending by non-entrepreneurs or by entrepreneurs from their normal remuneration is equivalent to negative saving.

It appears, however, from Mr. Keynes' view, according to which spending by entrepreneurs of windfall-profits is equivalent to negative saving, that in his equation he has also included this factor in his factor S , *i.e.* that S represents the magnitude that is found when the spending of entrepreneurs of windfall-profits is subtracted from the savings of the community. Only then can the above equations for community A and community B be brought into harmony with the general equation given by Mr. Keynes.

I will, however, resolve Mr. Keynes' complicated factor S into its parts again, and we shall then arrive at very important conclusions.

We will draw up a new equation, in which P , R , I^1 , and E have the same meaning as in Mr. Keynes' equation. The same thing applies to Q , which represents the windfall-profits. I introduce, however, the magnitude Sc , which represents the savings of non-entrepreneurs, and the magnitude Sw , denoting the savings of entrepreneurs out of their windfall-profits.

In imitation of Mr. Keynes, we then get :

$$P \cdot R = E - Sc + Q - Sw^1$$

Besides, Mr. Keynes introduces (p. 137) Q_1 , *i.e.* profit on the production and sale of consumption goods, and Q_2 , the corresponding profit on investment goods, so that $Q = Q_1 + Q_2$.

On p. 138 Mr. Keynes gives the equation :

$$Q_1 = P \cdot R - \frac{E}{O} \cdot R$$

and $Q_2 = I - I^1$, in which I represents the value (as distinguished from I^1 , the cost of production) of the increment of new investment goods.

Mr. Keynes then substitutes $E - S$ for $P \cdot R$ and $E - I^1$ for $\frac{E}{O} \cdot R$, in :

$$Q_2 = P \cdot R - \frac{E}{O} \cdot R;$$

the equation then becomes :

$$Q_1 = E - S - E + I^1.$$

Besides, Q_2 was :

$$Q_2 = I - I^1$$

Hence, by addition :

$$Q = I - S.$$

As, however, in our equations we have not introduced S as defined by Mr. Keynes, we must write for $P \cdot R$ what we have found for it, *viz.* $E - Sc + Q - Sw$.

We then get :

$$Q_1 = E - Sc + Q - Sw - \frac{E}{O} \cdot R$$

¹ This equation is therefore in harmony with the equation given by Mr. Keynes, $P \cdot R = E - S$, for, as we have seen above, S is the magnitude found, if the spending of the entrepreneurs of windfall-profits is subtracted from the savings of non-entrepreneurs, hence $S = Sc - (Q - Sw)$. Accordingly, if in Mr. Keynes' equation $Sc + Sw - Q$ is substituted for S , we also arrive at this equation.

$\frac{E}{O}R$, of course, remains $= E - I^1$ also for us, hence we get :

$$Q_1 = E - Sc + Q - Sw - (E - I^1)$$

$$Q^2 = I - I^1$$

$$Q_1 + Q_2 = Q + I - Sc - Sw,$$

or

$$I = Sc + Sw.$$

This result is, indeed, of a bewildering unmeaningness. There are truisms and truisms, but that, when we only closely examine what is the true significance of the factor introduced by Mr. Keynes, and substitute the factor analysed thus in Mr. Keynes' equations, we should arrive at the conclusion that they lead to nothing else than the truism that the value of new investment is equal to the joint savings of non-entrepreneurs and entrepreneurs, is greatly surprising. Through this Mr. Keynes' whole system of equations collapses, for there remains nothing but this, that new investment is paid by the savings, a truth which can serve better as starting-point for, than as the result of calculations. Mr. Keynes' result was the equation $Q = I - S$, and he himself says regarding it on p. 138 :

"These conclusions are, of course, obvious, and may serve to remind us that all these equations are purely formal; they are mere identities; truisms which tell us nothing in themselves. In this respect they resemble all other versions of the Quantity Theory of Money."

It appears from this that Mr. Keynes himself has no high opinion of all such equations. But in one respect, and this the cardinal one, he attaches very great importance to his equations. For he continues as follows :

"Their only point is to analyse and arrange our material in what will turn out to be a useful way for tracing cause and effect, when we have vitalised them by the introduction of extraneous facts from the actual world."

In this respect his equation $Q = I - S$ might be of use, for a relation is established in it between windfall-profits, the value of new investment and savings, and it would be a great step forward, especially for the theory of business cycles, if, led by this equation, we could find how, by a

modification of one of these factors, the other factors must be influenced.

Our analysis has, however, taught us that the final result shrinks to

$$I = Sc + Sw,$$

and this truism is, of course, entirely useless.

Besides, we may add that the result $I = Sc + Sw$ can also be directly derived from Mr. Keynes' result if we only substitute the analysis of the factor S , viz. $Sc - (Q - Sw)$ in $Q = I - S$. For then we find :

$$Q = I - Sc + Q - Sw,$$

or

$$I = Sc + Sw.$$

Through the analysis the factor Q , which lay concealed in S , has come to light, and is then cancelled by the same factor in the left-hand part of the equation. With this the result has been lost that Mr. Keynes seemed to have reached—i.e., the relation between profits, value of new investment, and savings.

On page 139 is given an ingenious paradox, running as follows :

"There is one peculiarity of profits (or losses) which we may note in passing, because it is one of the reasons why it is necessary to segregate them from income proper, as a category apart. If entrepreneurs choose to spend a portion of their profits on consumption (and there is, of course, nothing to prevent them doing this), the effect is to *increase* the profit on the sale of liquid consumption-goods by an amount exactly equal to the amount of profits which have been thus expended. This follows from our definitions, because such expenditure constitutes a diminution of saving, and therefore an increase in the difference between I^1 and S . Thus, however much of their profits entrepreneurs spend on consumption, the increment of wealth belonging to entrepreneurs remains the same as before. Thus profits, as a source of capital increment for entrepreneurs, are a widow's cruse which remains undepleted however much of them may be devoted to riotous living."

This reasoning is based on the equation $Q_1 = I^1 - S$, from which it should follow that expenditure of entrepreneurs, which decreases savings (S), causes Q to increase. In this

the fact is, however, overlooked that if entrepreneurs increase their expenditure on consumption goods they can spend less on new investment, so that the value of new investment (I) becomes smaller by the same amount, and therefore also $Q = I - I^1$. Consequently, the total profits of entrepreneurs remain the same.

This had, indeed, appeared at once from the modified equation which gives for Q^1 :

$$Q_1 = I^1 - Sc + Q - Sw.$$

For if Sw diminishes by spending of entrepreneurs, then, assuming I^1 to remain unchanged, and assuming for a moment that Sc also remains unchanged, it ensues automatically that if Q_1 becomes greater by the same amount as the diminution of Sw , Q must remain the same.

The conclusion is, therefore, unjustified that

“ Thus, however much of their profits entrepreneurs spend on consumption, *the increment of wealth belonging to entrepreneurs remains the same as before.* ”

This could only be true if not only Q_1 , but also total profits Q , were increased by the same amount as the expenditure of the entrepreneurs. Where, however, Q remains the same, entrepreneurs have less money available for the purchase of new investment goods, and the consequences of this are felt. While the prices of consumption goods rise, the price of new investment falls, so that not only the value of their increment of wealth will fall, but besides non-entrepreneurs will turn away from the high market for consumption goods, and will buy new investment, in consequence of which Sc will rise, and a greater part of I will get into the hands of non-entrepreneurs.

It seems to me that the fact that Mr. Keynes' paradox could not lead to a clinching reasoning is partly owing to this, that a sufficient distinction has not been made between the conception increment of wealth belonging to entrepreneurs and the conception profits.

It is sufficiently clear from what precedes that in my reasoning I have started from the supposition that modification in the price level of consumption goods by a change in

the savings must call forth a modification in the opposite direction in the price of new investment.

This is denied by Mr. Keynes, on the ground of the equations drawn up by him. That the analysis of his factor S must lead to other results than he has found is to be expected, and the fact that his equations have undergone a considerable modification by this analysis is detrimental to the structure of his whole money theory.

For he writes on p. 145 :

" Before leaving this section it may be well to illustrate further the conclusion stated above, that a fall in the price of consumption-goods due to an excess of saving over investment does not in itself—if it is unaccompanied by any change in the bearishness or bullishness of the public or in the volume of savings-deposits, or if there are compensating changes in these two factors—require any opposite change in the price of new investment-goods. For I believe that this conclusion may be accepted by some readers with difficulty.

" It follows from the fact that, on the above assumptions, the total value of the investment-goods (new and old) coming on to the market for purchase out of current savings is *always* exactly equal to the amount of such savings and is irrespective of the current output of *new* investment-goods. *For if the value of new investment-goods is less than the volume of current savings, entrepreneurs as a whole must be making losses exactly equal to the difference.*" ¹

The meaning expressed in the sentence I have italicised renders in words the meaning of equation $Q = I - S$. By the analysis we have, however, seen this equation disappear, and equation $I = Sc + Sw$ has taken its place. This is, however, diametrically opposed to the sentence preceding that put in italics, for this equation expresses that only the value of *new* investment is always exactly equal to the amount of total savings.

That in Section III of Chapter X Mr. Keynes reaches a result from which the result found here deviates so greatly, is, after all, not only owing to the way in which he defines savings and draws up his equations accordingly, but is, in my opinion, also a consequence of his interpretation of his factor I —the value of new investment.

¹ The italics are mine.

In this chapter he gives a number of very valuable considerations on the motives which influence people in the choice between holding their savings "either in the form of money (or the liquid equivalent of money) or in other forms of loan or real capital."¹

Important though these considerations are, especially for the theory of money, serious objections may yet be raised against their application here. For they are not at all in keeping with the system of the equations previously drawn up by Mr. Keynes. This is again not readily to be seen by the aid of his equations, for in $Q = I - S$ the definition of S leaves open the possibility for an erroneous interpretation of I .

By the analysis of S we have, however, arrived at the by no means complicated equation :

$$I = Sc + Sw,$$

which once for all determines I as the counter-value of total savings, so that the interpretation of the value of new investment is also irrevocably established.

How is this fact to be accounted for? How is this to be reconciled with the unquestionably correct considerations of Mr. Keynes, on the motives which lead the members of the community either to hold their savings in the form of money or to buy commodities for them?

The cause of this lies in this, that the factor I , the value of new investment, comprises not only commodities, but also money in some of its forms. Only in the case which is theoretically conceivable, but will never occur in practice—that the nominal quantity of these forms of money has remained quite unchanged—would I , the value of new investment, exclusively represent the value expressed in money of a quantity of commodities. In reality new investment is, however, always a mixture of commodities and money.

The value of new investment (I) shows an increase in consequence of creation of money only when money is created which is not counterbalanced by debts of the same

¹ P. 141.

value. Thus creation of new gold money is an increase of the value of new investment, in compensation of which either Sc or Sw would have to increase by the same amount (or both by part of the amount). If this increase of $Sc + Sw$ is smaller than the gold money creation, the value of the new investment *goods*, which constitute the other part of I , must have been diminished by the amount by which the increase of $Sc + Sw$ has lagged behind the gold money creation.

In case of creation of gold money or of banknotes, against which the central bank keeps gold, the cost price of the money is part of E , and the profit is part of Q_2 . In case the State creates token money, or even more if the State creates currency-notes, over against which it does not undertake any obligation, practically the whole amount is profit for the State, as part of Q_2 .

Banknotes which are balanced by a debt to the central bank, or deposits standing over against debts owing to private banks, do not represent an increase of the value of new investment, nor of $Sc + Sw$.

A close examination of Mr. Keynes' equations has thus led to this, that some terms have obtained such a meaning that they cannot be of use to us for the theory of money. Through the analysis of S the equation which was intended to teach us the price level of consumption goods

$$P = \frac{E}{O} + \frac{I^1 - S}{R}$$

as function of some magnitudes independent of this price-level, has become changed into :

$$P = \frac{E}{O} + \frac{I^1 - Sc + Q - Sw}{R}.$$

In this equation the magnitude Q has, however, slipped in, which represents windfall profits, and which can certainly not be considered as independent of the prices made by entrepreneurs. If by another method we should be able to find Q , this might enable us to solve P , but since this is impossible, the price level of consumption goods remains an *unsolved* problem.

For Mr. Keynes had, it is true, determined the factor Q by his equation $Q = I - S$, but we have seen that through the analysis of S in this equation the quantity Q is quite eliminated.

And, in addition, I , the value of new investment, does not represent the value of new investment goods (with the exclusion of money), as it appeared to do, so that here at least we should have a factor representing a value of goods expressed in money; on the contrary, on closer examination, this factor appears to be composed of goods and money (in different forms). This compound magnitude is also of no use to us.

Also from Chapter XII it appears that the particular interpretation of the savings is the pillar on which Mr. Keynes' money theory rests.

On p. 172 the following passage is found :

"It might be supposed—and has frequently been supposed—that the amount of investment is necessarily equal to the amount of saving. But reflection will show that this is not the case, *if we exclude*¹ from income and from saving—as we must for reasons already given—the windfall profits and losses of entrepreneurs."

Now it has actually appeared that the equality is no longer a supposition, but that it directly follows from Mr. Keynes' equations themselves, if we analyse savings as defined by him. A serious objection may be raised against the expression "*if we exclude*," for if we should "*exclude*" from this windfall profits and losses of entrepreneurs and their savings, this would lead to the first supposition made when the equations were considered, which led directly to conclusions which are in conflict with reality.²

For this reason we had to assume that windfall profits and savings from them are by no means excluded, but, on the contrary, that they are hidden in factor S .

What, however, can have induced Mr. Keynes to assume an inequality as it were at any cost, and to build his whole money theory or, more strictly speaking, his theory of business cycles on it? Should we have to assume that such a supposition of an inequality by an economist like Mr.

¹ The italics are mine.

² Cf. pp. 179-180.

Keynes had been made if in reality there was no inequality at all?

I believe that there exists inequality really, and even in two ways, though it is an entirely different inequality from that which we find represented in *A Treatise on Money*.

The first inequality is that between cost of new investment and savings (the analysed savings, not those as defined by Mr. Keynes).

Mr. Keynes has already pointed out that the output of new investment goods is determined by entrepreneurs, and that the amount that the community as a whole is not disposed to spend on consumption may differ from this. The result is then that what is not spent on consumption goods is available for the purchase of investment goods, inclusive investment in new money. For the theory of business-cycles this is a most important fact, because this in itself can disturb the whole economic organisation. The cause of this is that entrepreneurs producing consumption goods, who, in consequence of a diminution in the demand for their products, cannot get rid of *e.g.* 5 per cent. of their output, cannot dispose of this by selling the whole output for 95 per cent. of the price previously asked, but will have to make much greater concessions in order to sell off their stock of goods. Of course it may be placed over against this that for new investment also a surplus demand exists, which causes prices to be paid there which are not slightly, but a great deal higher than those previously ruling. But inevitably I remains $= Sc + Sw$, and this latter exposition has, accordingly, no other meaning than that if at first the public wished to save only a small amount, they will reach a much greater $Sc + Sw$ through the greatly lowered prices of consumption goods.

But there is another inequality, more important for the money theory. Strictly speaking, what has just been discussed is not a real inequality, for the only conclusion is here that a *slight* difference in the prices of consumption goods and investment goods which has arisen in a certain direction has the tendency to increase considerably as a consequence of an at first slight modification in the degree

of the savings, and that equilibrium is reached only when the divergence of the prices has become much greater.

A real inequality lies, however, in the fact that sometimes more, sometimes less value is attached to possession in the form of money.

It is, however, clear that in this inequality the choice between spending and saving is no longer in question, but the choice between property in the form of money and property in the form of goods. For if the public desire savings in the form of money, and cannot be induced to exchange their income in money for goods, no matter whether consumption goods or investment goods, the money paid by entrepreneurs for wages, etc. will not return to them, and this will mean automatically that S_w has decreased, and has perhaps even become negative. Undoubtedly Mr. Keynes would have arrived at a more satisfactory result if he had not tried to exclude from income and from savings windfall profits and savings of entrepreneurs, but if he had reserved a place in his equations for savings in the form of money.

Nevertheless, the complete result would not have been reached even then, for in the relation of the value of goods and money, in the theory of the price level, it is not the greater or less preference given to the possession of money in comparison with the possession of goods *exclusively with regard to new savings* that is concerned, but what matters is the greater or less preference for the possession of money in comparison with the possession of goods with regard to *all* property, both old and new. A person who has possessed a house for many years, and suddenly prefers having a deposit in a bank, brings about a modification in the price level by his offer of a house and his demand for money. If for a lower price he finds a buyer, who pays him with his bank deposit, the value of the total world quantity of goods in terms of money has diminished, and the value of the total world quantity of money in terms of goods has increased.

In this connection it is therefore perhaps interesting to

refer to a passage in Volume II, pp. 100 and 101, where we read :

“ The fault of Tugan-Baranovski lay in his holding, or at any rate implying that savings can in some way accumulate during depressions in an uninvested form and that this accumulated fund is then gradually used up during booms, etc.”

I believe, on the contrary, that there is this kernel of truth in Tugan-Baranovski's supposition, that in times of depression people demand property in the form of money, and are not inclined to convert the income received in the form of money into goods.

It is, of course, clear that all this is in flat contradiction to the following passage from Volume I, p. 173, referring to the investment of the savings :

“ It does not matter what he does with the surplus—whether he deposits it at his bank, pays off a loan or buys a house or a security—provided it is not accompanied by an additional act of investment by an entrepreneur.”

I should say : it makes all the difference whether he deposits money at his bank or buys a house, for if saving is “ to buy a house,” what then does the seller of the house do? By his wish to buy a house the individual develops demand for goods, by depositing money at his bank he does not.

The degree of preference for property in the form of money, and the question why people desire to hold their property in the form of money, is that which can give us an insight into the factor of the demand for money. As we have seen, this exceedingly important point remains unsolved. The other side, the offer of money, is introduced on p. 183 :

“ If the banking system controls the terms of credit in such a way that savings are equal to the value of new investment, then the average price-level of output as a whole is stable and corresponds to the average rate of remuneration of the factors of production.”

As here also an equality of savings and value of new investment is supposed only for a state of equilibrium, the influence of bank credit can no longer be explained in this way. Nor shall we be able to find, from the considerations

on the problem given on p. 183, how in course of time the price level will adapt itself to the larger quantity of money.

In Chapter XIII Mr. Keynes deals with the very important problem of the influence of a modification of the bank-rate on the prices. Here, too, the basis is that the equilibrium between savings and new investment is disturbed. It is to be regretted that in this way this problem is not brought nearer to its solution, for Mr. Keynes justly points out that the relation between variations in the bank-rate and the price level, though so clearly visible in practice, has, generally speaking, been very insufficiently treated in theory, except by Wicksell and some recent authors.

In addition to the fact that Mr. Keynes' reasoning remains unconvincing as a consequence of his interpretation of investment and savings, there is another point, quite apart from this, which remains unsolved by his reasoning. If a modification of the bank-rate gives rise to an inequality between the value of new investment and savings, and all further results would ensue from this, there is no explanation of the fact that the effect of a rise of the bank-rate is generally so much more acute and violent than that of a fall.

Mr. Keynes has elucidated his standpoint—already set forth so clearly in his equations and in his reasoning built up there—once more by an “illustration” (p. 176 *et seq.*) of a “community owning banana plantations and labouring to cultivate and collect bananas and nothing else; and consuming bananas and nothing else.” In this community, in which there was originally equilibrium, as Mr. Keynes conceives equilibrium, “enters a Thrift Campaign,” “but at the same time there is no corresponding increase in the development of new plantations—for one or other of many reasons.”

The consequence is that the price of bananas will fall, and since the whole harvest must nevertheless be sold, the consumer gets the same quantity as before, but for a lower price, and “entrepreneurs will suffer an abnormal loss.” They will dismiss employees, but this will be of no avail, “since the spending power of the public will be reduced by just as much as the aggregate costs of production.” “Entre-

preneurs will continue to make losses so long as the community continues to save in excess of new investments. Thus there will be no position of equilibrium until either (a) all production ceases and the entire population starves to death; or (b) the thrift campaign is called off or peters out as a result of the growing poverty; or (c) investment is stimulated by some means or another, so that its cost no longer lags behind the rate of saving."

This illustration is very instructive. For since we have seen that the equation $Q_1 = I^1 - S$ was so greatly modified by the analysis of S , and always $I = Sc + Sw$, there is no denying that decreased demand for consumption goods leads, through saving, to increased demand for investment goods, so that over against losses of entrepreneurs producing consumption goods stand profits of those producing investment goods. In so far, the illustration leads only to a negative result.

But there is a form of saving that does not lead to purchase of investment goods—goods taken as excluding money—viz. when people wish to hold their savings in the form of money. If, therefore, the illustration is modified in such a way that people are supposed suddenly to wish to save part of their income in the form of money, it can teach us how losses for entrepreneurs may ensue from this. It should, however, be pointed out that, as was shown above, such a preference for possession in the form of money need not refer especially to the savings, but may refer to all property. Thus the problem has again become: what leads people to prefer money to goods, or goods to money at a definite price level? or rather: how can the relation of exchange between goods and money be found in connection with the intensity in which goods against money and money against goods are demanded and offered in exchange? It is still the problem of the value of money in its original form.

SECTION II

THE YIELD THEORY OF THE VALUE OF MONEY

CHAPTER XIV

THE FUNCTIONS OF MONEY

§ I. THE FUNCTIONS OF MONEY

MONEY chiefly fulfils two functions: that of *medium of exchange*, and that of *standard of value*. The most important is that of *medium of exchange*. This function consists in this, that as a rule we do not directly exchange goods for goods, but that we nearly always make use of money as medium: we first exchange our commodities for money, and then procure the commodities that we wish to possess by means of the money.

The direct exchange would be the more natural course. Accordingly, there must be good reasons why we depart from this. The reason is that the possessor of the commodities that we wish to obtain by exchange will only very rarely desire to acquire those particular goods that we ourselves have to offer. On the other hand, money is so universally used as a medium in exchange transactions that every person readily accepts it in exchange for the goods which he has to offer, because he, in his turn, will also find him whose goods he wants to acquire ready to give those goods in exchange for the generally acceptable medium—money.

Thus a tailor, *e.g.*, who wants bread, will in vain offer a greatcoat, if the baker does not need it, or possibly desires another greatcoat, which is more to his taste, and which he cannot get from this tailor. At best the baker might consent to accept it against a *considerable concession* in the conditions of the exchange—in other words, the tailor would get much less bread than the greatcoat was worth. Thanks to the general use of the medium money, the tailor

can, however, first sell the greatcoat to somebody who is willing to give the full value for it, and with the money for which he sells it he can buy the bread he wants from the baker.

There are two more advantages connected with the medium of exchange. The first advantage ensues from the fact that money can be divided into any desired quantities. For even if the baker in question happened to be willing to accept this greatcoat, its value would be so many loaves that it would be too much for the tailor. He would then obtain possession of a quantity of bread which in some way or other he would have to exchange again with others, which would certainly cause *waste of trouble and labour*, possibly also concessions in the conditions in the further exchange transactions.

This difficulty might be obviated if the tailor arranged with the baker that only part of the loaves should be supplied at once, and the remainder gradually in course of time, according as they were needed. There is, however, a risk attending this arrangement—*i.e.*, that the baker might not always continue to fulfil his obligations, which risk might again lead to a *loss* for the tailor. The use of the medium of exchange obviates this difficulty. It is also possible that the tailor's resources are not so large that he can afford to hold part of his property in the form of a claim on the baker. Probably he will want to again buy the materials necessary for his trade, and is hampered in this if he has a claim in loaves on the baker. For even if he can again obtain what is necessary for his trade by means of the claim on the baker, here, too, it is much more likely that a concession will have to be made in the terms of the exchange than when he makes use of the medium of exchange.

Another advantage attending the use of money as intermediate good lies in the fact that money is not perishable. For it is possible that the tailor at the moment does not feel the need of any other goods at all. But the greatcoat which he has made will not be the better for remaining unused for a long time, and this applies to other goods to

a much greater degree. The milkman and the green-grocer must get rid of their wares as soon as possible, even if they themselves have no direct wish to receive other goods in exchange.

If they exchange their products for money, they *reserve the choice* of the goods that they will want to obtain in due time, and which they will then be able to obtain on the most advantageous terms by means of their money.

It is clear how great are the advantages attending the use of money as mediator in exchanges. It is another question how money has succeeded in securing such a position that it is universally used as medium of exchange. For though it is clear that anybody who lives in a society in which everybody readily accepts money in exchange reaps the fruits of it, and this in virtue of the fact that he can be sure that with money he can procure goods in exchange in the most advantageous way, this still does not explain how money has reached this strong position historically.

The historical development has, however, proceeded along a perfectly logical line. That is to say, already, in times of primitive exchange relations, there were particular kinds of goods that offered advantages as medium in exchanges. The *economic quality* on which these advantages rested consisted in the fact that these goods distinguished themselves from others in that they were more *marketable*—that they were universally desired in unlimited quantities.

The addition referring to the quantities is not superfluous. For several foodstuffs were, *e.g.*, in so far current in the market that everybody needed them, but only in limited quantities. Besides, for every one individually the demand stopped abruptly at a certain point, because further quantities would spoil before they could be consumed. It has been historically ascertained that ornaments, precious stones, cattle, and also slaves were used as medium of exchange, because here the demand was more elastic, and there was a relatively constant demand for any quantity offered.

The advantages of the more marketable articles were, in principle, the same as the advantages already mentioned

connected with money. In a direct exchange of less current articles people were at once confronted with difficulties, which hampered the exchange, and which, besides causing trouble, also possessed direct disadvantages through less favourable conditions of exchange. These inconveniences were obviated by the use of more current articles as intermediate good.

Now it is peculiar that these particular species of goods which were already more marketable than others, because there was a more universal demand for them in indefinite quantities, became still *more marketable* because there was a still greater demand for them, on account of the very fact that they acted as medium of exchange. Both for *economic* and *technical* reasons, the precious metals have taken the lead in course of time, and have ousted all other goods as medium of exchange in countries with a highly developed system of exchange.

The economic reason was that just with these articles the demand was exceedingly elastic. For the precious metals were used for ornaments, the demand for which does not remain restricted, as with many consumption goods, to a more or less constant and limited quantity. Therefore a person who received precious metals in exchange could with more reason expect to meet a demand for these than for other goods. It may seem strange, perhaps, that the first and indispensable necessities of life, which everybody needs, were less adapted for use as a medium of exchange. But it is, on the other hand, comprehensible that everybody took good care to be sufficiently provided with the first necessities of life, and that further offers met with scanty interest. But everybody who had provided for the first necessities remained a buyer of things of generally desired luxury.

The *technical* reasons were various. First of all this, that the precious metals are little subject to decay. It was therefore also possible to accept a quantity which exceeded that required to meet the normal need, and which could be set apart for later use.

Secondly, their divisibility into any desired quantities,

which could be measured by weighing or by other methods.

Thirdly, their high value in exchange, on account of which sufficient quantities of required other goods could be obtained in exchange for small quantities, which could be easily transported.

According as the exchange system developed further, the continually repeated weighing of the required quantity of medium of exchange in every exchange transaction became inconvenient; another difficulty being that the degree of purity of the precious metal was not easy to ascertain. In order to overcome these difficulties the governments proceeded to put their stamp on pieces of gold and silver, which was intended to guarantee a definite weight and fineness. This expedient, too, has proved to be inadequate in practice. When the users of money had accustomed themselves to a certain stamp, and deemed further control as regards weight and fineness superfluous, the stamp was often impressed on coins of inferior weight and fineness. This evil of the debasement of the money was often nourished by the error that the money unit always remained the money unit. It was thought that a coin that continued to bear the same name also retained the same value, an error into which people have often fallen up to the present day, both in theory and in practice, until the depreciation of the currency went so far that the ensuing high prices proved the fallacy.

Summarising the historical development, which rests on economic grounds, we can state that from the times of the most primitive organisation of trade there have been particular goods that distinguished themselves for some technical and economic reasons—above all, their greater marketability—from the others. Hence the use of these goods as medium of exchange offered certain advantages, and when they did serve as such, this again promoted their marketability, and this favoured again their use as medium of exchange, etc. In course of time the precious metals took the lead, in which, however, a drawback attached to the use of them—viz. the difficulty of determining weight

and fineness—was obviated by the authorities, though not quite adequately, by their putting a stamp on the pieces of metal, in order to guarantee a definite weight and fineness.

By the side of the original medium of exchange the claim to money has gradually begun to act as money. That this was possible follows from the exposition given above regarding the function of medium of exchange. For the marketable article was not accepted in exchange because the receiver wished to consume it, but because he himself could obtain in exchange other goods with it in the most *advantageous way*, as soon as the need of it was felt. If anything else were conceivable that others would accept in exchange for goods with the same readiness as cash, this could equally well fulfil the function of medium of exchange. At first in isolated cases, later in innumerable cases, the claim to money has satisfied this condition. For just because money was not consumed, but passed on to others in due time, the chief requirement was that others should be willing to receive it in exchange. The claim to money can fulfil this condition to a certain extent. When A sold a commodity to B, it was not always necessary that B paid in cash, and notably not if A could be sure that others would equally well accept the claim on B in exchange for their goods. A first requirement for this was, of course, that B's credit could not be called in question, so that a claim on him could be completely relied on, and there could never be any doubt that it could be redeemed. Another condition was that A could be trusted to have a claim on B. A third condition was that the credit of A, as well as that of B, was *known in a sufficiently wide circle*, for without this the claim would again not be sufficiently marketable to be able to serve as medium of exchange. Only on a limited scale and in a narrow circle have claims on individuals been able to fulfil these requirements. Much wider was the region in which claims on well-known banks could act as medium of exchange, still wider the deposits at banks of issue, and the territory became widest for the promissory notes issued by such banks or by the State.

In this respect the promissory notes of the central banks offered the best chances. In usefulness they exceeded the deposits, because with the latter it is not only the bank, or the central bank, that is concerned, but in addition it had to be certain that the person who paid with them actually could dispose of a credit balance. This difficulty was eliminated with the promissory notes of the central banks—the bank-notes—and only the credit and the standing of the central bank in question played a part. The development of the modern banking system has been such that in normal times credit, strictly speaking, does not constitute a point of consideration, so that bank-notes circulate continually without there being any question that the holders want them to be redeemed.

Inside the frontiers of a country bank-notes have quite appropriated the function of the precious metal. The Government has favoured this by declaring bank-notes to be legal tender. It is true that this is not of preponderating importance when new exchange transactions are to be completed, because people cannot be compelled to part with their goods in exchange for legal tender if they cannot place any confidence in it. For the paying of existing debts the promotion of bank-notes to legal tender is, however, of direct importance: for now people have a right to discharge their debts by means of this legal tender, even if the creditor should not desire it.

Besides the question of the credit and the standing, bank-notes have also the further advantage over deposits, that they are issued in several convenient denominations.

But for very large amounts a credit balance presents advantages, so that the wholesale trade, which, on account of its more limited circle, knows the depositor, makes frequent use of this medium in exchanges.

Even for the central bank the circle which accepts its notes as readily as precious metal is limited and restricted to the country in which it is established. Abroad as a rule people will be willing to make exchanges only for claims on banks in the country itself. The business man who wants to buy in foreign countries must generally first obtain a

bank deposit from a third, and can buy with this the goods in the foreign country. When no credit balances at banks in foreign countries can be obtained in a sufficient quantity in one's own country, it becomes more profitable to send gold, because the possibilities of use for the notes issued by the central bank are almost entirely restricted to the country itself.

Within the frontiers it may, however, be assumed with reference to the majority of people that they do not regard bank-notes as a claim to a current article which itself has only temporarily assumed the function of medium of exchange. This function has become quite definitive. The claim is never presented to be redeemed, but continues to circulate as money.

As we have seen, paper currency has a double meaning. First, it constitutes a claim on a central bank ; secondly, we can pay a debt with it, because it has been declared legal tender.

The paper money issued by the State has only the last meaning : it gives an opportunity of paying off debts, because it is legal tender. And in particular it enables us to settle debts to the State. Therefore it is quite logical that we can use this marketable article, for which there is always demand for settling debts to the State and to others, as medium of exchange. Also for this money the chief conditions are fulfilled on the strength of which it can act as medium of exchange : it has already value for another reason, and it is a marketable article.

It is, however, clear that the issue of paper money by the State could not become possible until the public had already become familiar with other forms of money. A one-pound currency note could only have a real meaning after a sovereign had become sufficiently generally known as money. For only then the real meaning of the one-pound currency note was that a debt to the State, or another debt inside the country, could just as well be paid with it as with a sovereign.

The token coins and the change, which are not intrinsically worth the amount they represent, rest on the same

principle as the paper currency issued by the State. By means of them, too, we can pay debts to the State and to others inside the country as if they were worth the amount they represent. For this reason they can also perform the function of medium of exchange. In reference to the token money, this peculiarity should be mentioned, that originally it frequently possessed a value equal to that of the weight of the metal it contained. In countries which, like Holland, had the silver standard in former times, the silver currency, which at present functions as token money, had originally intrinsically its full value—*i.e.*, the weight in silver that it contained had the same value, whether with or without the Government stamp. After these countries had adopted the gold standard, many people will perhaps have thought that they were still in possession of money with an unaltered value as to the metal it contained. In principle, however, this fact is of no importance, because instead of one characteristic—*i.e.*, that of the value in silver—another had come—*i.e.*, its competence to pay debts to the State and to others as if it were gold money with intrinsic full value.

Recapitulating, it appears that the different kinds of money all have this in common, that they already had value apart from their function of medium of exchange. In some cases—the original cases—it was the value of the material of which the money was made; in other cases it was the claim to this material; in still others it was its power to pay a debt. In all these cases the function of medium of exchange was possible, because the holder had in hand an article current in the market, which offered advantages in the exchange of goods and rendered services that far surpassed the possibilities of barter.

The second function of money is that of *standard of value*. This is in very close, though not necessary, connection with its function of medium of exchange.

The function of standard of value consists in this, that we measure the value of our possessions in money. It would, of course, be just as possible to express this value in other goods. A dealer in coffee might, *e.g.*, express his

possessions in kilograms of coffee of a definite quality, and draw up his balance-sheet. Nor would it be impossible that coffee or some other article was generally accepted as standard of value instead of money. But it is again in the logical line that the most marketable article was chosen to render us this service. For if the dealer in coffee should have measured his possessions and expressed them in his balance-sheet in kilograms of coffee of a definite quality, even then he could not make a clear comparison with former balance-sheets, since every special article in itself can be considerably modified in value, and such a balance-sheet would give a very imperfect comparison with earlier periods! Nor in this respect is money able to give an accurate idea. For the value of money has also continually varied. It is, however, a result of the function of medium of exchange of money that we always have a fairly complete idea of the prices of goods in money, whereas we cannot form an idea of the exchange relation of the goods among themselves until we have compared how each of them separately is priced in money. The most direct way to measure the value of goods is, therefore, by the aid of money as standard of value.

The standard of value money is, however, a measure of a very particular character, and we should be careful not to carry the parallel with other kinds of standards too far. Standards of length and weight, etc. are very accurately determined, and in this determination the different circumstances are taken into account. Thus for the kilogram it has not been thought sufficient to indicate this as the weight of a litre of water, but the fact has also been taken into consideration that the water can vary in different circumstances—of pressure and temperature. When defining the unit of weight a definite temperature and a definite pressure have been assumed as condition. This has made it possible to determine weights, and to compare them at different points of time with different circumstances.

This perfection has not been attained with the standard of value—money. We take as standard of value the guilder, the pound sterling or the dollar, and we do not further state

the circumstances in which the guilder, the pound sterling or the dollar must be, so that to-day we make our comparisons with a pound which has another value than the pound in which we expressed the value of our goods a year ago.

Endeavours have been made to surmount the difficulty of the variability in the value of the unit of value by deducing this value from a great number of prices of different kinds of goods in money. By this method of the determination of the index-numbers it is possible to ascertain, at least approximately, in how far the value in exchange of the unit of value itself has been modified. The system of the index-numbers has been adopted not so much from theoretical as from practical considerations, for the fluctuations of the price level have always caused unjust enriching of some groups of the population, and impoverishing of other groups, and the index-numbers furnish the control of the price level, and with it, *to a certain extent*, of the unjustified advantages or disadvantages.

The addition in italics is by no means superfluous. For it has frequently been assumed that with a constant price level advantage to, or injury of, debtors or creditors and of holders of money would be excluded. I regard this conclusion, however, as a rash one. For if we could guarantee debtor and creditor and holders of money a constant price level, this would mean that claims and debts could be settled with constant quantities of an average of the different kinds of goods. This we could by no means designate as the ideal of justice, for in times of scarcity the sacrifice that the debtor had to make to settle his debt would be greater than in times of abundance. When the harvest is plentiful and industrial production is increased by technical inventions and improvements, the producer can supply the same quantity of the average of the kinds of goods at a much smaller sacrifice than in times of scarcity and adversity. And when the unit of value is brought in a constant proportion to the average of the species of goods, the value in exchange of the unit of value is indeed a constant, but the sacrifice involved in supplying this unit of value is by no means constant.

Accordingly the method of the index-numbers can only give information about the variations which the value in exchange of the unit of value has undergone, and not about the variations in the way in which the demand for money is covered by the supply, or about the variations in the marginal utility of the commodity that can be bought for the money unit. Yet a perfectly just standpoint would have been reached only if the debtor had to pay his debt, and the creditor could cash his claim, in money the demand for which was always covered by the supply in a constant way.

After the question of justice and right, that of the practicability comes up for discussion. When the producer has received credit, the payment of this becomes more difficult for him when the harvest falls below his expectation. Under normal circumstances, however, he receives compensation for a bad harvest by the higher prices. If money is managed at a constant value in exchange, the prices are not allowed to rise on an average. The prices will be pressed down by restriction of the circulation, and the difficulties of the producer will be increased. Generally only part of the production will suffer by unfavourable circumstances, so that under normal conditions only part of the prices will rise as a consequence of the smaller production. If now the general price level is forced down, those articles are also affected the production of which had not undergone any change. From this ensues a certain division of the difficulties—the producers who have been able to produce less receive part of the compensation through the higher prices of their products, but the other producers now get smaller proceeds from their articles than would have been the case had the money not been managed. The whole production consequently gets into difficulties. The producers will, all along the line, be artificially injured for the benefit of the money-lenders, to whom, in a period of decreased production, a constant quantity of goods is quite arbitrarily guaranteed. For though indeed the money-lenders also get less of those goods that have become scarcer, they get so much the more of other goods, and the inevitable result is that all the

disadvantages fall on the others. Managing of money to maintain a constant value in exchange must, in this way, lead to an economic crisis, as the producers will not be able to give a constant quantity of a smaller produce to their creditors.

This, however, does not imply that under all circumstances managing of the currency is undesirable and inefficacious. On the contrary, it may appear from the above that the undesirability and the inefficacy in the above-mentioned case resulted from the fact that the cause of the modification of the price level was supposed to have originated on the side of the goods. My objections do not apply to cases in which the cause does not lie on the side of the goods.

With regard to the formation of the value of money, the function of standard of value is entirely different from the function of medium of exchange. A person who wishes to be able to make use of money as medium of exchange must possess it, and a person who acquires the intermediate good money through sale of goods, in order to be able to obtain other goods more easily and on more favourable conditions at a later point of time, detains part of the quantity of money from the moment of the sale of his goods to the purchase of others. In order to be able to make use of the money as medium of exchange, he must begin by developing a demand for money in exchange for goods, and after acquisition of the money he detains this part of the store of money for some time.

The function of standard of value has, however, no influence whatever on the formation of the value of money, as it does not give rise to a demand for money, and the function is performed by money irrespective of its being in our possession or not.

§ 2. A FUNCTION THAT MONEY DOES NOT FULFIL

Among the functions of money, that of means of payment is often mentioned, and this supposed function has often played an important part as basis of the theories of the value of money.

Thus the thought of the function of means of payment is interwoven in the theories which indicate the velocity of circulation of money as one of the factors that determine the value of money. For the number of times that the same money is used in payments during a certain period finds a place in these theories.

It seems to me, however, unjustifiable to distinguish a separate function of means of payment by the side of the function of medium of exchange. This has needlessly created difficulties for the theory of the value of money, and by the side of the actually existing differences with the theory of the value of other goods it has raised others.

For a perfect parallel can be drawn between the delivery of goods and the payment of money. They are exactly the same thing under another name. A person who gives goods in exchange for other goods or for money undertakes the obligation to supply these goods at the moment fixed in the contract. And a person who buys goods for money has to supply the money at the stipulated moment.

This comparison holds good also in the case of a loan. A person who borrows a good, must return it at the stated time, and a person who borrows money must also return it when due.

In an economic sense no difference can be detected between delivery of goods and payment of money. Both are the necessary consequence of the agreement previously made—they are only the winding up.

The medium of exchange is a means to attain an end : the facilitation of the exchange of goods. But the means of payment is no means to attain an end—it is the thing itself that is to be paid, because it has been thus agreed. With no more reason could we say when we have sold coffee that the coffee that is to be delivered is a means of delivery : it is the coffee sold that is to be delivered, nothing else.

The matter is slightly different with the "legal tender." This is a juridical qualification, which has economic consequences. The significance of this juridical qualification is that an obligation undertaken to pay a certain quantity of

medium of exchange may be settled with the same quantity of this "legal tender." This makes the legal tender actually a means of payment to settle obligations entered upon. It is true that, from the moment that the legal tender has thus been juridically qualified, it begins itself at once to serve as medium of exchange, because through this qualification it satisfies the conditions required for this possibility.¹ Accordingly, the legal tender is then no longer a means to discharge a debt, but it has itself become part of the contract entered upon.

That money is not a means of payment, but itself part of the obligation, does not imply that the payment has no influence on the value of money. But, then, this influence is not due to the payment itself, but to the necessity of having to pay. The payment itself will neither raise nor lower the value of money, but the person who must prepare himself to be able to meet his obligation to pay at a stated time will have to ensure beforehand the possession of money, *i.e.*, he will either have to produce it, or acquire it by means of exchange, or borrow it—at least if the money was not already in the debtor's possession when the obligation was entered upon. If this is not the case, the debtor, in order to prepare himself to meet his obligation, will develop a certain demand for money, which may exercise an influence on the value of money.

This will be more fully discussed in the chapter on the Demand for Money to Discharge Debts.

We may now proceed to the real task that we have set ourselves in this book: the search for the factors that cause and determine the value of money, and the determination and explanation of this value.

For a further elucidation we shall first examine the factors determining the stores of merchandise of the tradesmen and the stores of consumption goods of the consumers in volume and value.

Then we shall be able to follow the factors that determine the value of money.

¹ Cf. the first paragraph.

CHAPTER XV

VOLUME AND VALUE OF THE STORES OF PRODUCERS AND DEALERS

EVERY dealer, both the wholesale and the retail dealer, keeps stores of the commodities in which he deals, because this is conducive to the success of his trade. In most cases it would even be quite impossible for a tradesman to carry on his trade if he had not always at his disposal a store of commodities. His customers do business with him for the very reason that they know that they can always at once get from him the commodities in which he deals.

The economic advantages which the trader's stock offers to his customers are clear. For if there were no dealers who applied themselves to the trade in special kinds of commodities (or sometimes whole series of species of commodities), every consumer would be obliged to procure personally not inconsiderable stocks of everything that he might possibly require in course of time for his consumption till he could purchase a new supply from the producer. Also the producer keeps a store of finished products on behalf of his customers. In an economic sense the significance of this is the same as the stores of the dealers. This significance is that the stores, which otherwise all the different consumers would have to lay in, are concentrated into a more limited number of hands, by which much can be economised with regard to the total store of commodities, and which also ensures that the commodities can reach the desired destination at any time.

If, *e.g.*, we were not always certain that we could obtain clothes either from the producer or the shop, as soon as we want them, we should find that we ourselves were compelled to keep a considerably larger supply of all articles of dress

which we might possibly need in various different contingencies before the producer could have made them to our order. Now we can either buy them ready-made direct from the stores which the shopkeeper holds, or we can have them made in a very short time from the stores of materials (the nearly finished products) which the tailor keeps in stock.

Besides economy with regard to the total volume of the stores, concentration of the stores into a more limited number of hands also ensures that the commodities will reach their destination in a more efficient way. For if, in order to be prepared for all contingencies, we should have to keep stores of innumerable commodities, part of them might perhaps spoil in course of time. Perhaps, too, our wishes might take another turn, so that the commodities would be of less value for us. The smaller our stores, the greater the chance that the consumption will yield the greatest utility. It is therefore an economic advantage that stores are mainly concentrated in the hands of producers and dealers, so that everybody can choose from them whatever he wants and whenever he wants it.

In addition to stores with producers and dealers and stores with consumers, there is a third possibility—*i.e.* no stores—hence production exclusively to order, always after the need of the good has made itself felt by the consumer. This alternative has already been referred to above. We need not dwell on this point, for the disadvantages of such a system are obvious. After the consumer had realised the need of goods for his consumption, he would always have to wait some time, instead of being able to supply his need at once. Thus the advantages connected with the formation of stores, which enable the consumer always to satisfy his demand immediately, are considerable.

An advantage of the greatest importance is also that, owing to the stores of the retail trade, the commodities reach the consumer from the producer who produces on a large scale, or from the wholesale dealer, in the most economical way. The clearest example of this is the large modern department stores, which order all kinds of commodities of the most divergent nature from producers and wholesale

dealers in large quantities, and then sell them again one after another to the public. It is a great convenience to the consumer who wants a thermometer or an alarum clock that he need not order one from a manufacturer, but can simply go to a shop in the neighbourhood and choose one there out of the stock.

Having thus seen that the keeping of stores offers economic advantages, we must now examine in what way the producer and the dealer are rewarded for having them.

As we have seen, the consumer has three choices—first he can order goods from the producer who does not keep a stock, after he has found out that he wants a certain article for consumption; secondly, in time he can himself lay in stores of everything that he might possibly need; thirdly, he can draw from stores which producers and dealers keep.

In the first case he must do without the desired good for some time after he feels the need for it. If, therefore, he finds a producer or dealer who has the commodity desired by him in stock, he will be prepared to pay a higher price for the immediate delivery. The reward of the tradesman consists, then, in this, that he can replenish his stock for a lower price by order on delivery.

The consumer might also have laid in stores himself, and for a number of articles—the articles of daily consumption—he does so on a limited scale. Every pantry contains various kinds of provisions, sufficient for a number of days or weeks. Some articles, such as coal, are laid in by many consumers in quantities sufficient for a whole season. If, however, we should have to lay in everything that we might possibly need at some time or other, every house would have to be a warehouse, in which many goods would spoil and other goods would never be consumed for other reasons. Let us illustrate the latter case by gramophone records. A lover of gramophone music would have to collect a fairly complete store of records in order to be able to draw on this in case he should wish to hear a certain record. It is therefore a great advantage for him that stocks of gramophone records are kept by the producers and dealers, so that he and all other lovers of gramophone music can draw from them. In

return for this advantage, lovers of gramophone music are willing to pay a price to these tradesmen and producers which includes a reward for their keeping these stocks, and which at the same time constitutes a great saving for the consumer, since he is enabled to keep a much smaller store.

As regards the amount of the reward of the tradesman and producer for keeping these stores, the maximum of this can be theoretically determined. In the first place, this maximum is determined by the alternative mentioned above. If the dealer charges the consumer who wishes to draw from his stock an excessive price, the latter has the choice left to do without the good for some time, and order it from the producers, to be delivered as soon as it shall be ready.

In the second place, the maximum is determined by the possibility of the consumer having stores himself. It depends on the nature of the consumption good whether theoretically the maximum is determined by the first or by the second factor. With an article like gramophone records, *e.g.*, the first will be decisive. The consumer will have to put up with the small inconvenience of having to wait for the article till the producer shall have manufactured it to his order. His inconvenience would be much greater if he should try to do without the services of the dealer, and if he should collect a large store himself. For most goods of daily use, on the other hand, the second factor is decisive. If, *e.g.*, the consumer should discover that his coal merchant always charged him an excessive price if he ordered every time one hundredweight of coals, he would decide to lay in a large stock and buy it from the producer before the commencement of the cold season. Here, on the other hand, the inconvenience would be much greater if he had to wait for delivery after having ordered a supply, and in the meantime had to sit in the cold. Accordingly, the maximum of profit to be made by the merchant will always be determined by the choice that produces the fewest inconveniences to the consumer, if he should have to adopt it as alternative, when the tradesman asked a too great profit. In the case of the gramophone records the maximum limit is set by the

option that remains to the consumer of buying for delivery upon completion. In the case of coal and many other goods of everyday use this maximum limit is determined by the possibility of laying in a stock oneself.

The tradesman will, however, be able to work with success in both cases if he takes care that the sacrifice which his customers have to make by allowing him a profit, is smaller than the sacrifice involved in the most favourable alternative for his customers.

So far the question was only of kinds of goods, but we may now consider more closely the different qualities, and finally the quantities, of each kind of goods and of every different quality of each kind of goods.

Most species of goods can be supplied in the greatest variety of qualities, taken in the widest sense of the word. Thus a dealer in shoes will not have merely a stock of shoes, irrespective of the kind of shoe, but he will have stores of shoes of different qualities of leather, of different shapes and makes, and of different sizes. He thus renders his customers a greater service than if he should only keep a stock of shoes of the same quality, make, and size. But the importance of these stocks, divided according to quality, etc., will greatly differ among themselves. The qualities most in request will yield the greatest utility to his customers, because they will be bought most frequently. Qualities, makes, and sizes less in request will offer fewer advantages to the customers, who will less frequently make a choice out of them. Then there are qualities, makes, and sizes that are asked for so rarely that the service they could render to the purchaser would not compensate for the long period they would have to be kept in stock. In these cases the customer will order the articles for delivery upon completion. From the qualities which are greatly in request, and which are the most useful to the buyers, we finally get in this way to qualities that are so rarely wanted that they would not yield sufficient utility to justify keeping them in stock. Then the marginal case has been passed—the case in which the stock yields the customers just sufficient utility to justify the tradesman in keeping it.

A factor of the same nature as the quality of the article is the place where the commodities are stored. If the shop is situated at too great a distance from the residences of a number of purchasers, they will be benefited if another shop with a similar stock of commodities is opened in their neighbourhood. Here, too, however, a marginal case will always be reached in which further diversification will not be able to yield sufficient utility to them.

We now proceed to the question mentioned above of the quantities of the different kinds of commodities and of the different qualities. If the tradesman keeps a too scanty stock, this may lead to the disadvantage that it will frequently be quite exhausted before he has time to replenish it. According as he enlarges his stock, this case will present itself less and less frequently. In the end it is possible to increase the stock to such an extent that even in case of the most unexpected increase of demand the stocks of the different qualities would appear to be sufficient to meet it. Then, however, under normal conditions the stock would have to be kept too long, or, what is the same thing, would too rarely render services. Accordingly, the quantities of the different qualities must be chosen so that the stock can be turned over with sufficient rapidity. There is therefore, for every kind of commodity, and for every quality, a limitation of the quantity, a marginal quantum that can yield just sufficient utility. With a smaller quantity more would be wanted, with a larger quantity the last remaining part would be comparatively superfluous.

The utility gained by the buyers from the traders' stores finds expression, as we saw above, through the fact that they pay him a higher price than they would be willing to pay him in the case of orders on delivery. The tradesmen then replenish their stocks by themselves ordering on delivery (for so far, at least, as they in their turn do not again draw from the stocks of other tradesmen, and eventually from producers). Their profit lies then in the difference between the prices which their customers pay and those which they have to pay themselves, *i.e.* the reward for the services that their stocks yield to their customers.

With a limited stock the utility per unit will be so great that the buyers would be able to pay high profits, and the tradesmen could charge them with success. With increase of the quantity there will always come a moment at which the services per unit of the stock will be still just rewarded by a profit covering the normal cost, interest, and a remuneration for the trader's work.

We have now reached the real purpose of this chapter : the determination of the value of the commercial stocks.

The theory of value has reduced the value in exchange of commodities to four factors :

- (1) The volume of the demand ;
- (2) The intensity of the demand ;
- (3) The volume of the supply ;
- (4) The intensity of the supply.¹

The demand for commodities arises, of course, in the first place from those who desire the goods for consumption. But this is only part of the demand, and for many goods—the production goods—there is a demand only from producers who wish to apply these goods in their process of production. Nor does the demand for consumption goods exclusively arise from the consumer. For almost all consumption goods form part of commercial stocks for shorter or longer periods, and therefore there is a demand for these consumption goods on the part of the tradesmen for the sake of these stocks.

In contrast with the demand of the consumer, the demands of the tradesmen are, accordingly, not based on the utility yielded by the consumption, and need not by any means run parallel with it.

The motive of the demand of the tradesman, for the sake of his stock, lies exclusively in his wish and expectation to gain *profits* by means of it.

This profit can be of two kinds—first, it can accrue from the actual business transaction of the tradesman, and secondly, from speculative chances in connection with

¹ Cf. von Böhm-Bawerk, *Kapital und Kapitalzins*, 3rd edition, p. 392 *et seq.*; also for the further subdivision of the factors of intensity of the demand and supply.

possibilities of rises in price. Both possibilities raise expectations of profit with the tradesman, in which, for the rest, it should be observed that the speculative possibilities can also turn against the trader in consequence of a fall in prices, and partly devour the real commercial profits, or even result in a loss.

Let us for the moment confine ourselves to the real commercial profits, in so far as they result from the services rendered by the tradesman's stocks to supply the wants of his customers.

The motive for the formation of stocks being the expectation of making profits, the demand for goods for the formation of stocks is determined by the quantity of the expected profit. Suppose the tradesman is accustomed to keep a stock of goods, from which he regularly sells, and which he regularly replenishes. He is then, of course, in the first place intent on applying such a selection in the formation of his stocks that he always has in stock such kinds and qualities of goods, divided into such quantities of every kind and quality, that he gains a maximum profit on the capital thus invested. Let us suppose that with this average stock of goods, after deduction of normal expenses and the entrepreneur's remuneration, he makes a yearly profit of 10 per cent. on the invested capital—*i.e.* that at the end of the year his possessions have increased to such an extent that, taking normal expenses and remunerations into account, he would have at his disposal a stock of goods $11/10$ times the amount he had at the beginning of the year. Let us also suppose that the rate of interest is 5 per cent., *i.e.* that in general an interest of 5 per cent. can be obtained either by employing one's capital in the production or by lending to those who require it for consumption purposes.

The fact that the business stock yields a profit of 10 per cent. can then result from two causes. First of all this profit may include a special entrepreneur's profit. This means that, for some reason or other, the tradesman occupies a privileged position, from which he cannot be easily dislodged by competition. These reasons may be various: an artificial (conferred) monopoly; a particularly favourable

situation of the place of business; the special personal business or organising ability of the tradesman; favourable economic conditions in consequence of increasing prosperity; growth of the place where the business is established, etc., etc. In the second place, this profit may result exclusively from the fact that the volume of the commercial stock is not yet sufficient to meet the needs of the public —*i.e.* that a greater choice of goods would still be of sufficient utility to the public to induce them to pay a sufficient price for this to leave a normal margin of profit. If the supposed business is a shop, competition may be expected by another shop being opened. Here two cases may be distinguished. The first is that the competitor opens his shop in the immediate neighbourhood of the other, through which only competition arises, without a new service being rendered to the public. The second case is that the new shop is established in another district, which allows the inhabitants of the other district to profit by the fact that they can procure their goods nearer home. Here, too, there is competition; but as there is also a new service rendered to the public, the competition will less rapidly reduce the profit to a minimum.

In both cases, however, the opening of the new shop will involve the cost of a second stock, while the profits of the two shops conjointly will not show the same favourable proportion with regard to the two commercial stocks conjointly as was previously shown by the profits of the one shop to those of the one commercial stock.

In general, it can be said that the effect of competition is that so many stocks are kept that a normal profit corresponding with the normal rate of interest of the moment (after deduction of normal expenses and reward for the entrepreneur) remains.

In connection with this the demand of the joint tradesmen can be determined. If the net profits are 10 per cent. per annum, without there being any question of a special entrepreneur's profit due to particularly favourable circumstances being included in this, the tradesmen are induced to increase their stocks in order to gain greater profits. We

may assume that already, with the existing stocks, they have exercised such discretion in the selection and formation of them that they have exactly those stores in such quantitative proportions that a maximum profit is made. This necessarily means that a smaller profit will accrue from further stocks. The profits will decrease, so that, *e.g.*, a profit of only 9 per cent. can be made on the new total stocks. Also then the further formation of stores remains alluring, and if the rate of interest is 5 per cent., there will always be a demand from the side of the tradesmen for the enlargement of their stocks, until they have increased to such an extent that the public does not pay a greater profit than 5 per cent. net.

Then further demand for the *enlargement* of the stocks ceases. But for replenishing their stocks after sale of goods—hence to keep them at a certain level—demand continues to exist on the side of the tradesmen. And this demand for the sake of keeping the supplies sufficiently large competes, of course, with the demand for direct consumption.

For if no advantages were offered by the presence of stocks to the consumers, they would not pay for them with commercial profits, and the tradesmen would not develop a demand for the maintenance of their stocks. Then the demand for goods would be exclusively directed to their immediate consumption. In reality, however, *the utility that the stocks offer to the public is just as much a factor as the utility of the consumption itself, for though ultimately consumption is the final goal, it is also of the greatest importance to be able to obtain the goods in the easiest way possible, as soon as we require them.*

This determines the intensity and the volume of the demand for the maintenance of traders' stocks. There is question of a particular intensity only so long as the profits under normal conditions would remain above the rate of interest of the moment. The volume of the demand is limited by the marginal quantity which still yields a profit corresponding to the normal rate of interest.

The value of the traders' stocks can now also be determined. If the rate of interest is denoted by r , it

amounts to $\frac{100}{r} \times$ the net profits to be expected in a year.

Thus the demand for the commercial stocks and their value have been explained and determined by the last factors which are of interest for economics. This demand and this value are determined by the profits, while the profits in their turn are deduced from the utility that the public derives from the existence of traders' stocks.

There remain the expectation of profit through rise of prices, and the fear of loss through fall of prices of some goods compared with others. If the grocer thinks that coffee will become dearer in comparison with other goods, he will lay in a greater store of coffee than he would otherwise have done. These expectations are naturally always exceedingly speculative, for it is impossible to know all the factors that will determine the prices in the future. Already the real business profits form a speculative element, with regard to which the tradesmen can, however, frequently base their estimates on the former experiences. It is much more difficult to form an opinion about the future chances of every definite kind of goods.

But though the basis of the speculative demand is uncertain, yet the demand for goods for speculative purposes, and also the value of the stock kept for speculative considerations, are determined by the same principle. As long as the expected speculative profits exceed the normal yield of capital of the moment, there will continue to exist demand for stocks of goods out of speculative considerations.

The tendency here is just as evident: if the tradesman expects a rise in the price of a certain kind of goods, he will enlarge his stock of this article as much as possible; if he expects a fall in the price, he will reduce his stock as much as possible without disturbing the regular course of his business.

For the present we must confine ourselves to these remarks with regard to the commercial stocks in connection with speculative chances of rises or decreases of value. It must be pointed out that it is not easy to ascertain at a given moment whether the stocks are entirely and exclusively kept

for real commercial considerations, or whether the speculative element has played a part in the determination of the volume of the stock.

In the determination of the demand for *money* and the value of *money*, however, it will appear further that there are very remarkable indications, from which we can conclude whether or not speculative considerations have played a part.

In this chapter money has, indeed, not been mentioned. Also, in a community which does not know the use of a medium of exchange to facilitate exchange transactions, the above considerations would be valid in the same way. The existence of money could therefore be left quite out of consideration. In a community in which money is not used, the trader's stock will, however, consist of two components : one, which has been discussed above, kept for the benefit of the public, to draw from it what they want ; the other which the tradesman has received from the public in exchange, and which he, in turn, will have to give in exchange to those who again keep in stock these particular goods on behalf of their customers.

In the next chapter also the use of money will be entirely left out of consideration.

CHAPTER XVI

THE VALUE OF THE STOCKS OF CONSUMERS

THE consumer keeps many articles in store. He who daily uses an ounce of tea is accustomed, for convenience sake, to buy a pound or more at a time from his supplier. For several articles this is the usual procedure, for others again this is seldom or never done. In general, consumers' stocks are laid in only because it is more convenient to buy a quantity sufficient for some time than to buy afresh every day. For this reason the value of private stocks mostly remains small. As soon as goods of greater value are concerned, the cost of keeping a store outweighs the advantages of the convenience. The private stocks remain limited in particular when it is easy to draw from the traders' stocks: in the towns, where there are always shops in the neighbourhood, it is so easy frequently to replenish one's stores that the convenience of somewhat larger private stocks is small. In the country the replenishing of the stocks is not so easily done, and it will therefore be convenient to have larger stocks.

It would, however, be somewhat out of place in an economic study to indicate a kind of proportionality between the value of the private stocks and the distance which separates the consumer from the place where the traders' stocks from which he can draw are kept. For with this, at most, a determination could be reached of the relation between the stock of one consumer who lives at a greater distance, and that of another who lives nearer by. We ought, however, to be able to determine a relation of the demand for, and the value of, goods for formation of stocks and that for consumption. This is possible only because both forms of demand are due to the same cause—*i.e.* the utility to the consumer.

The consumer derives utility from the consumption of the hundredweights of coals that he burns each week, but he also derives utility from the laying in of forty hundredweights at a time, which renders it unnecessary for him to repeat his order so frequently.

The value of his stocks can be accurately determined from the utility that he derives from this, for it is the capitalisation of this utility.¹ The consumer who lays in forty hundredweights of coals at a time, and consumes one hundredweight a week, has an average stock of twenty hundredweights. At a rate of interest of 5 per cent. the keeping of this stock costs him exactly one hundredweight of coal a year. If the utility of keeping the stock were less than the consumption of one hundredweight of coal more a year, or than the utility of the consumption of other goods which he might get in exchange for one hundredweight of coal, he would decide to reduce the amount of the stock.

It seems strange that goods that have value because they offer utility in consumption have also another value, because a certain utility is connected with the keeping of a stock. It might seem to follow from this that the first hundredweight of coals, which is consumed at once, represents a smaller value than the tenth or twentieth, which for a time also serves to form the stock, though this is not consumed—at least not for the present. For this last hundredweight has value in use for consumption and also value as a stock, the first having only value in use for consumption. According to this view, a good that is not consumed for the present would have a value greater than a good that is immediately consumed, and it would seem as if a good were deprived of part of its value by the decision to consume it at once.

What seems paradoxical at first sight, appears, however, on closer consideration to furnish a confirmation of the theory of the value of stocks.

We have said above that it seems strange that com-

¹ The expression "capitalisation of utility" requires further explanation and specification. By the capitalisation of a certain utility I mean a quantity of value in exchange expressed in goods, from which, at the present rate of interest, yearly proceeds may be derived which would yield the same quantity of utility to the holder.

modities have value because they yield utility in consumption and also another value because a certain utility is connected with the keeping of a stock. We should, however, realise that at any moment every good has utility, and therefore value, only in virtue of the one reason or in virtue of the other. We cannot at the same time consume a commodity and keep it in stock. At any moment we do either the one thing with a good, or the other. Besides the consumption—at least of such goods as coals, which are destroyed in the process—renders a utility only once, whereas the utility of the stock is a continuous utility.

In the twenty-seventh week the twenty-seventh hundredweight of coal will be consumed. The utility of this consumption is in the future, and the present value of this utility is therefore smaller than that of the first hundredweight, which we consume in the first week. Why should we be willing to pay the same amount for the twenty-seventh hundredweight as for the first if the value of it were smaller? The present value of the utility of the twenty-seventh hundredweight in virtue of the consumption ¹ is, at a yearly rate of interest of 5 per cent., $\frac{97\frac{1}{2}}{100} \times$ the value of the utility of consumption of the hundredweight.³

This means that if there existed only value in virtue of the consumption, the twenty-seventh hundredweight would have for us only $\frac{97\frac{1}{2}}{100}$ of the value of the first. That neverthe-

less we pay the same price for it as for the first is owing to the fact that the twenty-seventh hundredweight first renders us another service for twenty-six weeks. During this time the twenty-seventh hundredweight has no value for us at

¹ We should on no account confuse the present value of the consumption with the present value of the hundredweight. The hundredweight of coal is already there, and a reduction of a future value of the hundredweight to a present value has therefore no meaning. But the utility of consumption lies in the future, and the value of this utility can therefore be reduced to a present value.

² Strictly speaking, at a six-monthly rent of $2\frac{1}{2}$ per cent.; but for convenience sake compound interest will be neglected in these calculations, just as also will the difference between discount and interest.

³ Assuming for convenience sake that every hundredweight is entirely consumed at the beginning of the week.

all ensuing from the utility of consumption, but utility exclusively due to another cause: that resulting from the convenience of keeping a stock. This utility is not restricted to a single time, as is that of the consumption, but is continuous and permanent up to the moment when we start to consume it. At that moment the continuous use of keeping a stock ceases to exist, and the utility of the consumption takes its place. The continuous service of the stock must now yield a utility to us during the twenty-six weeks that is equivalent to the lacking $\frac{2\frac{1}{2}}{100}$ of the utility of consumption. Now the

value of a good which yields us a continuous utility which in twenty-six weeks is equal to $\frac{2\frac{1}{2}}{100}$ of the use of the consumption of one hundredweight of coal—at an interest of $2\frac{1}{2}$ per cent. per six months—is exactly equal to the value of the utility of the consumption (once only) of one hundredweight of coal. This squares our calculation.

First—for twenty-six weeks—the twenty-seventh hundredweight of coal has the same value in virtue of the continuous utility connected with the keeping of a stock, as the first hundredweight in virtue of the utility of the one service of consumption; then this utility disappears, and is replaced by the utility of consumption.

The present value of the total utility derived from the hundredweight is $\frac{2\frac{1}{2}}{100}$ of the utility of the first hundredweight

(this in virtue of the keeping of a stock) plus $\frac{97\frac{1}{2}}{100}$ of the utility of the first (this in virtue of the postponed consumption). And the value of the hundredweight is at first equal to that of the first hundredweight because it renders continuous services as a stock, while afterwards, after twenty-six weeks, the value is derived from the utility (taking effect only once) of the consumption.

There are other examples of commodities or things that render the possessor successive services in entirely different functions, services that are also alternative, so that it would

not be permissible to add the value of the commodity derived from the utility of one service to the value of the commodity derived from the other service.

Let us suppose that a man has two patches of peat-ground. One patch he digs off, and burns the peat, so that he has the utility of the consumption of the peat only once. The other patch he decides to cultivate, because he expects from it yearly recurrent proceeds, which yearly proceeds are as important to him as are the proceeds derived from the peat only for once. After a number of years he also digs off the cultivated patch, so that he now derives the utility of the consumption also of this peat, which utility he now obtains instead of the yearly recurrent utility of his agricultural produce. Here, too, we cannot reduce the value of the good in virtue of the second utility to a present value and add it to the value of the good in virtue of the first utility.

Or supposing that a man has two bonds, each worth a hundred pounds. The first he sells, and uses the money to make a trip. On the other he gets an interest of 5 per cent. a year for five years. Then he sells this, too, in order to make another trip. During the first five years the second bond has value for him because it regularly brings him in a revenue. Then it has value for him because he can make a trip paid for with the proceeds. But the two possibilities are alternative. Each possibility gives the bond a value equal to that of the pleasure of the trip. But one possibility of application is not compatible with the other; accordingly, we may not add the value of the bond resulting from one application to the value derived from the other.

The same thing applies to a good that we first keep as a store and then enter into our consumption. If we fall into the error of adding the value of the good in virtue of its being kept as a store to that in virtue of its consumption, we should arrive at the absurd conclusion that the value suddenly diminishes at the moment that the good will reach its proper end—consumption. But this would be a decided mistake, because the good renders either the one service or the other, but never the two at the same time.

Also the individual manages his stock economically—*i.e.*

he will not increase his stock to such an extent that its utility is less than the utility that he could derive from his property in another way, nor will he rest satisfied with the inconvenience of a too small stock. But a greater carelessness is possible in his judgment from economic motives than in the case of the tradesman. Thus it will, *e.g.*, often depend on a trifle whether we decide to lay in ten or twenty hundred-weights of coal at the same time, whereas the economic motive is much more accurately weighed by the tradesman, who would at once perceive a wrong judgment in his business results.

Nevertheless, the principle is analogous in the two cases. Where the profit is the basis for the tradesman, the direct utility is the basis for the consumer. And in the end the profit of the tradesman again depends on the utility that his customers derive from his stock when they can draw from it.

As for the tradesman a larger and more diversified stock will proportionately yield smaller profits in the long run, also, in the case of the consumer, larger stocks will yield a proportionately smaller utility—until the limit is reached, when it becomes more attractive for the consumer to hold his possessions in another form, from which he derives another advantage—*e.g.*, a revenue from interest of an investment. In this marginal case the stock has a value equal to the capitalisation of the annual utility that the stock yields him, calculated at the rate of interest of the moment.¹

¹ In this exposition we approach very close to Prof. Marshall's theory on the value of the consumer's stock of money. (Strictly speaking, Marshall does not treat stocks of money of tradesmen and of consumers separately, but in principle he discusses only that of the consumer.) What has been said above regarding the stock of goods is found in Marshall where he examines the holding of money at ready command. There he writes that a person determines his holding "after balancing one against another the advantages of putting more of his resources into a form in which they yield him no direct income or other benefit." But even in reference to the stock of commodities I would follow him only so far, and no further. For he then continues:

"In every state of society there is some fraction of their income which people find it worth their while to keep in the form of currency; it may be a fifth, or a tenth, or a twentieth."

Even if we read for "currency" "consumers' stocks of commodities," I do not think that the relation has been determined between the point at which equilibrium is reached between utility of the stock and utility by spending the income in another way on the one hand, and the above-

mentioned fraction of their income on the other. I therefore substitute for this that when this point of equilibrium has been reached, the value of the stock is the capitalisation of the annual utility. Not until this value has been thus determined could it appear whether it would constitute a fifth, a tenth, or some other "fraction of their income."

This case of equilibrium can be compared with many similar cases. The furniture we possess we determine by balancing the utility connected with it against the utility that we can derive from other things. This utility in the state of equilibrium determines, indeed, the value, but not the proportion, of our income or our property. For if we are richer, this proportion is probably smaller, and if the whole community is better and more richly provided with commodities, the proportion is different for the whole community.

We shall see later that what already does not hold good for commodities still less gives a logical determination of the value of money, since with regard to money another complication presents itself.

CHAPTER XVII

THE FIRST FACTOR: THE VALUE OF THE TRADESMAN'S STOCK OF MONEY

It is a difficulty of the problem of the value of money that on the one hand the utility of money must be considered as dependent on its value, and on the other one of the factors determining this value is again its utility.

The problem of the value of commodities is easier in so far that the value in exchange that a commodity possesses does result from the utility that we derive from it, but the utility does not, inversely, find its cause and condition in the fact that the commodity has value in exchange. The coat we wear has value because we derive utility from the fact that it protects us from the cold. This utility is one of the factors which determine the value in exchange of the coat. But the utility that the coat yields us is, inversely, by no means caused by the fact that the coat has value in exchange.

With money, however, things are entirely different. If money had no value in exchange, it would not be able to render its services—it could not serve as a means to facilitate exchanges.

The fact that the utility of money is dependent on the value in exchange and, inversely, the value in exchange is again dependent on the utility, seems to lead us into a cycle; it looks very much as if we had got into the notorious vicious circle.

It seems to me that the clue to the solution of the problem must be looked for in the fact that there is not only an interdependence, but also an interaction, and *that the utility is indeed dependent on, but not proportionate to, the value.*

This will first be examined with regard to the stock of money of the tradesman. In this we shall first have to

consider a community with a more primitive money system than the existing one, *i.e.*, one in which only gold money containing its full face value in gold circulates.

The purpose of the tradesman's business is profit. As was set forth when dealing with the function of medium of exchange of money, the exchange of commodities is facilitated and promoted by the use of a marketable intermediate good, so that the tradesman must take care to have at his disposal a quantity of this marketable intermediate good. When somebody wants to give him commodities in exchange, only in very exceptional cases will the trader be able to give the person who offers the goods those commodities in exchange which the latter wishes to receive. There is only one way in which the tradesman can overcome this difficulty—*i.e.*, by taking care to have a stock of the most marketable goods by means of which everybody who offers him goods can again most readily obtain in exchange those goods that he requires at the moment, or will require at some future time. In the chapter on the Function of Medium of Exchange it has been examined how money has developed to the most marketable good, which for this reason is most adapted to serve as intermediate good in exchange transactions. The purpose of the trader's stock of money is, therefore, the furthering of his trade; the motive of this stock is, therefore, profit.

Let us first consider a community in which the expedient of using weighed quantities of a metal—*e.g.*, gold—as intermediate good in exchanges has recently been introduced. If a tradesman in this community tries to do business without having at his disposal a stock of gold, he will often discover, to his detriment, that he might be able to acquire goods in exchange on favourable conditions, but that the offerers of commodities have no interest in the goods he has in stock. The chances of such a tradesman gaining commercial profits remain, accordingly, very limited. He also meets with difficulties when others wish to obtain by exchange those particular commodities which he has in stock. For the others may possibly only be able to give commodities in exchange which he personally does not

desire to possess, and which, for some reason or other, are not suitable to be added to his commercial stock. If, however, his customers have gold at their disposal, he can sell his commodities in exchange for gold, and keep this at command until his suppliers come with their commodities. He will then find that thus he increases the possibilities of doing profitable business; hence that the profits of his business will increase. Now at the moment when the tradesman started to use the gold in his business it had a certain value in exchange, which was due to the fact that it was used for industrial purposes. We might express this value in exchange in a kind of index-number, which is then exactly the reverse of the index-numbers of the commodities with which we are accustomed to work at present. For this index-value would successively be found by establishing that 1 kg. of gold has a value of a kg. of corn, b kg. of sugar, c kg. of iron, etc., etc., and by assigning the index-number 100 to the total amount thus found for a number of kinds of goods in this initial state.

Gold is able to render its useful services as medium in exchanges only because it has value. If it had no value in exchange, it could render no services as medium of exchange, and if in the initial condition considered above the value of gold had been twice as great, the tradesman would have been able to derive as much utility from half a kilogram¹ of gold as he now derives from a whole kilogram. It would, however, be rash and erroneous to draw the conclusion from this that consequently one could derive twice as much utility from a kilogram of gold with the index-number 200 as from a kilogram of the index-value 100. We shall presently examine this more closely, but we will first try to find out something more about the amount of the stock of gold of the tradesman.

In the chapter on the Volume and Value of the Commercial Stock of Commodities this volume and value have

¹ This is only approximately true. A small weight with a large value in exchange is somewhat more convenient in large transactions and somewhat less convenient in small ones. In the former case it can be more easily transported and stored, and in the latter a precise division is more difficult. I think myself justified, however, in neglecting these accessory circumstances.

been brought into connection with the profit after deduction of the entrepreneur's remuneration and the working *expenses*. Among these expenses there are several that do not call for further explanation, as *e.g.*, cost of carriage, packing, etc. But there are other expenses which in so far occupy another place that the tradesman himself has it in his power to increase or decrease them, according as he thinks it advantageous.

For a shopkeeper the costs of the building in which he carries on his trade are among the most important. If the shopkeeper thinks that his business will be more remunerative if he enlarges and embellishes his shop, he will proceed to do so. His total profits are, however, made on his whole capital, consisting of stock of goods, shop building, and inventory, and many other things besides. However, he cannot possibly ascertain exactly what part of the profits should be set down to the account of the stock of goods, what part is owing to the spacious and beautiful locality, and what part should be ascribed to those other things.

His *motive* is, however, unmistakable : if and so long as enlargement and embellishment of the shop will yield a sufficient remuneration on the invested capital, he will decide to enlarge and embellish his shop ; if not, he will decide not to do so. What is certain is the motive, not the result that he will attain. And also that on which he bases his considerations, that on which his decision regarding the enlargement and embellishment of the shop is founded, is unquestionable : it is the estimation of the profit that this part of his capital will yield.

It is of great importance to realise that though, even *retrospectively*, the shopkeeper cannot determine accurately what part of his profits is owing to the condition of his shop, and what part should be attributed to his stock of goods, the enlargement and improvement of his shop are yet determined on by him solely and accurately on the basis of his estimation of the greater profits that will be gained thereby.

The same consideration applies to the amount of the

cash of the tradesman. The quantity of gold that the above-mentioned tradesman will hold is determined by his estimation of the profits that he will be able to ascribe to this part of the investment of his capital. And this, though even retrospectively he will not always be able to ascertain what part of his profits must be ascribed to his quantity of gold and what part to his stock of goods.

That demand and value of economic goods are not based on data *established beforehand*, but on the *estimation* of future data, is no exception in economics; on the contrary, everything is based on estimation. The person who buys a horse does not know precisely beforehand what utility he will derive from it, but in most cases it is at least possible, looking back, to determine accurately what the utility has been. In so far, however, we meet here with an exceptional case—that even *retrospectively*, it cannot always be accurately ascertained what part of the tradesman's profit is to be attributed to his stock of goods, what to the condition of his shop, and what to his stock of money.

What is the reason why also, looking back, it is not always possible to ascertain what part of the profit is due to the stock of goods and what part to the stock of money? The reason is this, that a complete business transaction consists of two separate parts: purchase and sale. Sometimes the profit will result from more advantageous purchase, in other cases from more advantageous sale, in yet other cases the reason for the profit lies both in purchase and sale.

If a tradesman applies himself to the purchase of commodities, and, armed with his stock of money, avails himself of the opportunities to buy under favourable conditions, always being able to resell at once the commodities bought, it is clear that the profits are not made on the stock of goods, but are due to his stock of money.

In the opposite condition is the person who has to wait until his customers come to draw from his stock of goods, which after every sale he always immediately replenishes with goods from his suppliers. In this case the profit accrues entirely from the stock of goods.

This is, generally speaking, the case with the shopkeeper.

In the majority of cases, however, the tradesman is both purchaser and seller—*i.e.*, his profit will be owing both to more advantageous purchase and to more advantageous sale. It will not always be easy, then, to decide from which component of the trade the profit has resulted, when the tradesman holds his property now in the form of goods, now in the form of money.

But even though, looking back, it is not always possible to determine what has been the profit of each part separately, the motive for keeping a stock of money is the profit which a tradesman expects to gain thereby, and the profit expected from this particular part of his capital-investment is therefore, without question, to be considered separately.

We have seen that money can perform its function of medium of exchange so well because it is, of all things, the most marketable article. It therefore logically follows that the services that money can render will be greatest in exchange transactions of the most unmarketable commodities for money. This means for the tradesman that for these unmarketable commodities the stock of money may yield the greatest profit. For if a shopkeeper sells goods to his customers which he can immediately buy again from his suppliers on fairly constant terms, a somewhat considerable stock of money is of comparatively little service to him. It is better for him to replenish his stock of commodities at once, and thus to continue to guarantee his customers the possibility of a wide choice. But if the goods are little marketable, so that he can replenish his stock only at long intervals, and possibly unexpectedly, and this at greatly fluctuating prices, he must also have an ample supply of money at his command. We should, however, realise that with this comparison we reach only a relative result: we only find why one person needs a larger stock of ready money than another, just as a man doing extensive business needs a larger stock of money than a petty tradesman.¹

¹ Cf. Menger, *Handwörterbuch*.

The absolute basis, however, is the expected profit that the stock of money will yield.

Let us assume that the tradesman above mentioned, who did business when gold was first used as marketable intermediate good, had on an average a stock of a kilogram of gold of the then index-number of gold of 100. In course of time he has reached the conclusion that the use of the marketable intermediate good has been of great advantage to him—that his business has yielded considerably greater profits thanks to this stock of gold, the amount of which, though continually varying, was yet, on an average, 1 kg. He thinks he may assume that this profit, which he can ascribe to the stock of this marketable intermediate good, in the course of a year represents a value corresponding to that of 200 grammes of gold of the index-number 100, hence to $0.2 a$ kg. of corn + $0.2 b$ kg. of sugar + $0.2 c$ kg. of iron + etc., etc., divided by the number of commodities of which the index-number is composed. The tradesman will then be intent on enlarging his average stock of gold, as he may expect to make attractive profits also with a larger stock of gold. His demand for gold will therefore be directed to the existing stock of gold, from which he will want to withdraw a greater part for the benefit of his trade. But the other tradesmen will have gained the same knowledge, and they will also wish to have a larger stock. Considering the weight, their demand can be met only partially, *i.e.*, for so far as their demand can be met by drawing from the supply that would otherwise have been used for industrial purposes. If this supply did not exist, the tradesmen would simply have had to outbid each other, and if they all desired a stock twice as large as their former stock, they would all in the end have at their disposal an *unmodified stock* according to weight, but with *double the value in exchange*. The tradesman in question would therefore still have a stock of gold, to an amount of 1 kg., but now of the index-number 200.

If, for convenience sake, we assume for the present that there exists no industrial stock of gold from which one can draw to increase the medium of exchange as regards weight,

every tradesman individually will really only be able to meet his greater demand for medium of exchange by offering more for the gold already circulating as medium of exchange. The result finally reached is, then, that the same gold obtains a higher value in exchange, and that the tradesmen on an average have the same quantities by weight of gold in stock, but a stock of—as supposed here—double the value. They need not complain that the weight of their stocks of gold has not increased, for gold does not render them services in virtue of its weight, but by the value it has. And now that our tradesman has a stock of gold representing a value in exchange twice as great as his former stock of gold, he may expect greater services from it. These services, however, will not be twice as great. The law of diminishing returns, which appears almost everywhere in economics, applies also here. For the stock of money is of service to the tradesman in order to enable him to convert it by exchange into stocks of goods at the most favourable moment. Previously, when he could only dispose of his small stock of gold, he always kept it in reserve for the most urgent cases. When goods were offered him, which instead of for gold he could also exchange for other goods, he did so, even if the result was somewhat less favourable, in order to keep his stock of gold in reserve for more pressing cases. And when barter was impossible, and goods were offered him only to be sold against gold, he did not accept these offers unless he could make very exceptional bargains. Only when he could buy against gold on very favourable terms did he utilise his stock of gold, thus always making the most advantageous purchases with his limited stock of gold, and laying the basis for the greatest profits.

Now that his stock of gold has attained, however, a value in exchange of double the amount, he can be somewhat less cautious, and use his gold also for somewhat less profitable purchases. Probably the first thing that was omitted was the barter of goods for goods, since this almost invariably necessitated concessions in the exchange terms, because suppliers also prefer to be paid in gold, by means of which

they themselves can buy again more easily what they need everywhere. Then the tradesman will more readily decide to accept a favourable offer of goods against gold, even if the advantage of the purchase is not so great as formerly, when he accepted only very exceptional bargains. Besides, he has been able to extend his field of operations. More goods than before are bought and sold in consequence of the fact that the stock of gold with greater value in exchange can serve as medium of exchange for larger quantities of goods. The result may therefore be a greater profit than previously, but certainly not greater in the same proportion as the increase of the value in exchange of the average stock of gold. On his stock of 1 kg. of gold of the index-number 200 he may now, *e.g.*, make a profit representing a value of 0.12 kg. of gold of the index-number 200 in the space of a year.

Also with this yield of 12 per cent. a year it is still attractive to enlarge the average stock of gold. The tradesman will still be able to use an average stock of gold representing a greater value in exchange. He can enlarge his stock of gold in two ways: first, by continuing to be to a certain extent reserved as regards parting with his gold in exchange for goods, and secondly, by putting his selling prices so low that he replenishes his stock of gold at a more rapid rate than that at which it flows off through purchase of goods.

Finally a condition will be reached in which the annual proceeds are reduced to the normal yield on capital at the moment.

We may, *e.g.*, suppose that the demand for gold of the tradesmen has first raised the value of gold to the index-number 300, and that then a yearly profit was made corresponding to 0.08 kg. of gold (of the index-value 300). Then the value of gold was raised still higher, *e.g.*, to the index-number 350, at which a yearly profit was still possible of 0.05 kg. of gold (of the index-number 350). At a rate of interest of 5 per cent. the normal yield has been reached, and for the moment a state of equilibrium will have set in for the value of gold at the index-value 350. That is to say, neither by their reserve in purchases nor by their

readiness in sales will the tradesmen try to acquire a larger average stock of gold.

Thus the value of the stock of gold of the tradesmen has been established at the capitalisation of their profit. If now by greater and more intensive demand the value of gold was raised to above the index-number 350, the profit might possibly again be higher, but certainly not in proportion. The profit could then no longer be 0.05 kg. of gold of the index-number now lying above 350, and the demand for gold would decrease to such an extent that the value would decrease to the index-number 350.

The values I have chosen have been taken arbitrarily, but only to a certain extent. The recapitulation of the course of value in exchange and profit is :

1 kg. of the index-number 100 yields a profit of 0.2 kg. of the index-number 100 annually, hence 0.2 *a* kg. of corn + 0.2 *b* kg. of sugar + 0.2 *c* kg. of iron, etc.¹

1 kg. of the index-number 200 yields 0.12 kg. of the index-number 200 annually, hence 0.24 *a* kg. of corn + 0.24 *b* kg. of sugar + 0.24 *c* kg. of iron, etc.¹

1 kg. of the index-number 300 yields 0.08 kg. of the index-number 300 annually, hence 0.24 *a* kg. of corn + 0.24 *b* kg. of sugar + 0.24 *c* kg. of iron, etc.¹

1 kg. of the index-number 350 yields 0.05 kg. of the index-number 350 annually, hence 0.175 *a* kg. of corn + 0.175 *b* kg. of sugar + 0.175 *c* kg. of iron, etc.¹

In the second condition the value in exchange of gold is higher than in the first. It is therefore necessary to express the profit in figures, so that in percentages it is smaller than in the first case. It is not necessary that, as assumed here, it should be larger in an absolute sense. Accordingly, it has been assumed in the third case that, in an absolute sense, it happens to be exactly the same as in the second case; in the fourth case the profit is even smaller than in the third.

¹ Divided by the number of commodities of which the index-number is composed.

The profit that is made with a greater quantity of value in exchange in gold at a given moment need therefore not be greater than that made with a smaller quantity at another moment, because the tradesman's suppliers may profit by the competition of the tradesmen, and need not allow them to make particularly favourable bargains at their expense. It is with this as with the profits made by an industrial concern: by increasing the production it is possible that the profits may diminish, not only as to percentages, but also in an absolute sense, provided a normal yield of the invested capital can be maintained, because otherwise the producer would again proceed to decrease the production.

In reference to the figures chosen, another remark should be made. The sketch given by means of these figures, showing the process of the establishing of the value of money in its interaction with the profit which definite quantities of value in exchange in money can make, is, by reason of its brevity, only very approximate. The different stages seem to have been reached by jumps. In reality a rise in the value of the marketable intermediate good could only have proceeded very gradually with all the intervening transitions, according as it was more generally realised that a greater stock of medium of exchange would offer greater advantages, also with great fluctuations, according as trade in general yielded more or less favourable results. In addition the aspect of the problem dealing with supply—from the stocks for the manufacture of ornaments and from the gold-mines—has also been left out of account here. The intention of the sketch given was exclusively to represent in figures the interaction between the profit which definite quantities of value in exchange in money are able to yield, and the value in exchange of the money which is again determined by the profits to be gained.

We should also by no means regard this equilibrium attained (in our example assumed at the index-number for gold of 350) as in any way a constant. For then we should fall into the error of adopting the often expressed, or tacitly assumed, supposition that there is also a definite, though

unknown, relation between the stock of money and the stock of commodities which money helps to distribute. There is by no means such a constant relation. If, *e.g.*, the tradesmen expect the prices of commodities to rise, either for a definite article or for goods in general, they will expect greater profits on stocks of goods and smaller profits on stocks of money. They will then modify the proportion of their stock of money and their stock of commodities in favour of their stock of commodities. If they expect the prices of the goods to fall, they will modify this proportion in favour of their stock of money. They will also desire a larger stock of money in proportion to their stock of goods when the demand of the public is now greater for one product, now for another, or when they expect prices of commodities to fluctuate greatly among themselves for some reason or other. Then the proceeds on money may be expected to be greater than those on commodities, since the profits on goods will often be again reduced by losses, in consequence of the fluctuations of the prices. Sometimes the proportion for certain articles or for commodities in general varies greatly, continually the proportion varies somewhat, either for commodities in general in one direction, or for some articles, and then partly in opposite directions. There is no constant proportion—it varies continually according as the profits are estimated higher or lower.

We must now take into consideration that the quantity by weight of gold used as medium of exchange is not a constant quantity, but that it can be added to in the first place by gold that would otherwise have been used for ornaments. On transition from the first condition, in which the value of gold is represented by the index-number 100, to the second, with the index-number 200, it is possible, and even probable, that the demand for gold ornaments has diminished with the higher prices in terms of other goods. This will lead to the addition of part of the weight in gold destined for ornaments to the stocks of gold used as money. Accordingly, the consequence will be that the tradesmen on an average do not keep in stock the same

weight of gold of double the value in exchange, but that this quantity by weight increases. Let us assume that on an average it increases by one-fourth, and that this also takes place with the stock of our tradesman. Now he has no longer a stock of 1 kg. of gold, but 1.25 kg. At the same time it is impossible that the same index-number for gold would nevertheless be reached, because the demand for the average stock of money is directed to a quantity of value in exchange in money. If the stock of gold in the second condition, without addition of gold withdrawn from the stock destined for ornaments, had been 1 kg. of the index-number 200, the stock of gold now becomes 1.25 kg., the value being represented by the index-number 160. This stock of gold yields the same profits, *i.e.*, a profit representing a value of 0.24 *a* kg. of corn + 0.24 *b* kg. of sugar + 0.24 *c* kg. of iron, etc.¹ With an index-number 160 this corresponds in value to 0.15 kg. of gold. This is the profit made on this occasion with 1.25 kg. of gold, and it is therefore again 12 per cent. of the average stock of gold. It is self-evident that the same value in exchange in gold will yield the same percentage of profit yearly in, for the rest, equal circumstances.

In this connection another remarkable fact may be mentioned, *i.e.*, the part in one respect predominant of the application of gold as medium of exchange over that of gold as ornament. For the total value of the stock of gold for monetary purposes is not influenced by the demand for gold for ornaments, but the total value of the gold used for ornaments *is* influenced by the competing demand for gold as medium of exchange. This follows, of course, directly from the fact that the demand for medium of exchange is directed to a quantity of value in exchange in medium of exchange. The consequence is, that even if the demand for ornaments should increase, quantities by weight of gold would, indeed, be withdrawn from the monetary stocks of gold, but the smaller quantities by weight would then obtain the same value in exchange as had previously been

¹ Divided by the number of articles of which the index-number is composed.

obtained by the greater quantity. If, however, the demand for medium of exchange increases—*e.g.*, through prosperity in trade—the value of the unit of weight rises, and this will also influence the demand for, and the value of gold for ornaments.

We may also point out here that the so-called “velocity of circulation” of money is not a determinant of the value. For it may leave the tradesman indifferent how often he turns over his money. What he is concerned about is what he gains in his exchange transactions; on this he bases his demand for money, and on this he bases what will be the value of his stock of money at the moment when he considers he has sufficient to meet his need.

In a greatly modified form the velocity of circulation, or rather the space of time that the money is held at command, deserves, indeed, to constitute a point of closer consideration in the examination of the diminishing returns of money. For we have seen in the examination of the diminishing returns of money that, according as the value in exchange of money increases, the profits to be gained by the aid of money will diminish. These are the profits during a certain space of time (in our example there was question of “annual” profits), and since the essential element is the profit during a definite period, and not the profit on each turnover, the law of diminishing returns on increase of the value of exchange of money manifests itself in a double way: first in the fact that the profits diminish per transaction, but also in that the money on an average is kept at command for a longer time before an opportunity offers to effect a remunerative transaction by its aid. If therefore we desire to divide the essential magnitude—the profit over a definite period—into mathematical factors, it can be said that the profit in this period is equal to the product of the average profit per transaction multiplied by the number of transactions. It should, however, be fully realised that what is essential is the product: the profit, and not the mathematical factors into which it can be separated.

In conclusion, there are two more questions to be considered. It has been assumed in the above that with the

increase of the value in exchange there was always room for extension of the trade. For in the supposition that the value in exchange of gold rose from the first condition with an index-number 100 to a value in exchange represented by the index-number 350 in the final condition, it was also assumed that new commercial possibilities opened to the tradesman.

Let us suppose that at the state of equilibrium reached at the index-number 350, fresh quantities of gold are dug from the mines and added to the tradesmen's stocks, while no new remunerative commercial possibilities offer. The added gold—at first still near the index-number 350—will then be employed in competition with the existing stocks of money, and it must be directed to the same commercial possibilities.

Now the condition is not controlled by the law of diminishing returns, but an adaptation in a much greater degree takes place. The condition will be similar to that which appears when by the side of an existing shop another of exactly the same nature is opened. The two shops will simply have to divide the profits previously made by the first shop alone.

The consequence of the appearance of new quantities of gold is that the profit falls below the normal yield, in this case 5 per cent. This will lead to gold being offered more intensely in exchange for goods, until the normal profit is again reached. Seeing that *in casu* we have started from the supposition that there were no other commercial possibilities returning a sufficient yield, the profits of trade will be unable to *increase at all*, and the quantity of gold, which has increased so far as weight is concerned, will yield the same profit as the original quantity. When, then, the profit yielded, through a fall in the value of gold, has again risen to the normal percentage, the quantity of gold, although increased in weight, will represent the same value in exchange as that possessed by the original quantity. With regard to the accuracy of this result, only this reservation should be made—that the movement of the prices that has taken place may have influenced the whole production, and hence the whole wealth of the community, so that return to *precisely* the

same condition with only a changed value of gold cannot be expected.

The second question, on the contrary, deals with the supposition that after an index-number of 350 has been reached, no new quantities of gold extracted from the mines are added to the commercial stocks of gold, but that, on the other hand, new remunerative commercial possibilities present themselves.

These new business possibilities may, of course, be due to different causes. One of these is the opening of new commercial fields in regions which hitherto had led a more or less isolated economic existence with little or no exchange intercourse. Another is the expansion of a town, which creates the need for more and larger shops, and where also more wholesale dealers can find a subsistence. These additional commercial possibilities will bring in new profits on stocks of commodities of tradesmen, and also on the marketable intermediate good which the tradesmen use as medium of exchange. When the expectations of profits are such that they exceed the normal profit on capital, an increased demand for gold will be seen to develop, which causes the index-number to rise above 350. Then a remarkable phenomenon will be observed with regard to money, a phenomenon that differs materially from that found with other goods.

This phenomenon is again caused by the fact that money fulfils its useful function owing to the fact that it has value in exchange. For any other production good the new and greater possibilities of profit would lead to this, that the demand for the new employment would force up the price to such an extent that part of the former applications would no longer be remunerative. In the same way the demand for the new employment will cause the value in exchange of *money* to rise. But with money this higher value in exchange will also produce an increased efficiency; and this greater efficiency is just sufficient for the already existing commercial possibilities to render the same business transactions possible as before. That is to say, in contrast with what would be the case with other production goods, through

the higher value in exchange of money, not a single transaction that was previously possible will have to be left uncompleted because it is no longer remunerative.

We can account for this phenomenon as follows. In behalf of the additional commercial possibilities, part of the gold, according to weight, will be withdrawn from the stocks of money kept for the sake of the old transactions. Let us suppose that in this way the stocks of money active in the old business transactions would decrease in weight to seven-eighths of the original amount, then the least profitable transactions would have to be discarded first, though they would still produce the normal profit. The tradesmen of the new commercial possibilities will then have been obliged to offer more to obtain gold from the old stocks of money. Not until they have bid a price in goods corresponding to the index-number 400 will they have been able to withdraw one-eighth from the old stocks of money. This is by no means a disadvantage for the old tradesmen. Quite the contrary. For they can now carry on their trade with a stock of money that has the same value in exchange as previously. They are therefore able to transact the same business as before. They will also make the same profits. If they had parted with their gold for an even slightly lower price, the stocks of money would have too low a value in exchange, the least profitable transactions would have to be discontinued, and the profits would exceed the normal ones, so that the tradesmen would drive up the price by their readiness to offer more, and cause the value of the stock of money to rise. Only because they have kept their stocks of money at an unchanged value in exchange, have they maintained the existing state of equilibrium.

In addition, they have gained an additional profit by realising one-eighth of their old stocks of money at prices in goods ascending from the index-number for gold from 350 to 400.

CHAPTER XVIII

THE FIRST FACTOR (*CONTINUED*): THE VALUE OF THE STOCK OF MONEY OF CONSUMERS

It is not only tradesmen who develop demand for money in behalf of their business. Everybody, whether he be a business man or not, performs exchange transactions, and on this account he is benefited by the services of the marketable intermediate good.

Also the doctor, the official, and the workman give their services in exchange for money, and then exchange this money again for goods. Here, too, the advantage of the use of the intermediate good is evident. The workman can, at most, receive the finished products of the factory from his employer as remuneration for his labour, and only in a few cases could he himself use the products received as payment, and even then, at most, for only a small part. He would therefore have to again exchange the products received for others, and it is therefore more advantageous for him to receive in payment a good the demand for which is more general—in other words, a good that is marketable to the highest degree.

Let us first confine ourselves to the employment of gold as medium of exchange in the primitive state of trade, when people first began to make use of the marketable intermediate good.

Also consumers endeavour to exchange on the most advantageous terms possible. They, too, seek profit. The farmer, from times of primitive barter, was obliged to try to exchange the products of his harvest for other commodities which were necessities of life for him. The same thing applied to those whom he took into his service to assist him in tilling his soil. If they were paid with the

products of the harvest, they were obliged to exchange them, in so far as they could not use them themselves, for other commodities. We have already seen how great were the difficulties attending this. Here, too, the marketable intermediate good came to the aid. The farmer did not directly exchange his products for other goods, but offered them for sale for the marketable intermediate good, by means of which he could both provide himself with other necessities when required and pay his men for their services.

For the consumer the advantages of the medium of exchange are slightly different than for the tradesman, though in principle they are again the same. The tradesman keeps his stock of money in reserve until he can exchange it for commodities on favourable terms. The consumer keeps his money at command in order to buy commodities for his consumption according as he needs them. But the holding of money at ready command also enhances the utility of the resources of the consumer. If he should immediately spend again the money that he received in buying commodities, he would experience the difficulty of having to store up all those goods which he did not immediately need. Part of them might spoil, and besides, after a time he might perhaps require other commodities than those he had bought. He would then have to begin exchanging again what he had stored for the things desired by him. The great advantage of the marketable intermediate good is that, owing to its being everywhere readily accepted, it is, as it were, a *passé partout*, which enables people to acquire whatever they desire at a given moment in the easiest way.

Therefore everybody keeps, in addition to stocks of commodities of daily use and stocks of more permanent use (as, e.g., furniture), a stock of the medium of exchange. And they do so in virtue of the advantages connected with this. It is these advantages that make the medium of exchange for us a valuable possession—they determine the value it has for us. If the value which money has for us in virtue of these advantages is greater than the value in exchange, we shall increase our stock; if it is smaller, we shall diminish it.

But, inversely, the advantages are also again determined by the value in exchange. A kilogram of gold of the index-number 100 yields the same utility as half a kilogram of the index-number 200. There is here, too, the same interaction as with the tradesman's stock of medium of exchange.

If each of the consumers keeps on an average a stock of 10 grammes of the index-number 100, and the advantages of keeping this stock are so great that the consumers desire a larger stock, they will cause the value in exchange of the gold to rise by their striving for a larger stock of ready money. A larger quantity of value in exchange in gold—again the quantity by weight has no influence—will yield them greater advantages. But although these are greater than before, they are not greater in the same proportion as the increased value in exchange. The law of diminishing returns is valid here. The first stock of gold for monetary purposes will have to ensure that the consumers can buy the commodities which they will almost certainly want to buy, until the stock of money can again be replenished. Then a less urgent need of ready money will remain, *i.e.*, the need of a certain reserve for purchases which they may possibly want to make. For there is, of course, also an advantage attached to the possession of a somewhat larger quantity of gold at command, which might be turned to account in more or less exceptional cases. The need of this last part of the stock of gold for monetary purposes is, of course, much more elastic, and this part is much more liable to extension or decrease. The first part of the stock of money is, on the contrary, very little elastic, in particular if the moment mentioned above, at which the stock of money will again be replenished, is fixed beforehand, which is, *e.g.*, the case with all those persons who exchange their labour for weekly wages. Such persons know beforehand that at the end of the week their stock of money will be augmented by fresh supplies, and the normal budget of the week is then a little elastic datum. In many other cases the moment at which the stock of money will again be replenished is not always known beforehand, and the holding of a larger supply of money at command will be desir-

able, in order to provide also for the possibility that the moment at which the stock will be replenished might have to be postponed.

It appears, however, from the above that there are also differences in the intensity of the need of a stock of money for consumers. If the moment of replenishing is known beforehand, there is a part that supplies an urgent need—*i.e.*, that part that will have to serve for the normal budget. A further part will then provide for a less pressing want—*i.e.*, to serve as reserve for expenses of a more exceptional and unexpected nature. If the moment of replenishing is not known beforehand, there will be still another less urgent need—*i.e.*, the need for a reserve that can be drawn upon when the moment of replenishing is delayed longer than had originally been expected.

Thus the first smaller stock of money will show the most striking advantages; the greater quantity of value in exchange in media of exchange will, indeed, yield greater advantages, but not in proportion to the increased value in exchange.

Here, too, a moment arrives at which the normal yield is reached. It cannot be expressed in figures, as with the tradesman, but in this case also the normal yield is that on which the value in exchange of the stock of money is based. In our valuations of all commodities we continually make estimations that cannot be expressed in figures, but which, conjointly, determine the values of the commodities. Also when we consider whether we shall add a chair to our furniture or whether we shall buy food instead, we compare the utility that the piece of furniture will yield us with that of the food. And we take, of course, into account that the utility of the piece of furniture will return daily for several years, whereas the food is consumed once. The utility of money is permanent; with a piece of furniture we have to take into account that it costs us the interest on the capital invested in it, and that, besides, it will be entirely consumed at some future time—that we have, therefore, to write off for depreciation, speaking in the terminology of bookkeeping; whereas the use of money costs us only the

interest on the capital invested in the average stock of money. If we permanently keep an average stock of money of five pounds, we need not take depreciation for wear and tear into account; this average stock of money renders its services without ever being consumed, as, *e.g.*, food is consumed on a single occasion and furniture in the course of several years. This average stock of money costs us only the interest on the invested capital, and the services which money renders us must compensate us for this.

The services which the stock of money renders the consumer cannot be found entered in his books in the form of profit figures, as with the tradesman, but although they cannot be expressed in figures, they are nevertheless of the same nature as the services rendered by the tradesman's stock of money, which go directly to increase his profits.

It is also necessary to draw attention to what appears to be an error adhering to this theory. For it seems as if in many cases this stock of money is not determined in connection with the utility derived from it. I imagine that many people share my opinion that a stock of money *has* indeed utility to the consumer, but that they by no means consider the amount of the stock of money as determined in connection with this utility, but in connection with entirely different circumstances.

These critics will say: It cannot be assumed that the value of this stock of money is determined by the capitalisation of the advantages, *i.e.*, by those advantages which, in virtue of the law of diminishing returns, still just result in the normal yield of the value in exchange of the stock of money at this state of equilibrium. For this seems much more complicated and involved than it in reality is. In numerous cases reality is much simpler. The workman receives his weekly wages in money, and spends this quantity of money to buy all he needs in the course of the week. It would therefore be much simpler to put the value of this quantity of money as equal to that of the "consumption units" which he intends to buy in the course of the week. In this the space of time of a week might be regarded as an

objectively given magnitude, since it is customary to pay wages by the week.

I will revert presently to the question whether the time of a week may really be considered as objectively given, and will first deal with the question whether we are justified in equating the value of the quantity of money to the consumption units to be bought in a certain space of time.¹

It is true—this should be premised—that actually for numerous consumers the wages, immediately after receipt, constitute the whole stock of money, and that this stock gradually shrinks to zero until the moment when the new wages are received. On the other hand, it is, however, also a fact that in the first place this holds good, at least mainly, for only part of the consumers—by no means for all. Many who live on wages are not paid weekly, but monthly or quarterly, and do not keep all their wages in the form of money. Nor do the many others who do not live on wages keep their weekly or monthly income in money; but they follow another course.

It seems to me that the solution of the apparent difficulty is to be found in the fact that, for those who keep their full weekly wages as initial stock of money, it holds true that the advantages of the stock of money are so great that they exceed all other things that might possibly be chosen instead. This causes a certain maximum to be reached, which gives rise to a certain want of elasticity.

This fact may perhaps be better elucidated by referring to similar phenomena with other commodities. Let us, for instance, for comparison with the consumer's demand for money, consider the demand for bread. For a great many people the demand for bread appears to be given by a number of objective factors, which have scarcely anything to do with the purely psychological-economic factors. On the other hand, the demand for many other goods is greatly dependent, *e.g.*, on the price, and it is the great merit of the theory of marginal utility that it has succeeded in explaining this interdependence

¹ The principle that we treat here is that which, as we have seen, constitutes also the basis of Mr. Keynes' theory in his *Tract on Monetary Reform*.

and interaction. But for many people this does not hold good with such an article as bread, because they will continue to consume the same quantity of bread per day irrespective of higher prices. It seems, therefore, as if for bread the demand can simply be put equal to what is on an average consumed per day, multiplied by the number of consumers. In other words, here the demand seems not to be a magnitude which is determined partly in connection with, and in interaction with, the price, but the demand seems to be a constant, determined by the physical constitution of man and the number of bread-consuming people. This, now, has appeared to be incorrect. For if the price exerted no influence, no economy would be practised with regard to the consumption of bread after bad harvests, and the prices could rise infinitely. On the other hand, when harvests were plentiful the abundant quantities could not be disposed of. Now the fact that the material of which bread is made is also applied to other purposes, which renders the demand for this material more elastic, of course furnishes a certain compensation. This applies less to an article like coffee, which almost exclusively serves one purpose. Here too, however, the average number of cups of coffee a day multiplied by the number of consumers is no objective datum, because this datum itself is again partly determined by the price. It is true of course that there are a large number of people for whom the price—within a certain margin—is no consideration as regards their demand. The limits of the total world demand are then, however, fixed by those for whom the price is, without question, a point of consideration.

In a similar way, the demand for a stock of money at ready command at the beginning of the week is, for many people, simply equal to the value of the weekly wages. It is, however, not without reason that I have treated the demand for the tradesman's stock of money first. It is exactly this demand that is only cursorily mentioned in some money theories, but which, in connection with the profits to be gained by means of this stock of money, contributes to define the total demand for money. Nor is the

volume of the consumers' demand for money a fixed and objectively given magnitude. Only with part of the consumers is the utility of the stock of money so great that at the moment when they receive their wages they keep the whole periodical income in the form of money. And even with them an additional much more elastic demand for money will exist, as was set forth above, for a particular reserve of money for possible purchases of a more exceptional and unexpected nature. Many other consumers living on wages will, however, at once deposit part of the money received at a bank, and many independent producers will themselves determine the amount of the money which they withdraw from their business and set apart for their private use, thus determining also the period for which this money will have to be sufficient.

Accordingly, this period is not objectively given for these latter, as it seems to be for those who receive weekly wages, and for whom the time for which the amount of money is to suffice appears to be determined by the objectively given fact that the wages for labour in our present community are generally paid weekly. Thus we revert to the question we asked above, *i.e.*, if this custom of paying by the week *is* really an objective fact, after all, or whether this custom itself is in connection with the utility of the stock of money.

By way of illustration, an example may be taken of an entirely different genre. Let us imagine a town consisting of one single street. A tram runs through this street. If the houses are built higher—*i.e.*, in more storeys—the street, and with it the tramway, may be shorter. It seems therefore as if the length of the tramway may be considered to be objectively determined, among other things, by the number of storeys of which the houses consist, and in inverse ratio to them. In reality, however, there is another factor that determines at the same time the height of the houses and the length of the tramway. This is the economic motif of the greatest utility attainable. When the inconvenience of the long distance becomes too great, the houses will be built higher. The greater utility is then on the side of the high houses. It may, however, also be found that

building the houses higher is attended with too many disadvantages, and it will be preferred to prolong the tramway. The advantages and disadvantages of one side are balanced against those of the other side, and the result will then determine both the number of storeys of the houses and the length of the tramway.

The condition is similar with the problem of the velocity of circulation. In the place of velocity of circulation some writers have put the time during which the stock of money suffices. Others speak of the intensity of the use of money. These are all different expressions for fundamentally the same idea.

Here, too, we seek the greatest advantage. We do not keep a large stock of money sufficing for a long time if we can easily replenish our stock. But even if we can easily replenish it, we do not take a too small stock either, which would leave us in want of cash as soon as a more expensive article is to be bought. If it is more convenient to have a stock of money which provides for our needs for a longer time, then, in consequence of this, the rate of circulation of money will be small, and the demand for a stock of money will be great, just as the value in exchange. Of course it is *always* convenient to have money at command which will suffice us for a long time, but it is only the question whether the advantages exceed a normal yield of the capital thus invested.

Now the space of time of a week is, as it were, a normal economic cycle for a workman's household. In this time the normal necessities of life are periodically bought. Besides, this period is too short and the amounts of money concerned are not large enough to deposit part of the weekly wages in a bank, perhaps only for a few days. All factors concur, therefore, in producing the effect that the maximum advantage lies in keeping the whole weekly wages as an initial stock of money.

That in this way for a great number of the consumers' stocks of money the maximum utility coincides with the keeping of the whole weekly wages as initial stock of money may not deceive us, and lead us to draw the erroneous con-

clusion that the usage of paying wages per week determines the rapidity of circulation—or, if preferred, the intensity—and that this would again assist in determining the value in exchange of money. As ever, it is here again the maximum utility which—capitalised—represents the value of the stock of money.

Accordingly, the conclusion is this: for a great number of consumers the maximum advantage of their stocks of money coincides with the keeping of their whole periodical wages as initial stock of money. This advantage is so preponderating that it seems as if objective factors are present here, *i.e.*, factors lying outside the psychological field which in general forms the basis of the demand for economic goods and of their value.

We meet with a similar case in the demand for some consumption goods, of which numerous consumers simply buy what they need—this determined by physical factors. With these consumers the demand for these commodities becomes a constant which is not determined by comparing the utility with that of other commodities which they might acquire instead of them. The limits of the demand are, for these goods, however, set by those who, with varying circumstances, will without question extend or diminish the demand for these commodities.

Thus part of the demand for money has also become rigid to a great extent for many consumers of money, but here, too, the limitation is due to those who, in the varying circumstances, compare the utility of their stock of money with the utility of other commodities.

Also the custom of paying wages weekly is in itself in connection with the fact that in this way a maximum of utility is reached for those who receive the wages. As the economic cycle of the wage-earner is most benefited by this way of payment of the wages, weekly payment has become the usual method for large groups of wage-earners.

The rigidity of the demand for money of large groups of users of money for non-commercial purposes has been laid down by Mr. Keynes in the formula:

$$n = pk,$$

in which n denotes the number of money units, k the consumption units to be bought in a certain space of time, and p the price level.

This formula is expressed in money prices. We can also transform it into a formula expressed in value in exchange

$$N = K,$$

in which N represents the value in exchange of the stock of money, and K the value in exchange of the consumption units to be bought.

For large groups of money-users it is fairly accurate as an objective determination of the value in exchange of the stock of money. For, for those who, *e.g.*, receive weekly wages, the value of the stock of money is about equal at the beginning of the week to what they will buy for themselves in the course of the week. But this only because the maximum of advantage coincides with this. A person who receives weekly wages of fifty shillings will keep an average stock of money of say fifteen shillings. The cost of this at an interest of 5 per cent. will be ninepence a year, or less than a farthing a week. A slightly smaller quantity of money at command would already give rise to inconveniences which would outweigh the minimal saving of expense. On the other hand, a larger stock of money would also comparatively soon produce more inconvenience than advantage; hence this would be avoided, even if it did not incur expense.

With other groups of consumers this sharp demarcation is, however, no longer present. But especially by the tradesman the advantages are accurately weighed and considered.

When with him the advantages exceed the normal yield of the capital invested in money, he will enlarge his stock of money; if they do not yield the normal profit, he will diminish it.

By reason of the fact that the tradesman's demand is so much more elastic than that of some groups of consumers, the importance of the tradesmen's demand is so much greater from a theoretical point of view. *For it is here that*

the causes must lie of possible modifications in the demand, and consequently in the value in exchange of money.

Another circumstance is added to this—viz. that the stocks kept by the trade are many times larger than those kept by these groups of consumers with more or less rigid demand.

Both on account of the greater elasticity of the demand and on account of the much greater volume, the stock of money of tradesmen is of such paramount importance that theory ought to start from the use of money of tradesmen. Which, however, does not detract from the fact that also the demand from the side of non-business people constitutes part of the total demand, and, as such, should be taken into account.

CHAPTER XIX

THE SECOND FACTOR: DEMAND FOR MONEY FOR THE DISCHARGING OF DEBTS AND ITS INFLUENCE ON THE VALUE IN EXCHANGE

IN this chapter also we shall confine ourselves to a society which uses only gold as medium of exchange.

The fact that money, which consists in the good that was already the most readily marketable for other reasons, becomes again considerably more readily marketable for the very reason that it is used as medium of exchange, has led people to express their claims in money.

This means that if a man contracts a loan he does so rarely in some economic good, but he almost invariably borrows money. This is therefore a direct outcome of the marketability of money.

For it will only rarely happen that if A, who is in possession of a surplus of goods, wants to lend them to B, the latter will require exactly those goods that A has at his disposal. In order to be able to lend his possessions in the most profitable way, A converts his goods into the readily marketable intermediate good, and offers this as a loan. He will in this way find the best market for his loans. In addition, on repayment he will have the advantage of again getting into possession of the most marketable good, which offers him the greatest advantages when the credit expires, because he can most easily buy with it all that he might possibly wish to possess. Only, if he is sure beforehand that later he will want to possess the same goods as he possessed originally, it would be more profitable for him if he could contract the loan in these goods. But even then the drawback remains that there is not such a good market for credits expressed in certain commodities as for credits contracted

in money, so that he could probably lend on less advantageous terms.

There are, for the rest, also other commodities than money that are given and received as loans—as houses and land. And this because the things concerned differ so greatly in quality from others of the same kind that converting them into money does not offer the advantages of the marketability of money. The person who owns a certain house, and grants another the use of it for a certain time, will realise that it did not serve his purpose, when, after selling the house and lending out the money, he got his money back in due time. He would then be confronted with the difficulty of buying back that particular house without loss. For these particular things the good itself is lent without use being made of the intermediate good money. Only the rent of the house is settled in money.

In the great majority of cases, however, not a particular good is lent or borrowed, but the medium of exchange.

In this four different cases may present themselves :

1. The moneylender was in possession of commodities which he converts into money; this money he lends to the borrower, who uses it to buy commodities in order to employ them either for consumption or for his production.

2. The moneylender is already in possession of a stock of money, which he lends to the borrower, who buys commodities for it.

3. The moneylender was in possession of commodities, which he converts into money; this money the borrower uses as stock of money in his business.

4. The moneylender is already in possession of a stock of money, which the borrower will use as stock of money in his business.

In the loan transaction in the first case, as a rule, no very particular circumstances will present themselves which greatly influence the value in exchange of money.

For while A, who has commodities and wants to lend money, offers these commodities, thus developing demand

for money, B, who receives the money as a loan, is then a buyer of commodities.

In the second case, A need not first sell commodities in order to be able to lend out money. All those who have a stock of money at command can at once lend this money, the borrower developing demand for goods against offer of money.

In the third case, the opposite takes place to what occurred in the second case: there is now demand for money with the lender and no demand for goods with the borrower.

With the first, the fourth case is the most neutral one. The lender's stock of money is simply temporarily transferred to the borrower's stock of money.

Nor do the two middle cases present anything essentially new. The only new element is the fact of the money being a loan, hence the temporary character, which, however, does not manifest itself until the debt falls due.

The second case is, at the moment when the loan is entered upon, identical with the case that one and the same person is of opinion that money used as stock of money in his trade yields a smaller profit than goods applied in other forms of production or distribution.

The third case is, at the time of the contraction of the loan, exactly the opposite of the second case, and identical with the case that one and the same person judges that a stock of money in his trade yields a greater profit than goods in the other forms of production or distribution.

The credit market therefore makes a difference in this respect only in so far that the judgment whether it is more advantageous to keep property in the form of money or of goods is not a matter that concerns only the possessors of the resources, but that also those persons who dispose neither of money nor of goods can assert their opinion if they are regarded as able to meet their liabilities.

An entirely different element, however, begins to play a part when the debt falls due. When the debtor has to discharge his debt, he develops a demand for money which is quite dissimilar to that so far treated. For now there is no longer question of a normal yield which is the basis of

the demand for money in other cases. He must be able to furnish the money at the appointed time because, if not, he is in danger of bankruptcy, or at least has every reason to fear great difficulties and inconveniences. The demand for money for discharging debts can, therefore, suddenly be very intense. If the debtor has provided against this in time, and availed himself of the various possibilities offering to obtain money in exchange transactions, his demand remains quite within the normal limits.

If he has been too late with his precautions, he is obliged to accept, at the last moment, the possibilities that are offered him—at least if they are not more injurious than the consequences of non-payment. In well-developed exchange intercourse this need not necessarily involve obligatory exchange on abnormal terms if a single debtor has to meet his obligations. But when a great number of debtors must pay debts of large amounts at the same time, the existing exchange relations between money and goods will be abruptly and violently disturbed.

When this settling of debts has been brought about after great sacrifices, this special demand for money again vanishes. In consequence of the disturbance of the equilibrium of the normal exchange conditions between commodities and money, there follows a time of transition, in which the profits that stocks of money can yield to trade are at first difficult to determine. For disturbance of the equilibrium in exchange conditions also gives rise to very special possibilities of profits and losses for trade, so that the value of the instrument of trade is difficult to estimate. Only gradually do more stable exchange conditions return, and is it possible to estimate the value of money more accurately.

It still remains to determine the relation between the demand for money for payment of debts and that for having a stock of money at command.

We see that these two kinds of demand for money at first accumulate, but that then the demand for money for discharging debts partly eliminates the other demand for money. For when large amounts in money are demanded for the settlement of debts, this demand is at first added to

the existing demand for a stock of money. But this entails that the holders of money can obtain a special price in goods for their money, so that they have every inducement to offer their stock of money for this special price. Besides, the not yet satisfied but latent demand for a stock of money will be eliminated, because over against the advantage of the yield under normal circumstances must be placed the disadvantage of the risk of a stock of money which costs such a high price in goods.

Only by reason of the abrupt nature of the demand for money with which to settle debts does this demand at first combine with that for a stock of money. The course of affairs will, however, lead to the substitution of one demand for the other, offer from the holders of the stocks of money being invited at the same time. After the economic crisis has passed, the demand for money for the payment of debts will no longer play a part. This demand for money must be considered as more or less abnormal.

The demand for a stock of money is the permanent one, money as the instrument of trade is permanently demanded, for the sake of the commercial profits gained with it and through it.

Accordingly, this is by far the most important source of value for the medium of exchange. It is the chief and permanent cause of the value of money.

CHAPTER XX

THE THIRD FACTOR: INFLUENCE AND SIGNIFICANCE OF FUTURE POSSIBILITIES. THE CAUSE OF THE GENERALLY LOWER RATE OF INTEREST ON SHORT-TERM CREDITS

WE have now considered two causes of the demand for, and of the value of money—a fundamental and permanent one, and an accessory and temporary one.

But there is another fact that asserts its influence—*i.e.* our expectations for the future. In a certain sense we have already taken these expectations of the future into account in our discussion of the main factor. For there it was already considered how our whole valuation of money was formed in connection with our expectations of future profits to be gained by the aid of the readily marketable intermediate good as instrument of trade.

We must, however, examine what is the influence of possible divergences between profits to be expected in the immediate future and the profits possible in a more or less distant future. In our demand for money and our estimation of the value of money (which determines how we are willing to exchange money for commodities, and commodities for money) the immediate future, as well as the more distant future, is, of course, taken into consideration.

If, *e.g.*, the tradesman is accustomed to make a profit of 5 per cent. a year on his stock of money, thus reaching a normal yield, and is led to assume that for some time to come the profits will amount to only half this amount, but that in course of time the normal yield can again be reached, his valuation of his stock of money need only be a little lower than if the normal yield might be expected in the immediate future.

Of importance then, however, is the difference in the rate of interest on short-term loans.

When we speak of interest on money, it is necessary first to define this idea accurately. For it is a consequence of the fact that credits are always expressed in money that lending of money is often spoken of when the meaning is lending of capital. For though most credits are given and taken up in money, the money received by the borrower is frequently converted by exchange into commodities, while when the credit expires the borrower must take care in time to again acquire money in exchange for the goods. The real purpose of the loan of money is here the loan of commodities. Here, too, the use of the readily marketable intermediate good has become an indispensable link. Lender and borrower could but rarely reach each other if they could only contract their loans in the form of commodities, since in this case the borrower would have to go in search of a lender who happened to be in possession of the very kind of commodities that he needed for himself. But in these advances, although expressed in money, the purpose is to obtain goods on credit.

This does not alter the fact that those who wish to borrow the medium of exchange itself also, of course, make use of loans in the form of money.

When a tradesman in the near future can expect only moderate returns of the stock of money employed in his trade, he will be prepared to pay only a low rate of interest on loans taken up with the object of holding a stock of money. This will also be the case if he thinks that he can permanently expect only small returns. But in the latter case he will also, at the same time, offer money in exchange for goods, so that, in consequence, the prices of commodities will rise. As we have seen, the smaller value in exchange of the stock of money will then only be applied to the more profitable transactions, in consequence of which on decrease of the value in exchange of the stock of money a level is gradually reached at which the stock of money can again yield the normal profit.

However, if the returns are expected to be temporarily smaller, there will not be an inclination to make an intensive offer of money in exchange for commodities. The only way

in which this temporarily unfavourable yield of money will find expression (save in a *small* offer of money for goods) will be in the rate of interest.

A low rate of interest means, therefore, a high valuation of money, in proportion to the profit to be expected immediately from a stock of money.

On the other hand, a profit on the medium of exchange which is expected to be temporarily high is not always a motive for an intensive demand for money in exchange for commodities. Only a profit which is expected to continue to be high can lead to this intensive demand for money in exchange for goods. If a temporarily higher yield may be foreseen, then (except for a slightly greater demand for money in exchange for goods) only a rise in the rate of interest on short-term loans will be observed.

It is self-evident that the question whether the profit on the medium of exchange will diverge from the normal yield only temporarily or for a long time is of a highly speculative character. Experience has taught that in case of deviations, especially when there was a decrease in the yield as a result of an increase in the nominal quantity of money, there was at first always an inclination to consider it of a temporary nature. In this respect a too great confidence has repeatedly been manifested throughout the ages.

In the discussion of the fundamental and permanent cause of the value of money it has been clearly set forth that the quantity of money (*e.g.*, the quantity by weight of gold circulating as money) plays no part, since the profit is yielded by a quantity of value in exchange in money. On a disproportionate increase of the production of gold, a smaller profit on the stocks of money has at first always been observed. For the newly produced gold, which was added to the stocks of money—acquired under the existing exchange conditions—was unable to yield the same profit as the already existing stocks. This has, at first, always been considered as a phenomenon of a temporary character, which then expressed itself in a lower rate of interest. When it appeared, however, that even in course of time no satisfactory profit could be made on the medium of exchange,

it began to be offered more intensively in exchange for commodities. The result was that the stocks of money had a lower value in exchange, and that in proportion the returns became greater.

Not seldom did this phenomenon in history change into the extreme opposite. For money was then often offered so urgently in exchange for goods that the value in exchange fell too low, so that the stock of money became too small as regards value in exchange, with the result that, in proportion, the yield became too great, and the rate of interest on money rose above that on other commodities. But in course of time the permanently high yield restored confidence, and fresh demands for money caused the value in exchange of the stocks of money to rise till a normal yield was reached and a new state of equilibrium established.

In the above we have distinguished between loans contracted with a view to obtaining a stock of money at command, and loans in which the money advanced is at once converted into commodities by exchange. In practice, however, it is not so easy to ascertain when we have to do with one and when with the other. The term "rate of interest on money" in this connection is misleading rather than capable of giving us information about the real purpose of the borrowed money. By "interest on money" as a rule—and we will adopt this current terminology—the interest on short-term loans is understood. Yet money will often be borrowed for longer periods with a view to employing the money as a stock of money in one's own business.

For a tradesman who has not at his disposal sufficient resources to enable him to carry on his business might provide himself with these means by contracting a loan, and in order to make sure that he can continue to carry on his trade for a considerable time, he may procure the means by contracting a long-term loan. Part of this he will keep as a stock of money, and this part is then purely a loan of money. Here a long-term credit is therefore entered upon, the ultimate end of which is not the loan of commodities, but the purpose of which is to obtain the money itself.

On the other hand, also, the taking up of a short-term credit is not exclusively a transaction for the tradesman who wishes to have a stock of money at command. A manufacturer who expects to have the finished article ready for sale within a short time can also enter into a loan at short date. What this manufacturer wants to borrow is not the money, but the raw material, etc., which he expects to have converted into the finished product within a short time.

This does not alter the fact that although we cannot ascertain for every particular case what is the ultimate end of the loan, we can yet find an indication on the valuation of money in connection with the possibilities of the near future, in the difference between the rate of interest for short-term and that for long-term credits.¹

If the tradesmen are of opinion that in course of time the stock of money will yield greater profits, while they will have to be content with small profits for some time to come, they will *not* be prepared to offer money intensively in exchange for commodities, but they *will* be prepared to lend the money for a short period at a low rate of interest. Hence an increase in the stock of money disproportionate to the possibilities of extension of trade entails a low rate of interest on short-term money—so long, at least, as the conviction has not gained ground that, with the value in exchange maintained on the old level, it would be necessary to be satisfied with small returns on the medium of exchange for a long time.

Accordingly, a low rate of interest on short-term credits is the result of a low yield of money, if this low yield is considered to be of a temporary nature. It would, however, be rash to conclude from this that the rate of interest on short-term money must always exactly correspond to the profit on the stock of money. Two circumstances are of influence here. First of all, also in this connection, it is necessary to point out the difficulty of estimating precisely the profits on the stock of money, the more so when it is a

¹ For a clear understanding it may once more be pointed out here that in this chapter also we are dealing exclusively with a community in which only precious metal functions as money.

question of a short period. At most we can say that the rate of interest on short-term money must correspond to the *estimation* of the profits on the stock of money for this short time. But, in the second place, this estimation is rendered still more difficult by the influence of the demand for credit for the purpose of obtaining goods, which has already been mentioned. If it is thought that large profits can be made by the production of commodities, people will want to borrow money and convert it into commodities by exchange. This demand for credit has, therefore, the tendency to drive up the rate of interest. If, however, we could accurately estimate the profit on the stock of money, this tendency would be cancelled by the money which through the purchases of the producers is at once transferred to another stock of money. A margin between the yield of a stock of money and that of commodities, both for the same short period, would then manifest itself in the prices of commodities for future delivery. In consequence, however, of the fact that the estimation of the profit must always remain inaccurate, influence will always be exerted by demand for, and offer of, credit from other considerations.

For convenience sake in what precedes one half of the question was mainly treated—viz. a comparatively low rate of interest on short-term credits. A comparatively high rate of interest has, of course, the opposite result, on the same fundamental grounds—*i.e.* a comparatively high rate of interest on short-term credits will ensue from the fact that a relatively high profit is made on money, but that, at the same time, it is expected that the high profits will not continue for long. It should, however, be understood that the high rate of interest on short-term credits need not necessarily be due to this factor residing in the medium of exchange, but that other determinants of the relation of long- and short-term credits also play a part.

Further, the qualification of a low and high rate of interest on short-term credit, in comparison with the rate of interest on long-term credit, should be defined more closely.

For it is the normal state of things that the rate of interest

on short-term credit is lower than that on long-term credit.

This phenomenon has two causes. One cause is to be considered of a general nature, and arises directly from the difference in the time that the credits run. The second cause is in the closest connection with the organisation of modern banking, is, as such, not yet relevant, and will be treated in a later chapter.¹

The first cause, as has been said, proceeds directly from the difference in the time that the credits run. A person who takes up money for a long period can finance with it transactions both of a more permanent and of a temporary nature, whereas when money has been taken up for a short period, it is only safe to complete transactions of a temporary character. The possibility of a twofold application of the long-term credit over against the single possibility of the short-term credit already opens up the probability of a lower rate of interest on the short-term credit. Also on the side of the offer of short-term credit lies a ground for a lower rate of interest than on long-term loans. For all those persons who, for a short time, have resources at their disposal which they do not themselves immediately require are lenders at short date, but not at long date. On the other hand, all those who can dispose of means for a long time are able to give both long-term and short-term credits. As soon as the rate of interest on short-term credits became higher than on long-term credits, they would, in general, prefer to invest their resources at short date, as then, besides having the advantage of the higher interest, they are also able to profit from the possibility that when the short-term credit is redeemed new attractive possibilities may present themselves. In one case only will they prefer the lower interest on long-term credits to the higher on short-term credits—viz. when it may be expected, on good grounds, that the rate of interest will, in general, soon fall. For in this case a person who has resources at his command for a long time will at once invest them for the whole period, securing in this way for a long time the high rate of interest ruling at that

¹ Cf. Ch. XXVI.

moment. But, with the exception of this case, the short-term rate of interest will, in general, be lower than the long-term rate of interest.

For those who can dispose of resources for a long time, there is a second reason why they will prefer to invest them at short date, even at a lower rate of interest—*i.e.* the fact that when the money is soon returned they again have the choice between lending it and *buying commodities for it*. A person who grants short-term credits is soon again in the privileged position attending the possession of a stock of money.

When, therefore, in this chapter short-term rates of interest compared with those on long-term credits are discussed, we must also take the above considerations into account. For on an average the interest on short-term credit is already naturally lower than that on long-term credit, and if, *e.g.*, on account of profits on the stocks of money which are expected to be temporarily smaller, short-term credits are easier, we must assume that the normal average margin already existing between short-term and long-term rates of interest is increased.

Also with the second determinant which we have treated as cause of the value in exchange of money—*i.e.* the question of demand for money for discharging debts—the rate of interest on money is influenced. For when for the payment of debts a strong demand for money is suddenly developed in exchange for commodities, an endeavour will also be made to acquire the money with which to settle the debts on other less unfavourable conditions. As we have seen, the demand for money for paying debts is a factor which carries weight only when it becomes necessary unexpectedly and urgently. Then, however, the conditions of exchange for goods are unfavourable for those who need the money, and an endeavour will be made to postpone the adjustment until a favourable moment. By means of a new loan this unfavourable time may be bridged over, and at times of strong demand for money for settlement of debts a high rate of interest on money will be observed, which is as transitory in nature as the entire

abnormal effect of the demand for money for the discharge of debts.

At the beginning of this chapter we examined the influence on the rate of interest on money of the possibility that for a short period the profit on the stock of money departs from the normal, assuming at the same time that the yield will ultimately again reach the normal amount. The value in exchange of money then changes little, if at all. There is, however, another possibility also leading to a low rate of interest. This case is generally met with in a period of depression which follows an economic crisis, when the interest is, on the contrary, abnormally high, on account of the compulsory payments of debts. In such a period of depression there prevails a general distrust of the possession of commodities, of whatever nature. Only the possession of money imparts a feeling of safety. People will exchange their commodities for money, thus themselves precipitating what they fear that others will cause to happen: a fall in the prices of commodities, and a corresponding rise, accordingly, in the value in exchange of money. The result, however, is that the value in exchange of the stocks of money becomes too great, and can no longer yield the normal percentage of profit, the less so as, in consequence of the crisis, the whole apparatus of production and distribution is out of gear, so that the possibilities of doing business diminish. There is therefore a small yield of the stock of money, and people will be willing to lend out money at a low rate of interest. Accordingly, it is true, the temporarily few possibilities of doing business are here again also a cause of a low yield, hence of a low rate of interest; but the main cause is the too great quantity of money in terms of value in exchange.

If we recapitulate the contents of this chapter, it appears that we have treated a third factor which determines the value in exchange of money. It is the factor of the prospective possibilities. The effect of these prospective possibilities is twofold: first of all they are themselves a determinant of the value in exchange of money, because when we weigh and consider the terms on which we are willing to

exchange money for commodities we also take the future possibilities into account. Secondly, it then appears that in so far as the future possibilities diverge from the direct expectations, the interest on short-term money will also be influenced as a result of this.

CHAPTER XXI

THE FOURTH FACTOR : THE STABILITY OF THE VALUE OF MONEY

As the fourth factor determining the value of the medium of exchange, the stability of the value of the medium of exchange itself is of great importance.

When we consider on what terms we are prepared to exchange money for other commodities, and other commodities for money, an important consideration may sometimes be, in how far we can rely on the stability of the value of money. This factor comes to the fore particularly when the stability of the value is open to doubt. For if we can expect on solid grounds to make satisfactory profits on our stock of money, but great uncertainty prevails regarding the question on what terms in course of time commodities and money will be exchanged for each other, this will have to enter very considerably into our calculations when determining the terms on which we are prepared to exchange money for other commodities at the present time.

It is obvious that we have to do here again with a form of prospective possibilities, but this form is so entirely different from that treated in the preceding chapter that it must be dealt with as a separate factor.

For in the preceding chapter it was discussed how, starting from the first factor—the chief one—in perfectly normal conditions, the case may occur, and frequently does occur, that the direct profit temporarily deviates from that which we may expect in the long run, and which we may regard as being normal then. Accordingly, this case must be considered as perfectly regular. When, then, the medium of exchange does not fall short in any other respect than

that for a time it yields smaller or greater profits than the normal ones, we shall certainly not be able to say that the money has lost its stability. On the contrary, in spite of the momentary deviation—*e.g.*, in consequence of a slackness of trade—the confidence in the future is not impaired, and this is the cause why the medium of exchange preserves its stability of value.

But there are also future possibilities of an entirely different nature. There is, *e.g.*, the possibility of an excessive production of gold, which quite unsettles the exchange conditions of commodities for money. Then the possession of money is attended with a certain risk, and therefore money will only be accepted in exchange if and in so far as compensation can be found for this risk, either by the terms of the exchange transactions or by the advantages connected with the use of the money.

That the medium of exchange has not always been conspicuous by the absolute stability of its value we have frequently experienced, and at least after a time we have come to agree that there was something wanting in this stability. Besides, endeavours are made everywhere to enhance the stability of money as much as possible, and here we enter the territory of practical money policy. It has therefore been necessary to form an idea of the conception, stability of the value of money.

As regards this conception I cannot agree with the frequently accepted opinion that the value of money is stable, when at different times it can be exchanged for constant average quantities of the different kinds of commodities—*i.e.*, when the so-called level of prices remains constant.

It is true that in this way a certain constancy is indeed indicated—*viz.* of the value in exchange of money, more particularly in terms of goods.

But that this constancy in the value in exchange is accompanied by an inconstancy in another respect may appear from the following example. Suppose a town is besieged, and the inhabitants suffer starvation. They will then be able to get only very few commodities for much money. When the siege is raised, and the town can again

be amply provided with food, the inhabitants will be justified in expecting that with the same quantity of money they will now be able to buy greater quantities of commodities. If in an artificial way such an abundance of money should then be produced that the high prices prevailing for the commodities during the siege were maintained, a constant value in exchange of money would, indeed, be preserved, but there would be this disadvantage attached to the stability of the value of money—that with this stability of value people would be firmly convinced that they had been seriously injured.

The same thing would hold good when, after times of bad harvests and of scarcity from other causes, people stabilised the price level. Then, too, the holders of money would have the feeling of having been injured. And also in the opposite case there is something wanting in the desired stability. For when normal times were succeeded by times of scarcity, and the price level was kept constant, it would be the holders of money who benefited by the fact that with their money they had provided themselves with a cheap but efficient store of provisions.

If therefore, in spite of the constant value in terms of goods, there is something wanting in the constancy, this must be owing to the unvarying quantity of the different goods for which money is exchanged.

And it is certainly evident that the same quantities of goods have by no means a constant importance for our well-being at different times. The utility which in times of scarcity would be derived from a certain quantity of a certain good is entirely different from that which in times of abundance would be derived from the same quantity of the same good.

For this reason I do not consider money with which at different times the same quantities of goods are bought as by any means the ideal money. The stability of value which we desire is not, in my opinion, a stability of value in exchange, but it should be a certain constancy in the way in which money performs its function.

That a constant price level is frequently seen as a desir-

able end, can certainly be explained from the fact that we have often seen fluctuations of the price level produced by causes on the side of money, and generally the chief cause was then an excessive increase in the total quantity of money.

But the exchange relation between two goods may equally well be modified by causes residing in one good, as by those lying in the other. And the same thing applies to the exchange relation between money and other goods. Here, too, a modification in the exchange relation may be due to the money or to the other goods.

We meet here with a complication in so far that variations the causes of which are due to the goods must necessarily also influence the utility of the medium of exchange. When, *e.g.*, times of abundance are followed by a period of scarcity, there is not only to be expected a variation in the exchange relation of money and commodities, the cause of which then lies in the commodities, but at the same time the significance and the utility (*viz.* the useful action) of the medium of exchange—*i.e.*, of money—will also have been modified. As an agricultural implement yields a different utility in times of scarcity than in times of plenty, in the same way money, the instrument of trade, has another degree of utility when it performs its function in the distribution of a scanty, than in that of a plentiful, store of commodities.

It will, accordingly, never be possible to create a money system in which factors will not automatically become active on the money side, when modifications in the exchange relations of money and commodities have first arisen in consequence of factors residing in the commodities. For the very reason that something is changed with regard to commodities, the utility of the medium of exchange will also be modified, and with it the money side of the exchange relations also will have been influenced.

Now the question of a striving for stability of value is one of a practical money policy. This book, however, is not intended to deal with the question in what way we can reach the highest possible stability of the medium of exchange. We will therefore not enter more fully into this

question, but will confine ourselves to the stability of the value of money in so far as this exerts an influence on its value.

For, as was observed above, this factor begins to assert itself just when the belief in the stability of the value is shaken. It is the risk connected with the possession of money that in some way or other calls for compensation.

The experience of many ages has taught us that this risk of the instability of money was felt only in times in which actually the method of creating money left much to be desired. Variations in the price level caused by greater or less scarcity of commodities did not give rise to this anxiety if people were only convinced that no mistakes were made in the creation of money.

When, however, tradesmen work with a stock of money which, they hope, will yield them a satisfactory profit, they are unquestionably influenced in the valuation of their stock of money if they are in utter uncertainty about the future value of the money, in consequence of errors made in the creation of money—as, *e.g.*, debasement in former times and inflation in our own age.

Then the use of money is possible only when compensation is obtained in another way. And endeavours will be made to obtain compensation in two ways. First of all people will only be willing to acquire their stock of money in exchange for a low price in terms of commodities by which already possible unfavourable expectations for the future with regard to creation of money have been discounted.

Secondly—and this demand will in a natural way be fulfilled at the same time as the first—a high profit will be required from the stock of money, to indemnify the holder of the stock of money for the risk attached to it. This high profit will then consist of two parts: one part is the normal yield that may be expected from the invested capital, the other part is the premium for the risk connected with the possession of the stock of money.

The high yield will, of course, directly entail a high rate of interest on money. As soon as the stock of money is able to produce high returns, people will at once be willing

to pay a high rate of interest for the loan of it. On the other hand, those who hold their property in the form of money, and wish to lend this money to others, will proceed to do so only when they are compensated for the risk attached to the possession of money by a high rate of interest.

A high profit on money the value of which is not stable naturally coincides with a low total value in exchange of money.

For if money has a low value in exchange, this means that the supply is limited. The trade which before received a normal profit from stable money could transact business with it on a large scale. When now the value in exchange of money decreases, on account of the insufficient stability of its value, it will be necessary to limit the volume of these commercial transactions. The first limitations will refer to those transactions which were able to yield only the smallest returns. Then only the more urgent ones remain, which are now also able to yield higher returns. In this way the yield rises automatically per unit of value in exchange.

Also in recent times we have been able to observe this phenomenon in different countries. During the years of inflation, when the stability of money quite broke down, the total value of the money of more than one country was seen to fall to a very small amount. The yield and the rate of interest, however, rose very high. And at the same time that the returns and the rate of interest began to decrease again, the value of the money rose. Because the confidence in the money was gradually restored, people were prepared to value it more highly, more business transactions could be completed by the aid of the medium in exchange, and business men were more willing to rest content with normal returns and a normal rate of interest.

The economic disadvantage of unstable money—of a medium of exchange of inferior quality—is obvious. For many business transactions which did not yield such high returns, and by which tradesmen might have profited under more favourable circumstances, had to be abandoned. It was a temporary annihilation of capital which presented a close resemblance to the destruction of factories or other

instruments of production. Then, too, higher profits can be made by the remaining factories, but a great part of the production which would be sufficiently useful for the community to be paid with normal profits cannot fulfil its function.

We have now examined a fourth determinant of the value of money. The degree of stability of the value of money might be compared with the quality of an article. The influence of this fourth factor is this, that according as the quality of the medium in exchange is worse, the returns, reckoned in percentages, must rise; but, in spite of this, the value in exchange must fall.

In this one other point should be considered. In the science of economics there prevails diversity of opinion regarding the question what exactly must be understood by stability of the value of money. I have set forth in the preceding discussion why I cannot share the current opinion on this question.

But the effect of this fourth factor is, strictly speaking, outside the question, what exactly should be understood by stability of value. For this influence is not set going by a theoretically correct conception, but by the conviction which has taken hold of the users of money. Irrespective of the sufficiently sharp definition of the conception, the user of money judges whether a risk is connected with the keeping of a stock of money. And it is eventually this conviction, whether founded or unfounded, that causes this fourth factor to be included among the influences which determine the value in exchange of the medium of exchange.

The stability of the value of money has, as determinant, a counterpart in the degree of the stability of the value of commodities. In the preceding chapter we have treated this question in another connection.

For when there is an abnormally plentiful supply of goods, the case frequently presents itself that it is exactly the commodities that form a very uncertain and precarious possession. This enhances the attraction of possessions in the form of money, and, for this reason, a demand for money arises. In general, this phenomenon is observed

in a slump or a crisis. In order to be safeguarded against the risk connected with the possession of commodities, there is a demand for money in exchange for commodities, as money is considered to be a possession of greater stability of value. The uncertainty of the possession of commodities then confers a certain attraction on possession in the form of money, and stocks of money will be in demand even if they cannot yield normal profits. Every stability of value is only relative, consequently people are prepared to pay a premium in the exchange of commodities for money, because the comparative stability of money is preferred, in order to avoid the still greater instability of other possessions.

In such times the reverse will be observed of what is seen in times of a deranged money system—the total value in exchange of the existing quantity of money will then be greater than under normal circumstances.

CHAPTER XXII

THE FIFTH FACTOR : THE FRICTION IN THE CIRCULATION

MONEY is not always, and not under all circumstances, usefully employed as stock of money. Part of the total quantity of money is held in a way which, as regards the utility it yields, cannot be compared with that of the individual stocks of money. It is, as it were, owing to frictional resistances that part of the medium of exchange is not usefully employed in furnishing the holder with the convenience of being able, at any moment, to buy whatever he wishes, but remains inactive, for let us say technical reasons.

The case may more or less be compared to that of "idle cars" on the railways. When the cars are not used, no useful services are performed by them, and this absence of "earnings" must be compensated during the time that they *are* being used.

The way in which money is "idle" is, though it sounds paradoxical, and is in contrast with the "cars," when it is being transported. When for payments for purchases we have to send gold to a supplier outside the town, or abroad, or even overseas, this gold in transit cannot render services as stock of money. At least this possibility is greatly limited. When a business man expects to receive a remittance of money to-morrow, he can consider it already as money in hand to-day for some possible commercial transactions—*i.e.*, in so far as payment on the next day can be stipulated. Other transactions are then excluded. Money in transit can therefore not always be employed usefully in the same way as money on hand.

But, nevertheless, this money must be able to return profits. So long as it is a necessary incident that money is sometimes "idle," the business transactions effected by the

aid of the medium of exchange must also provide the reward for the time of enforced idleness. Accordingly, a correction must now be applied to the terminology of the results found in the exposition of the interaction between value in exchange and returns of money. For there we have used quantity of money and stocks of money as two terms for the same thing. What is correct, however, for the aggregate quantity of money, is not correct when applied only to that part that is not "idle." For it is not the quantity of value in exchange of the directly available stocks of money only that must be able to return the normal profit, but the yield must be the profit on the directly available stocks of money, together with the stocks in transit.

But we must, in addition, extend this statement still further. For money in transit to other places is not the only money that is compulsorily idle. For also in transactions within the same town money often arrives there where it cannot render services, or at least not immediately, as stock of money. There is no continuity in trade, it is not going on uninterruptedly all the twenty-four hours of the day. There is therefore always a moment when payments of current transactions are made, after which the stock of money cannot render further services during the same day.

Thus in some branches of trade—*e.g.*, in dealings on the Stock Exchange—the transactions are completed for delivery and payment on the following day. The tradesman who buys and sells on the same day must be able, like any other tradesman, to dispose of a stock of money in order to be able to buy, even though what is bought is immediately sold again. When he delivers what is delivered to him on the same day, this stock of money will suffice him. The stock of money the value in exchange of which is determined by the fundamental factor is then sufficient. But the tradesman cannot always rely on such a smooth course of affairs under all circumstances. It will often occur that the goods are delivered to him at the termination of the time of delivery customary in his trade. In consequence, he has a surplus of goods (or stocks) on his

hands till the beginning of the next day, and his supplier a surplus of money. The holding of a surplus of commodities (or stocks) will not be injurious to him, but the fact that his stock of money has now decreased below the desired quantity of value in exchange is serious. He would then have to restrict his trade, so far as transactions are concerned, for which delivery on the next morning is stipulated, as he does not get the disposal of sufficient resources until he himself has delivered his goods (or stocks). In consequence of this friction, a stock of money is required which is greater than would be necessary if everything could proceed smoothly and without a hitch. In order to be able to meet these contingencies, the tradesman must keep a stock of money to cope with these circumstances.

Also this stock of money must be made remunerative by commercial profits. A business which does not include in its profits the reward for the keeping of this additional stock of money could not be remunerative, and would therefore have to be eliminated.

In this way the frictions arising in the transport of money, as also in the transition from one day of delivery and payment to the next, are an economic disadvantage. The distribution of commodities, which is the function of trade, is hampered by them. For those transactions which would still be remunerative if there was no friction in the circulation, can now no longer be remunerative in a number of marginal cases, and these marginal cases of the distribution can therefore not be made serviceable to the ultimate consumer.

Society has taken such measures as were possible to protect itself against these frictions, as against so many others. It is true that the participants in exchange transactions do not feel, directly and personally, the loss that the consumer suffers, in consequence of the fact that they are unable to avail themselves of the opportunity for a number of profitable chances. They experience the disadvantages in the form of costs which fall on their business. And when they can economise on their stocks of money, and still derive the same profits, their costs diminish, or, to express this in

more strictly correct terms, their profits are in a more favourable proportion to the capital invested, hence their yield is greater.

In two ways the difficulties of friction mentioned above are provided against : by means of the clearing and by the aid of banking.

Both expedients will be treated later, because they form part of the organisation of the modern money system. The place occupied by clearing and banking in modern business is of such importance that the true significance can be grasped only when we have first formed an idea of the original primitive trade by means of the medium of exchange. Of much more importance than the operations to overcome as far as possible the difficulties arising from friction, are the functions performed by clearing and banking in economising on the stocks of money which are kept and determined in connection with the action of the main factor. This, therefore, follows later.

CHAPTER XXIII

THE SIXTH FACTOR: THE MARKETABILITY OF OTHER COMMODITIES AND OF SECURITIES

THE five factors that have been treated, have all of them an independent significance of their own. That is to say, each of these five factors contributes in its own way to the formation of the value in exchange of money.

The same thing cannot be said of the sixth factor, which will be discussed in this chapter. For, at bottom, this factor is a part of the first. The marketability of other commodities co-operates in determining the profit which the readily marketable intermediate good is able to yield, the degree of marketability of other commodities determines the necessity of the use of the medium of exchange. In so far the investigation of the influence of the marketability of other commodities is, therefore, an examination in further detail of the fundamental factor.

Each of the factors mentioned above is an extensive complex, which would have to be studied in detail if anything like completeness is to be reached. Such a completeness is, however, not intended here. On the contrary, what we have in view here is to group the different influences in such a way that a division is made only when the factors differ fundamentally, and when also their results are different.

That the marketability of the commodities is treated separately here is exclusively inspired by considerations of method. This factor leads us in the next chapter in the most lucid way to the seventh determinant, which gives an occasion for proceeding from the original primitive application of a readily marketable intermediate good as expedient in trade to the complete development of the modern money

organisation with the co-operation of central and other banks.

As I have already said, the marketability of other commodities is a part of the main factor : the returns which the stock of money yields to the holder when it is exchanged for other commodities. For it is the lack of sufficient marketability of the other commodities that induces us to use the readily marketable intermediate good as medium in exchange transactions. For the sake of brevity I have dealt only with the principal property on which the utility of money rests. But to be somewhat more complete attention must be here directed to the properties already mentioned which contribute to produce this utility.

One of these is the divisibility of money into any quantity desired ; also the fact that the commodity used as money is not perishable. Then that, when stored, it takes up a very small space, which is sufficient even for a fairly great value in exchange in money, and, in connection with this, the ease with which it can be transported. Further, the high degree of stability of its value in exchange in comparison with nearly all other commodities. Finally, also the ease, acquired by constant practice, with which we can form an idea of the relation of its value to that of other goods. It is, indeed, much easier for us to form an idea of the amount of our property if we have a certain quantity of the one article money, than when our property consists in various quantities of a great variety of commodities.

We have already seen how all these properties concur to induce us to first ask money in exchange for our commodities and services, which money we later convert into the other commodities or services which it was our final purpose to obtain.

If all the commodities and services were equally marketable as money, and if they were not inferior to money with regard to the other properties, the use of a medium would be quite superfluous.

Now there are actually cases in which commodities, to a certain extent, possess the above-mentioned properties in a sufficient degree to render the mediation of money super-

fluous, at least partly—in fact, they sometimes even replace money as medium.

In these cases it is chiefly the marketability that plays an active part, the other properties being more or less left out of consideration, because they are of little importance for the case in question.

The cases to which I refer occur mostly in wholesale trade. For in wholesale trade markets have been organised of such a scope and arrangement that some commodities are just as rapidly and readily exchanged there as is possible everywhere with money.

It is particularly in the wholesale trade that easy negotiability can be observed, in retail trade but rarely. A pound of sugar is an almost unmarketable possession, which the ordinary participant in exchange transactions cannot readily convert into money or other commodities. Only the grocer, who specialises in the sale of this kind of article, and has regular buyers of it, can easily get money in exchange for it; but even then only in so far as his customers require this article. In the world market, however, a hundred tons of sugar is a possession that is almost as readily negotiable as money; it can almost immediately be converted into money by exchange. It may be alleged against this that in the modern exchange organisation the commodity must always be exchanged again for money, and thus demand for money always arises in the end. This is perfectly correct, but, as appeared from our exposition in previous chapters, the significance and the utility of money are not determined by the number of transactions against money. On the contrary, it is for the aggregate demand for money (and therefore also for the value in exchange of money) of the greatest importance if another good, which to a certain extent fulfils the same requirements of ready negotiability, etc., can replace the stock of money; or, as this is usually expressed in bankers' terminology, if we are as liquid with sugar as with money, sugar can partly replace money. If, therefore, a tradesman wants to be "liquid"—wants to dispose of liquid means—and stores of sugar can be quite readily sold, he can keep a stock of sugar instead of a stock of money. If, *e.g.*, he has

had a stock of sugar for a month, and he wishes to buy other commodities, he converts the sugar into money by exchange, and the money immediately into other commodities. If sugar were not a liquid possession, he would have had to keep part of the world supply of money in his possession for a month in order to be "liquid." He now keeps this part of the aggregate quantity of money not for a whole month, but at most for a day. His demand for money has thus been reduced at least to the thirtieth part, and if on the same day that he sells his sugar he buys again other commodities, his demand for money has probably been reduced to much smaller proportions.

The use of sugar as an illustration of the replacement of a stock of money by a stock of other goods is not very convincing. For even the articles of wholesale trade negotiated in the greatest world markets do not possess all the properties that enable us to apply them as a complete substitute for money. Up to a certain point the property of being readily marketable is, indeed, present in almost the same degree, but they fall short with regard to the other properties. Thus the divisibility is quite insufficient. If the holder of the stock of sugar has to meet small expenses, he can only attain his end by selling a large quantity of sugar, and, after having paid what he owed, keep the balance as a stock of money. Besides, sugar is perishable. Further, the article requires much space when stored, which entails considerable costs to the owner. Finally, sugar, and almost any other commodity, is much more liable to variations in the value in exchange, which entails risks to the holder which, with money, under normal circumstances can be avoided for the greater part. With most commodities the demand is much more constant than the supply, as *e.g.*, with many consumption goods; with other commodities, on the other hand, the supply is more constant than the demand.

Under these circumstances the possibility that other commodities can *replace* money is practically excluded. There *are*, however, cases where other commodities can render the use of money *partly superfluous*. That *replace-*

ment is not possible appears from the fact that nobody would decide to substitute a stock of sugar for his stock of money, if only for the reason that in this case he would need a whole warehouse instead of a safe.

But for the dealer in sugar the possibility exists, without question, that money may become *partly superfluous*, because in his stocks of sugar he has also a liquid possession. Nor are the storage costs for him so great a disadvantage as they are for others, because he also wants a stock of sugar to supply his customers. And in this the expectation of a rise in the price of his article can, besides, be an argument for him in some cases. If he expects a rise in the price, he will prefer to enlarge his stock of sugar and decrease his stock of money. For since he is equally liquid with the sugar as with the money, the sugar can render the stock of money superfluous in this case.

However, it is clear from what precedes that the cases in which stocks of readily marketable articles render stocks of money unnecessary will not occur in great numbers, while the substitution of other commodities for money will be only sporadically met with.

In this respect, securities, and particularly bonds, offer better chances than commodities. With shares the instability of the price is almost always a preponderating difficulty. With many bonds this drawback hardly exists. Also the question of the storage can be settled almost as satisfactorily with securities as with money. Nor has the risk of decay any influence here. And as to marketability, this requirement is also fulfilled for many bonds which are negotiated at exchanges in large amounts. One drawback remains: the lack of divisibility. Bonds can only replace stocks of money which are kept for large transactions; they cannot serve as stocks of money kept to pay for small purchases. Another disadvantage, also in reference to large transactions, is that they can never be used as immediate payment for a purchase, as the proceeds as a rule are not at the seller's disposal until the next day.

Over against the disadvantages mentioned and still to be mentioned there may be placed a great advantage, which

even cash, which so far we have exclusively treated, lacks—*i.e.* the fact that the bond yields interest.

This is an important point. At the time we have considered the fact that *money apparently yields no interest to the holder as a highly remarkable phenomenon, which called for an explanation.* And we explained this by the fact that *the possession of the readily marketable intermediate good offers an advantage in exchange transactions to the holder. This advantage results in a profit in the exchange, and this profit is then the interest, which, though not directly visible, is nevertheless present.* In the bond the interest is, however, directly visible, and yet in some cases it can replace money. Of course not in all cases. If we did not know the facts, and could not daily observe them around us, we might directly be inclined to conclude, led by the theory developed in this book, that the use of money would then be quite superfluous, that then money could not exist at all. For nobody would consent to forgo the profit of the coupon of the bond if, in addition, he could enjoy the same advantages as those that he could derive from a stock of money.

In some cases, however, the bond can render money superfluous, or it can replace it. Suppose someone intends to buy a house. He is in no particular hurry about it, but waits until he finds a house that seems suitable to him in every respect. As soon as this opportunity presents itself, he must have the necessary cash at his disposal. This may be the next week, it may not happen until after a year. If he is in possession of easily negotiable bonds, it is quite unnecessary for him to sell them at once and to keep the money in hand from the moment when he conceives the plan of buying a house. It is quite unnecessary for him to have money at command during the whole interval between the formation of his plan and the purchase of the house.

The bond can also be a substitute for money. For if he is not in possession of bonds, but if his property consists in less readily negotiable commodities, or in land, he may sell them at a favourable moment and buy bonds instead, in order to have this readily marketable possession ready at the moment when the purchase of the house takes place. In

the meantime, he can have the advantage of the interest on the bond.

There are, however, also disadvantages connected with this and similar cases. First of all, the smaller stability of the price of the bond previously mentioned, and, besides, the costs of purchase and sale.

It is owing to these two drawbacks that the bond can make the stock of money superfluous and can replace it only when the stock of money would have to be kept for a considerable time. If, *e.g.*, the possibility is taken into account that the price of the bond may fall 1 per cent. in the course of one-fifth of a year, this would already cancel the whole profit of the interest of a 5 per cent bond.¹

In case of a more or less regular substitution of bonds for money, the difficulty of losses through lower prices would, of course, in the long run be compensated by profits through higher prices—at least in so far as gilt-edged bonds are concerned, of which it may always be expected that in course of time they will again reach their old prices. The drawback, however, remains that for a considerable period after a rise in the market-rate of interest for long-term loans the substitution of bonds for money would produce a loss.

Besides, the profit of the interest is still further diminished by the costs of purchase and sale of the bonds. These, too, are an obstacle to the substitution of bonds for money. The costs of purchase and sale are mostly a half per cent., so that if the money-user must exchange the bond for money, and the money again for bonds ten times in a year, the entire profit of the interest has again been lost in costs. Since the total costs are generally higher, for one thing because there is always a margin between the price offered and the price asked, the interest would have already been lost with a much smaller number of exchanges per year.

There would, of course, be a contingency in which these costs could be avoided. If, *e.g.*, the disadvantages mentioned, not including the costs of purchase and sale, did not weigh so

¹ In all these considerations we have in view only those Stock Exchanges where it is customary to negotiate bonds with the interest added, as at Amsterdam and New York, in contrast with the usage of the London Stock Exchange, where bonds are negotiated "flat."

heavily, so that for shorter periods also the stock of money could be replaced by bonds, this would still further increase the marketability of the gilt-edged bonds. From this it would ensue that they would again be used more frequently, so that in many cases the bond need not even be sold, because the person who was to be paid would as readily accept a bond in payment as money. From the above exposition, however, it appears convincingly that bonds have never been able to attain this ready negotiability. They can only replace money in those cases in which it is expected that the stock of money will have to be kept for a considerable time, and these cases are not numerous, at least not of such frequency as to make the bond so universally used that in payments conversion into money could generally be omitted. For this reason, these costs will always continue to be a drawback to the use of bonds as a substitute for money, and even the first-class bonds have never succeeded in reaching the privileged position of money.

Nevertheless, it appears from what precedes that theoretically this possibility exists, and a further justification of the yield theory of the value of money may not be out of place here. For a difficulty might present itself which calls for an explanation. We have found in the discussion of the fundamental factor that the value of money is determined by the interaction of yield and value, in which we had, of course, to start from the use as money of a good that already possessed value in exchange for other reasons. Let us suppose that a 5 per cent. bond redeemable in gold was so readily negotiable that it could entirely replace money, which implies that, besides the ready marketability, the bond would also possess the other qualities inherent in money. This bond has then, of course, value on account of the fact that it yields interest. When the rate of interest is 5 per cent., then, by virtue of the annual interest alone, the gilt-edged bond is already worth the full 100 per cent. But the yield-theory of the value of money has assumed that in the forms of commercial profits a yield is hidden in the medium of exchange which accounts for the full value on the basis of the yield, also for a non-interest-bearing medium

of exchange. Has the interest-bearing medium of exchange theoretically supposed here—the interest-bearing bond which quite replaces money—then a double value? Is this value 100 per cent. in virtue of the coupon, and once more 100 per cent. in virtue of the yield by the use as medium of exchange? Hence together 200 per cent.?

This supposition would throw the whole yield theory of the value of money out of gear, and the advocate of this theory must be able to explain the possibility of an interest-bearing medium of exchange, and show what is the value of this medium of exchange.

I have supposed that the bond was redeemable in gold. It was necessary to assume that the face value of the bond was expressed in a valuable good, for in our hypothetical case, money, as we know it in our present society, was supposed not to exist, as the bond now served as medium of exchange.

We have already seen, for the non-interest-bearing medium of exchange, that in the interaction between yield and value a state of equilibrium was established at the point at which the yield of the money of a certain value in exchange still produced just the normal profit. Of course this did not imply at all that further business transactions with lower returns than the marginal ones should not latently be present. But people are not prepared to keep a stock of money at ready command for the sake of these possibilities, because the normal yield could not be derived from this money.

When, however, an interest-bearing bond functions as medium of exchange, less remunerative commercial possibilities might be turned to account, and for this purpose a larger stock of medium of exchange in the form of interest-bearing bonds would have to be kept. In this we may assume that at a rate of interest of the moment of 5 per cent., the yield of the stocks of medium of exchange, according as they become larger, falls from 5 to 4 per cent., and further to 3 per cent., 2 per cent., and *e.g.*, to 1 per cent. If the available quantity of bonds suitable to be kept as stock of medium of exchange is of such a quantity that the yield of the stock is still 1 per cent, the 5 per cent. bond functioning

as money will reach a quotation of 125 per cent. For 1 per cent. of 125 is $1\frac{1}{4}$, which added to the interest of 5, which the bond bears, makes $6\frac{1}{4}$, being 5 per cent. of 125—*i.e.* the normal yield of capital at the moment.

It is more probable that under these circumstances 4 per cent. bonds would be issued which would then be quoted exactly at par, the money function producing the remaining 1 per cent.

The person who had obtained a credit by the issue of the bonds might then profit by the fact that his bonds fulfilled the functions of money, which enabled him to obtain credits for 4 per cent. instead of for 5 per cent.

We have been obliged to discuss these suppositions, although they bear a purely theoretical character, in order to justify the yield theory of the value of money, where it might be called in question whether it can also explain the phenomena in case we have to deal with interest-bearing money. As we have seen, the possibility that bonds may be used as medium of exchange is only rarely met with in practice. Nevertheless we have had to make these theoretical suppositions because in practice different forms of interest-bearing money (money that besides the not directly visible yield of the stock of money also yields visible interest) unquestionably do exist. These forms of medium of exchange will be treated in the following chapters, and the true significance of the operation of these forms of money, and their influence on the formation of the value of money in general, will there be examined.

It is, however, of importance to point out here that this interest-bearing money presents great advantages over money that yields no returns besides the profits derived from its function of medium of exchange. For with, *e.g.*, gold as medium of exchange the commercial possibilities which produce less than the normal yield of capital are excluded. On use of interest-bearing money less remunerative possibilities might be made productive.

We may now proceed to the modern money system, as it operates partly with non-interest-bearing, partly with interest-bearing money.

CHAPTER XXIV

THE GILT-EDGED CLAIM AND ITS INFLUENCE ON THE VALUE OF MONEY. COMMERCIAL ACCEPTANCES AND BANKERS' ACCEPTANCES

THERE are individuals and corporations that enjoy such perfect confidence that they can obtain goods without having at once to give others in exchange for them.

This must be of great importance for the demand for money, hence for the value in exchange.

For we have seen that barter is attended with such grave difficulties that it occurs only sporadically in a somewhat developed exchange organisation. Accordingly, exchange transactions are completed by the aid of money; and whoever wishes to acquire commodities in exchange must take care to have money at his disposal, which enables him, when and as soon as he wishes to buy a certain commodity, to give the money in exchange for it. He who enjoys, however, enough credit can often buy from those who place confidence in him; even if he has no cash in hand. For possible transactions of this nature he need not keep a stock of money.

Of course he will have to pay ultimately, but it makes a great difference for the demand for a stock of money whether one must have money at command for possible purchases or whether one has to pay for the purchases already made at the appointed time.

Let us for convenience sake, and by way of illustration, consider the difference between two individuals who both spend their entire monthly income in the course of a month, one of them being in good credit, the other not. The latter must keep his entire monthly income as money in hand at the beginning of the month, and draw from it day by day, according

as he buys. When he spends approximately the same amount each day, his average demand for money is about equal to half his monthly income. He therefore keeps tied up on an average an amount of the aggregate quantity of money which is equal to about half his monthly income.

The former, who can buy on credit at all his suppliers', has no need of a stock of money. He buys what he wants and settles his debts at the end of the month, as soon as he has received his monthly income. Of the aggregate quantity of money, he will keep his monthly income tied up for at most a day per month.

Here we see how in many cases the fact that an individual enjoys credit can render the use of money for the greater part superfluous, *i.e.* how in these cases the demand for money is reduced to a minimum.

I have already pointed out more than once that the formulæ and equations of the mechanic theories of money bear a retrospective character, and also that the velocity of circulation of money is not a cause of the value of money, but that the factors that determine the value of money at the same time determine the rate of circulation.

In this connection we have a further opportunity to point this out. The transactions of the two consumers have the same value. But the person who enjoys credit develops a much smaller demand for money in consequence of this. The result of this is both a greater rapidity of circulation and a smaller value of money. If it should be contended that the greater rapidity of circulation was the cause of the smaller value of money, one might with equal justice ascribe the cause of the greater velocity of circulation to the smaller value of money. Both assertions are, however, equally erroneous. The cause is here the fact that the buyer enjoys credit, and this has the twofold consequence of the greater rapidity of circulation and the smaller value in exchange.

The credit of the participant in the exchange transactions has another signification for the economic utility to be attained.

The great importance of this does not lie in the consumer. For, as we have already seen, the economic utility of the

medium of exchange to the consumer is very great as regards the first quantities, while for further quantities the economic utility, and with it the demand for money, falls somewhat suddenly almost to zero. This is owing to the fact that his business possibilities are fairly sharply defined, and are almost limited to what he has to buy from his income to meet his normal requirements of life. Even though, thanks to his credit, he can, so to speak, keep a large stock of money gratuitously, no commercial possibilities which would otherwise be excluded will come within his reach because of this.

But the significance from the point of view of economic utility is much greater when the tradesman's credit renders the use of money for the greater part unnecessary. For if, for convenience sake, we may consider the question for a moment from the side of the costs, we may state that the *avoidance of the loss of interest brings a large number of commercial possibilities within the reach of the tradesmen who enjoy credit* which would always remain quite excluded from others.

We have already seen that the tradesman who must have a stock of money at command for possible commercial transactions, must find the remuneration for this stock of money in that part of his business profits that may be considered to be due to the stock. The commercial possibilities which are unable to produce this yield fall, on this account, beyond the tradesman's reach. For the sake of these possibilities he will not put himself in possession of a stock of money, for if he did so the capital thus invested would not be remunerative.

The matter is entirely different in the case of the business man whose credit renders the possession of a stock of money entirely, or at least partly, superfluous. This tradesman need only make profits which ensure a proper yield on the capital invested in the commodities in which he deals. His business need not, in addition, yield the profit on his stock of money, or, if he should have to keep a small stock of money, then only the profit on the small capital thus invested. This man is in the same position, compared with the tradesman in bad credit, as is a merchant who sets up a booth in

the market-place compared with the shopkeeper who has his shop in an expensive building.

The tradesman of good repute sees commercial possibilities within his reach which are quite excluded from others. And the economic utility of this is that the distribution of commodities, which is the function of trade, can be carried out with less friction. The costs of the distribution have diminished through the tradesman's credit; he can carry through transactions which would otherwise be impossible, and the ultimate economic utility of this will benefit the consumer.

It goes without saying that every credit is limited, and, with this, the extent to which the use of money is made superfluous for everybody. For the consumer, credit is generally restricted to a comparatively small number of regular suppliers; for the tradesman to those with whom he is accustomed to do business. When new relations have to be drawn within the circle, the inquiry offices of the tradesmen or their banks must be able to furnish the required information. By these expedients endeavours are made to economise as much as possible on the stocks of money.

The above given exposition might make it appear as if credit were exclusively or particularly given with a view to saving on the stocks of money that have to be kept. It is by no means my intention to give such a misleading view of the matter. Granting of credit is, in the widest sense of the word, placing of capital at somebody else's disposal. And what is peculiar here is that the saving does not take place because a quantity of money is put at the other's disposal; on the contrary, economy on the stocks of money would not be reached in this way.

The economising on the stock of money is, so to speak, quite accidentally and incidentally connected with the creditability of the purchasers. It is not owing to the fact that credit is granted them, but owing to the fact that they *could get a credit as soon as they wished it*, that the saving is reached.

In our discussion of the cases in which the use of money is rendered unnecessary, we arrive at the same principle

as underlies the use of money itself. For the significance of money lies not so much in the fact that we buy with it, as in the fact that if *we wish to do so we shall be able to buy*. Our demand for money for the purpose of buying immediately is at once cancelled by our offer of money when we do buy. But our demand for money in order to be able to buy as soon as it shall prove necessary is the demand for money which actually keeps the aggregate quantity of money tied up.

And what renders the medium of exchange superfluous is based on the same thought. It is not the giving of credits that makes the demand for money of the receiver superfluous. This is reached by the fact that the man will be able to get credit if *need be*—*i.e.* as soon as he wishes to buy.

The elimination of the services of the medium of exchange is therefore quite incidentally connected with credit; it is by no means the purpose of it, but it more or less accidentally accompanies it.

Above I have again directed attention to the fact that we develop demand for money in order to be able to buy if need be. In this connection it is desirable to state this once more also, for this reason, that otherwise confusion might easily arise with regard to the seller of the commodities. For with the too great significance often attached to the circulating of money, the thought may easily occur that, with reference to the demand for money, it amounts by no means to the same thing for the seller whether he is paid in money or grants a credit. It might then easily be thought that money is indeed rendered superfluous for the buyer who is considered worthy of credit, but that in this way the seller is not paid in money, and, in consequence, a money-vacuum arises with him. Or, in other words, the demand for money is simply transferred from the buyer to the seller, and the total demand for money remains unchanged.

It is easy to see that the thought of this transference of the demand for money is a mistaken view of affairs, if it is considered that demand for money is developed in order to be able to buy if desired. If neither the buyer nor the person who in this case is the seller enjoys credit, both will demand a stock of medium of exchange to provide for this need. The

quantity of medium of exchange in money that they demand is chiefly determined by the interaction of the medium of exchange and the profit to be derived from the quantity of medium of exchange, as this was set forth in the discussion of the fundamental factor. Further, also, the other minor factors mentioned assert their influence. When now the buyer enjoys credit, so that a stock of money is superfluous for him, his demand for money is eliminated. The seller who gives him credit will then, indeed, not be able to replenish his stock of money from the proceeds of the sale, but will have to do so by other means. This will not, however, affect his total demand for a stock of money—this depends by no means on whether the buyer pays, or receives a credit. If it should be alleged that through the fact that the seller is not paid in money a shortage of money arises in his stock, it might just as well be asserted that there arises a shortage in his stock of commodities. That he gives a credit is a consequence of the fact that he is willing to place part of his resources at the disposal of another person, and is therefore quite independent of the question how much value in exchange he wishes to keep as cash.

Not always is the seller who considers the buyer as perfectly solvent able or prepared to give the buyer a credit out of his own resources. Then a third party must be sought who is willing to give a credit to the buyer, and a *modus* must be found to bring the three together. The state of affairs is then : there is a buyer who desires commodities and credit ; there is a seller who wishes to sell commodities in exchange for money ; there is a third person, who is willing to give money on credit. An expedient that often brings these three together is the commercial bill of exchange. The seller, *e.g.*, draws the amount of the proceeds on the buyer to the order of the giver of the credit, who hands over the money in exchange for the bill of exchange.

Incidentally this has again increased the possibility that the medium of exchange will be rendered unnecessary. For it will, of course, often occur that a buyer is in good credit with his suppliers, but that these suppliers are not able, or are not prepared, to furnish the means for the credit. This

difficulty is obviated by means of the bill of exchange. It increases the possibilities of business, as well as those of granting credits, and, incidentally, it leads to a saving on the stocks of money. The law makes the drawer (seller) the responsible debtor of the man who grants the credit, so that here a new security is offered—viz. that of the credit of the seller. To give further extension to the possibilities the drawee (buyer) can accept the bill of exchange. By placing his signature on the bill, the acceptor undertakes the responsibility in the first instance, and the payee has now the certainty of the two debtors: acceptor and drawer. He can fall back on the latter if the acceptor should fail to pay the bill. By this double security the risk of granting credits has been reduced, and the possibility of giving credits has thereby been extended. And where a better chance of obtaining credit may be relied upon, a saving on the stock of medium of exchange is again justifiable for a person who may possibly wish to act as buyer. The bill of exchange accordingly contributes to economise the medium of exchange by rendering the keeping of a stock of money partly superfluous.

We may, however, go yet a little further with reference to the commercial bill of exchange. This can be endorsed by the holder (giver of the credit)—*i.e.* this person can sell it and endorse it to the buyer. In virtue of this possibility, an individual can grant a credit even though he is not sure that he will not want his money back before the date on which the bill falls due. This means a new extension of the possibility of giving credits, and, with it, a further chance of making the medium of exchange partly superfluous.

In some cases, however, the commercial bill of exchange can attain something more than the elimination of the medium of exchange. Sometimes acceptor, drawer, and endorser are known by a wide circle as being good for their engagements. This renders the bill of exchange itself an article of trade, and—what is of great importance for its function of medium of exchange—it often becomes a readily negotiable merchandise. Moreover, the value of this commercial good is as stable as the medium of exchange, because the amount of the bill of exchange is expressed in money.

Nor does the bill of exchange require more storage than money. It is due to these circumstances that the bill of exchange can not merely make the medium of exchange partly superfluous, but that it can also replace it to a certain extent.

In one respect the bill of exchange is even to be preferred to money, *i.e.* in that it represents an interest-bearing possession, whereas money does not return interest—at least not in the same way as does the bill of exchange.

For the commercial bill of exchange falls due at a fixed future date. At this date the amount of the bill must be paid by the acceptor. If the holder wants his money back at an earlier date, he can sell his bill, *i.e.* discount it, at a rate of discount which is then agreed upon, and which is computed according to the number of days that the bill has still to run. This means that the holder earns interest every day on the bill as long as he keeps it. An exception to this occurs only if the rate of discount in the market rises rapidly, through which the possibility arises that the rebate at a later date (*i.e.* over a smaller number of days) becomes greater than at an earlier date (*i.e.* over a greater number of days before the bill is due).

When the different persons who have placed their signatures on the bill, and who are therefore responsible for the payment of the bill, are esteemed good for their engagements by a wide circle, there is, *as a rule*, ample opportunity to sell the bill at any time. Accordingly, the holder of the bill has a readily negotiable security (at least, readily negotiable as a rule), which, in addition, yields interest from day to day.

We have seen that also in other respects the bill of exchange can challenge comparison with money as regards the qualities required for the function of medium of exchange. Not, however, in every respect. There are three important exceptions.

First of all, the bill of exchange is, indeed, readily negotiable *as a rule*, but *not always* and under all circumstances. On this account, the bill of exchange is inferior to money with regard to the principal quality of the medium of exchange—its ready marketability. The holder of the bill

of exchange cannot be certain under all circumstances that he can buy whenever he wants.

Secondly, the bill of exchange cannot immediately be used in payments. In order to be able to buy, a purchaser of the bill must first be found, who under normal circumstances *can* indeed probably be found; but nevertheless those purchases that require immediate payment are excluded from the holder. This is in connection with the fact that the parties who have put their signatures on the bill are never so universally known that every seller is willing to accept a claim on these persons, so that, also on this account, it can never equal, nor can it even approach, the ready marketability of money.

Thirdly, the question of divisibility should be considered. The bill of exchange is issued for a definite sum of money, and only when the purchase sum of the commodities to be bought is equal to, or greater than, the amount of the bill, could it be used as medium in the payment. Money is again much to be preferred in this respect, as it is issued in any desired denomination.

There is therefore, as regards the bill of exchange, again the same interaction as with money, which, however, in contrast with money, leads to a negative result. We have seen that money became a medium of exchange because it was readily marketable, and that it then became considerably more marketable because it was used as medium of exchange. The negative cycle of the bill of exchange is this, that it is not sufficiently readily marketable to be universally used as medium of exchange, and as the bill of exchange cannot attain the standing of a medium of exchange, its marketability also remains inferior to that of money.

Nevertheless, the bill of exchange is a rival of money in two respects: it facilitates, first of all, the giving of credits, and thus tends to make the keeping of a stock of money partly superfluous; and, secondly, it can in some cases partly replace the stocks of money. This latter is of particular importance for the wholesale trade, in which generally payments need not be made immediately; but with this restriction, that the holder should keep in view that he

cannot sell the bill under all circumstances, so that he cannot always be sure that he will be able to buy whenever he desires to do so.

This two-fold competition is, however, of influence both on the demand for money and on the offer of money, and, consequently, on the value in exchange of money. For so far as the commercial acceptances *render* the stocks of money *unnecessary*, the demand for money on hand is eliminated. Whenever the tradesman can be sure of getting credit by the aid of his acceptance, money as expedient in exchange transactions is entirely eliminated. Thus trade is not encumbered by the necessity of having to yield the profit on a stock of money.

Further, the acceptance that has once been created can partly, and to a certain extent, *replace* the stocks of money of others. In this way the commercial acceptance acts on the offer of the nominal quantity of medium of exchange. Thus the very possibility of the creation of the acceptance eliminates part of the demand for money, and in addition the once-created acceptance enters into competition with the medium of exchange because it increases the nominal quantity. By this trade is again benefited, because the holder already received interest in the form of discount, and his business need not yield the profit on this interest-bearing stock of money. Commercial possibilities that could not be turned to account with non-interest-bearing stocks of money can here be made remunerative.

The services of commercial acceptances can in many cases be performed still better by bankers' acceptances. With them it is not the buyer of the goods who is the drawee who accepts the bill, but a bank with which an acceptance credit has been opened. The advantage to be derived thereby consists chiefly in this, that the bank is generally more widely known. This circumstance generally makes bankers' acceptances a more readily negotiable article than commercial acceptances, hence more suitable substitutes for the stocks of money. Also for rendering the stocks of money superfluous bankers' acceptances offer advantages over commercial acceptances. When, *e.g.*, the tradesman opens an acceptance

credit with his bank, by which his purchases will be financed, he can beforehand be quite as sure that he will be able to buy whenever he wishes as when he was in possession of a stock of money of the same amount as that of his acceptance credit.

Over against this may be placed one circumstance that refers to the bankers' acceptance and not to the commercial acceptance—*i.e.* that the bank, for the sake of the acceptance credit granted, must make provisions which often result in some degree in demand for money. We will treat this more at length later on, and will now proceed to the discussion of the different forms of money which are created, besides the original gold money with which we have dealt hitherto.

CHAPTER XXV

BANK-NOTES AND CURRENCY ISSUED BY THE STATE

THERE are some well-known economic conceptions which are valid for commodities in general, but which we may not apply to the medium of exchange without further consideration, if we do not want to run the risk of arriving at erroneous ideas and conclusions.

As such, we must subject the conception of the quantity of the total stock with reference to money to a closer examination. With commodities in general, demand is directed to a quantity of these commodities—*e.g.*, it may be directed to two pounds of sugar, or thirty litres of petrol, or twenty hundredweights of anthracite. And in the same way the supply refers to definite quantities—*e.g.*, of weight, or capacity, or number.

But, as has already been repeatedly set forth, our demand for the medium of exchange refers to a quantity of value in exchange in money, for where, *e.g.*, the utility derived from a barrel of petrol depends on the number of litres that it contains, the utility of a quantity of medium of exchange is not determined by the number of nominal units, but by the quantity of value in exchange which they contain.

For this reason it is necessary, when using the expression stock of money, to examine whether a supply of value in exchange in money is meant, or a supply of nominal quantities of money.

Both forms of supplies are of importance to the theory of money. A quantity of value in exchange is the only point of interest for the tradesman with regard to his stock of money. For him it is only of importance whether this quantity of value in exchange in money is able to produce the normal yield, in which, for the rest, of course, also the

other considerations carry weight which we have found to be secondary factors determining the value of money. Only with one of these factors is the nominal quantity of interest to him, and is his demand for money directed to it—*i.e.*, where the payment of a debt is concerned. Here it is the nominal amount of his debt that he has to furnish on the day of payment, and his demand is therefore directed to this nominal quantity.

In general, however, what is of importance is the stock of value in exchange in money, and modifications in the nominal quantity can, save for the necessary and known restrictions, only temporarily contribute to modify the quantity of value in exchange, *i.e.*, until it is realised that the yield is no longer in agreement with the temporarily changed quantity of value in exchange in money.

In the first place, a modification in the nominal quantity of money is brought about by the production of gold. When gold medium of exchange is solely used it is the digger of gold who increases the nominal quantity of money. At first this new gold will be taken in exchange for other commodities at the prevailing rate of exchange of gold, and when it appears that the commercial possibilities do not increase in the same proportion, the rate of exchange will be modified, to the disadvantage of gold.

Also the creation of the first-class claim to money represents an increase of the nominal quantity of money. In the first place, this refers to the creation of bank-notes by the central banks.

In the initial instance the central bank creates money by the issue of bank-notes, and by receiving money on deposit, which deposits may be withdrawn on demand.

The holders of the bank-notes or credit balances have a claim on the central bank. Juridically the form of this claim is somewhat strange. A ten-guilder bank-note of the Nederlandsche Bank states that the bank will pay the sum of ten guilders to bearer, and, bank-notes having been declared legal tender by the law, the Nederlandsche Bank can fulfil its obligations by simply giving another bank-note in return for the offered one. The Nederlandsche

Bank is, however, under another obligation—*i.e.*, to pay its bank-notes in gold, if the rates of foreign exchange render gold export profitable. As a security for this obligation the bank must take care always to have a metallic reserve of at least 40 per cent. of the total of the demand liabilities.

For the theory of money the juridic regulations are of importance only in so far as they have led to certain economic results. These results have been that within the country the bank-notes constitute a claim that can completely replace metallic money. A first condition for this was, of course, that the credit should be beyond doubt. When the conviction of this was firmly established, the next condition was that the bank should be universally known. This may be said to have been completely reached inside the country. Another requirement for a normal operation as medium of exchange is stability of value, and for the claim redeemable in gold this is automatically equal to that of gold money, if the security is a perfect one. Finally, the question of the convenience of the use of bank-notes entered largely into the decision whether they could take the place of metallic money on a large scale. Now for larger amounts bank-notes actually even present advantages over metallic money, because the storage and transit are so much easier. Moreover, the convenience of the use of bank-notes, which led to their general adoption, made them again more universally known, so that in course of time it has become customary to use the claim on the central banks as stock of money, together with the metallic money, on so large a scale that it is considered desirable to cash the claim only in certain cases.

For as this claim constitutes something that in nearly all respects can fulfil the same services as medium of exchange as metallic money, and often even better, there is no advantage in presenting the claim for redemption. There is only an inducement to do so in the one case in which bank-notes cannot replace gold—*i.e.*, for payments in foreign countries. For payment abroad one must be able to dispose of a claim on the foreign country or of gold, at least if also in the other

country gold operates as standard money. Generally it is cheaper to buy a claim on the foreign country, and in this case also cashing of the claim does not take place. Only when the price of the claim on the foreign country rises too high does it become more advantageous to exchange the bank-note for gold.

If the demand for gold assumes too great a volume, the central bank can generally protect itself in a very simple way. Over against its debts and its own capital and reserves, stand in addition to its stock of gold and further assets, such as buildings, etc., its claims which regularly expire, and are renewed or replaced by others. The central bank can hinder this renewal or replacing, chiefly by raising its rate of interest. The result of this is that its claims are partly paid off with the bank-notes issued. We shall presently examine the consequences of this, after first having discussed the significance of the increase of the nominal quantity of media of exchange by the creation of bank-notes.

Bank-notes almost entirely fulfil the same services as the originally more primitive metallic money. Accordingly, the formation of the value of the medium of exchange consisting of metallic money plus bank-notes takes place in principle in the same way as that of the medium of exchange as we have studied it in its primitive form. The same factors operate in the same way for the medium of exchange extended by the creation of bank-notes. The increase in the nominal quantity can bring about temporarily, perhaps even for a long time, many modifications and complications, and even permanent changes in the distribution of the wealth of the community; but the yield derived from money is mainly determined by the commercial possibilities, and further by the different secondary factors. From this follows, however, that the nominal quantity of money increased by the bank-notes will produce an almost unmodified yield, and that therefore, in course of time, the quantity of value in exchange will be the same. For the rest, the fluctuations and contingencies caused by the creation of new nominal quantities of money are difficult to survey.

We can give only a rough survey in broad outline of the ultimate result. More exact, but of less practical value, would be the statement that the value in exchange of medium of exchange extended by bank-notes would be the same as of a quantity of money extended with the same nominal quantity of the original metallic money. And even this is not quite accurate, because the greater convenience of the use of paper currency again promotes trade, and therefore modifies the yield.

The principal thing, however, is that bank-notes are medium of exchange, and fulfil their function in exactly the same way as the primitive money treated above, and that, accordingly, the principles valid for the formation of the value of metallic money are of application in exactly the same way to the value in exchange of money, consisting partly in metal and partly in bank-notes.

Besides the fact that bank-notes have been declared legal tender, and besides the possibility of exchanging them for gold as soon as this is desirable for payments abroad, a third factor that makes the existence of bank-notes as medium of exchange possible is of significance. This is that debts to the central bank can be paid just as well with bank-notes as with gold currency. Since bank-notes have been universally adopted as medium of exchange, this possibility has at present only a nominal importance, but originally the introduction of bank-notes must have been furthered by the fact that there was always a category of people who wanted bank-notes as much as gold money—*i.e.*, for so far as they were in debt to the central bank.

The raising of the rates of interest mentioned above affects most directly the second determinant of the value of money—*i.e.*, the settlement of debts. The fact that increase of the rate of interest by the central bank as a rule has such a strong and direct effect, is due in the first instance to the influence of the second factor. I even believe that there would be every reason to be surprised at the effectiveness of the rise of the rate of interest unless one had a perfectly clear idea of this second factor.

In the discussion of the influence of demand for money

for the discharging of debts it was stated that the action of this factor is acute and transient. If A has to settle his debt to B to-day, A must try to acquire the nominal amount of the debt by exchange or by a new loan, if need be at any cost. But, on the very same day, B gets in possession of the money, and is generally willing to part with it again in exchange for goods on quite normal terms. Almost as soon as such a demand for money arises (generally in consequence of imprudent financing), it is again cancelled by offer of money. The period of adaptation that follows a time of crisis is in this case more a period of recovery from the consequences—the real cause has immediately practically disappeared again.

But when a debt must be paid to the central bank, the cause does not disappear. It is an entirely different affair whether some creditor or other demands the payment of a debt, or whether the central bank does so. For if B is the central bank, the money will not be available for exchange transactions for some time to come. It is peculiar that the first effect of a rise in the rate of interest bears a perfectly moderate character. Some of the debtors of the central bank consider that the rise in the rate of interest is just sufficient to make it profitable to discharge the debt, and proceed to do so, if they can contract the loan cheaper elsewhere, or can more profitably exchange goods for money under the existing exchange conditions. But, indirectly, it is they who are really the cause why a shortage arises with others. The nominal quantity of money that they redeem must be supplied, and it does not return, as in the case of ordinary payments of debts. It must be supplied, and is then permanently removed from the stocks of money, from the stocks of those who possess resources in the *form of money*. If a private debt is paid off, money is only a mediator—intermediate good. For the payer of a debt the nominal amount of his debt is at the moment the end in view of his demand for money, but this money is immediately again put at the disposal of the other. The central bank however withdraws the money, thus causing the changed rate of exchange to continue.

In the second place, the psychological influence, arising from experience, asserts itself. Experience has taught that a rise in the rate of interest causes scarcity of money and a depression of the prices, and, accordingly, this depression is the immediate consequence of a rise in the rate of interest.

The nominal value that is redeemed at the central bank is the nominal amount that is withdrawn from the stocks of money. Now two things are possible, which will both occur in practice.

The first is that the depression of the prices, in consequence of the payments of debts and the psychological influence, is such that the value in exchange of money has risen proportionately more than the nominal quantity has decreased. The quantity of value in exchange in media of exchange has then risen, and will yield a lower percentage of profit, which will entail that a decrease in the value in exchange will gradually follow, until the value in exchange has again reached the original total. This at least on the supposition that the rate of interest on capital has in general remained the same.

The second is that the value in exchange of money has risen proportionately less than the nominal quantity has decreased. Then the quantity of value in exchange in media of exchange has decreased, and the percentage of profit that can be derived from the stocks of money will be higher, in consequence of which a further rise in the value in exchange of money gradually sets in, until the value in exchange of the aggregate of the new nominal quantity is again the same as of the total of the old nominal quantity.

When the central bank has made a mistake in fixing the rate of interest, and has put it too low, this is brought home to it in an exceedingly simple way—*i.e.*, by the decrease of the percentage of its gold reserve, in two ways.

In the first place it can be stated that its issue of bank-notes will increase continually, because it is possible to borrow from it at a lower rate of interest than the sum borrowed will yield. The central bank has then become the cheapest supplier of loans.

In consequence of this cheap offer of money, the rate of interest in the country is, however, lowered, so that outstanding credits abroad are redeemed, and at the same time the inhabitants of the country will grant credits there. It then also becomes profitable to cash claims on the central bank in gold and send this abroad. In this way the gold reserve decreases, and as at the same time the issue of bank-notes increases, the percentage of the gold reserve diminishes in two ways.

In addition to the demand for money for the payment of debts and the psychological element, the activity of the interest arbitrage is, in modern money traffic, the reason why an increase in the rate of interest by the central bank in general immediately takes effect. Even before foreign exchange becomes so weak that importation of gold becomes remunerative, the interest arbitrage indirectly brings pressure to bear on the prices of commodities. For then it becomes profitable for the holders of claims on foreign countries to sell their claims and invest the proceeds in the country itself at the higher rate of interest, or pay debts with them, *e.g.*, to the central bank. By the weakness of foreign exchange, which is the consequence of the offer of claims on foreign countries, importation of commodities is stimulated and exportation hampered. The stock of commodities which has thus been increased can only find a market at lower prices.

I stated above that by rise or fall of the percentage of its gold reserve the central bank experiences in two ways that its rate of interest is too high or too low. This is, however, true only if we should be allowed to start from the axiom that the rates ruling abroad are fixed correctly. When both in the country itself and in foreign countries the rates of interest of the central banks are too low, the central bank in one country will lose no gold to other countries. This is therefore not the reason why the percentage of the gold reserve decreases, but it will do so because people will everywhere contract loans at the central banks.

Only when the rates of interest of the central banks are everywhere in accordance with the rate of interest on capital

will the credit at the central banks—hence their issue of bank-notes—present a certain stability.

When in this respect a certain stability has been reached in consequence of the judicious choice of the rates of interest of the central banks, it is, however, even then not quite certain that the existing price level is the *theoretically correct* one.

The price level can differ from the theoretically correct one for a long time. This is an important matter, which we shall now have to consider, and which is easy to see by the aid of the yield theory of the value of money. So far as I can see, it is only by the aid of the yield theory of the value of money that it is possible to *establish, at least theoretically, what is the right price level* with a given nominal stock of money, provided that, at the same time, the way in which the demand for commodities is covered by the supply is known.

The old and most primitive form of the quantity theory could also determine this according to its doctrine. For this theory taught that over against the whole available stock of commodities stood the aggregate quantity of money, and that the value of the whole quantity of money was equal to that of the aggregate quantity of goods. This not only established what theoretically ought to be the correct proportion of value between commodities and money, but it also irrevocably established what the proportion of this value really was.

It has later been seen that the premises from which this primitive form of the quantity theory started were fallacious, and the commodities and the money, which were not exchanged for each other, have afterwards been excluded from this equation of the value of commodities and that of money. From this the scientific quantity theory of Prof. Irving Fisher and others has been developed, in which the number of times that money was exchanged and the volume of the exchange of commodities obtained a place. But thus two results, which the primitive quantity theory was supposed to have reached, have been lost. First of all, with a given quantity of commodities and a given nominal

quantity of money the price level is now no longer once for all fixed. The price level can rise or fall, and this is ascribed to the increase or decrease in the rate of circulation. The knowledge that with the same nominal quantity of money and the same quantity of commodities theoretically the price level may be different, has, of course, been a great step forward in the development of the theory of the value of money.

But, in the second place, Prof. Fisher's scientific quantity theory has lost another supposed result of the primitive quantity theory. For the scientific quantity theory is unable to indicate what, with a certain nominal quantity of money and a certain quantity of commodities, the theoretically correct price level ought to be. It would only be able to do so if it could indicate what theoretically ought to be the correct velocity of circulation of money, as also the theoretically correct volume of the turnover of goods. Nor are the later cash-balance theories able to do so, since they cannot show us what exactly the cash balance has to be under given circumstances.

The yield theory of the value of money does not lay claim to be able to indicate what, with a given nominal quantity of money and a given quantity of commodities, the price level will be. Within the limits of the science of economics, I consider this impossible, since this price level rests on *valuations* of the participants in exchange transactions. Only a psychology which knew all the participants, and understood how they, with their qualities of intelligence and character, would have to estimate, could determine this. But the yield theory of the value of money *can* indicate what the price level ought to be if their valuations are correct. This theoretically right price level lies just where the quantity of value in exchange in money is able to produce the normal yield of capital. It is this yield that would have to determine the theoretically accurate price level. Unfortunately, it is exceedingly difficult to estimate this yield, if only because, as we have seen, the yield of the stocks of money is part of the total commercial returns of the tradesman, and all the participants in exchange

transactions have at once to estimate what part of their returns should be ascribed to their stock of money. Besides, it is not so much the profits already made with the money that are concerned, but rather the profits that will be derived from it in the future. Nothing has value because of what it has yielded us, but only because of what it will yield us.

We may possibly regret that the factors which determine the theoretically exact value in exchange of money are so difficult to evaluate; this, however, does not alter the fact that this theoretically correct value in exchange is thus determined.

Now it is possible that for a long time the profit on the stocks of money is wrongly estimated by the participants; it will even have to be acknowledged that it would be quite an accident if at any moment this profit, and with it the value in exchange of money—and hence the price level of the commodities—is estimated quite accurately.

If for a long time the yield of money is evaluated too high, a too high value is assigned to money. Such a phenomenon is met with in times of crisis and depression, as was set forth at the conclusion of the discussion of the factor of the stability of the value of money. This case is, however, not entirely the same, because during a depression money is not evaluated too high in comparison with the yield really expected, but because then money is demanded instead of goods, of which the chance of instability is considered to be greater.

The former case—a too high estimation of the yield—is of still more general significance. For it is precisely the fact that the value in exchange of money rests on the estimation of the yield to be reached with the medium of exchange which teaches us how unstable is the foundation on which the value in exchange of money rests. It is not even possible to demonstrate by means of figures what theoretically the correct value in exchange would have to be. For many a share that is negotiated on the Stock Exchange it is easier to show in figures whether the ruling price is in the right proportion to the profit than for money.

An advantage, on the other hand, is the universality of the use of money, by which a too high valuation of one is frequently neutralised by a too low valuation of another. But tendencies may prevail for a long time fostering the inclination to make a too high or a too low estimation. In the theory of business cycles the fact of the difficulty of the establishment of the theoretically accurate value of money may not be left out of consideration. For if there were a basis that could be accurately calculated, instead of a yield that can only be approximated, many fluctuations in the price level, as we experience them now, need not take place.

We have seen that the principles on which the value in exchange of the medium of exchange extended with bank-notes rests are the same as those of the original money, and in so far the central-bank system brings no new element into the theory of the value of money.

A new element *is*, however, introduced by the fact that, thanks to the operation of the central banks, the nominal quantity of money can easily be increased or diminished. This gives rise to a certain elasticity. Where only metallic money is used, a greater need of medium of exchange can be met only in this way, that the greater demand directed to an unmodified nominal quantity causes the value in exchange to increase. And since the need of media of exchange refers exactly to the quantity of value in exchange in money, the greater demand automatically brings with it the desired increase of the supply as regards value in exchange. However, with a nominal quantity of money which could not be readily increased, this must continually give rise to fluctuations in the value in exchange of the money unit.

Thanks to the institution of the central-bank system, a greater demand of value in exchange in money can be met by the creation of new nominal quantities, and on decrease of the demand the nominal quantity can again correspondingly be diminished. Many unnecessary fluctuations in the value in exchange of the money unit can thus be avoided.

Especially in the case of a temporary demand for money it is now no longer necessary to obtain the money by offering goods in exchange, but the credits at the central banks can be temporarily increased.

This fact is of great importance for several factors which determine the value in exchange of money.

The effect of the demand for money for the payment of debts is mitigated by it. Instead of having to offer goods at almost any price in exchange for money for the settlement of debts against which provisions have not been made in time, a credit can be obtained at the central bank, in so far as this is willing to grant it. When, afterwards, commodities can be exchanged for money on more normal terms, the credit at the central bank can be paid off again.

The factor of future possibilities operates better by the institution of the central banks. If temporarily smaller returns must be expected from the stocks of money, it is no longer necessary, thanks to the central bank, to keep a stock of money to the full amount and make smaller profits in consequence of the lower returns. For, in consequence of the temporarily lower yield, the rate of interest on money decreases, and credits will be paid off to the central bank. The nominal quantity of money decreases, and without modification of the value in exchange of the money unit, much loss of profit can be avoided. For the quantity of value in exchange in money that has thus decreased can again produce a yield that lies nearer the normal one.

Nor is the significance of the central bank small with regard to the factor of friction. We see the beneficial action of this periodically. Payments of money are always accompanied by frictions, which prevent part of the medium of exchange from yielding its utility as stock of money. These frictions are greatest on days on which many and considerable payments have to be made, as on the first and last of every month. Without the assistance of the central bank the community would be obliged to keep permanently larger quantities of value in exchange in money by reason of these frictions, otherwise the value in exchange of money would periodically be subject to fluctua-

tions. As it is, the central bank regularly furnishes the required quantities of money on these periodical days by the mediation of those who can take up credits from it, and the bank-notes return again to the bank as soon as the friction has passed.

The factor of the stability of money has already been favourably influenced by the action of the central bank on the three above-mentioned factors. But greater stability can also be reached in connection with the main factor. Modifications in the yield of money need no longer be expressed in fluctuations in the value in exchange of the money unit, but in fluctuations of the nominal quantity of money with a scarcely varying value in exchange of the money unit.

A well-managed central bank can, therefore, promote the stability of money through four factors. And by this promotion of the stability, by the good quality of the money reached thereby the maximum of utility can be attained. The yield need not partly include a premium for the risk connected with the possession of money. And as the premium for the risk need not be earned, less remunerative commercial transactions are also possible, which otherwise could not have been undertaken.

So far we have mainly discussed bank-notes, and deposits in the central banks have been only cursorily mentioned, to which, for the rest, everything that precedes is equally capable of application. Nevertheless, deposits call for a separate discussion, because although they are just as good a medium of exchange as money, they yet fulfil their function in a slightly different way. Some transactions are carried out more easily with bank-notes, some by the aid of deposits in the bank. Accordingly it will sometimes be preferred to hold one's medium of exchange in the form of bank-notes and sometimes in the form of deposits.

One advantage that bank-notes possess over metallic money is that they take up less room and are more easily carried. For those who have to keep a large stock of money, and may have to pay large amounts, deposits, again, offer advantages over bank-notes. Besides, a balance at a bank is safer, because it cannot be stolen. On the

other hand, the fact that payment with a bank deposit is mostly effected by transfer constitutes a drawback. There may be objections raised on two sides. First of all on the side of the central bank, which will consent to the transference to the name of another person only if the latter also has an account at the bank. And in the second place when our creditor *has* an account, we can transact business with him only if he has sufficient confidence in us to believe that we actually have a sufficient balance at the central bank. If our stock of media in exchange consists in bank-notes or metallic money, we do not need this credit, but then, especially for large amounts, the drawbacks of storage and transit and safety again come to the fore. The greatest advantages are therefore offered by the deposits in the central banks when large amounts are concerned, and at the same time also the fewest disadvantages, because those who complete transactions for large amounts form a comparatively small circle, who can judge of each other's reliability in so far as they do business with each other. Consequently deposits in the central banks are used most by the wholesale trade, which mostly again disposes of accounts with private bankers or banking institutions, so that the two latter are the most frequent users of central-bank deposits. The sphere of action of bank-notes is, of course, much larger because they are always accepted, although in exceptional cases at the cost of some trouble and risk as regards storage and transport.

Of course the fact is of influence that the credit balance can, at any time, be converted into bank-notes, or the bank-notes, by those having an account, into a credit balance. If the credit balance could not always be immediately converted into bank-notes, bank-notes would undoubtedly be always preferred, on account of their so much wider sphere of action.

Accordingly, the state of affairs is this, that for some kinds of transactions it is better to hold one's medium of exchange in the form of a credit balance at the central bank, for other transactions in the form of bank-notes.

Now it is the participants in trade who, in connection

with the nature of the prospective transactions, determine the proportion in *which credit balances and bank-notes shall be held*. This is, indeed, very obvious; but nevertheless it is of importance to state it here, because we shall discuss this at greater length when treating private banking, for there we shall meet with a widely-held opinion that the private banks would also be able to extend credits, and consequently deposits, if the central bank did not lend its assistance by also granting credits more readily, and thus enlarging the issue of bank-notes. I will revert to this when discussing private banking.

For the moment we shall therefore confine ourselves to the statement that it is the public that fixes the proportion of deposits and bank-notes at the central bank. It is, indeed, exactly the same with regard to this as with regard to the proportion between the different denominations of the paper currency. Thus the Nederlandsche Bank issues bank-notes in various denominations. The 1000-guilder bank-notes are kept in stock for entirely different purposes than those of 10 guilders, and in connection with these purposes the public therefore determines the proportion between the quantities of the different denominations.

This proportion is, of course, not a constant one. Circumstances alter daily, and the daily modifications sometimes form part of modifications over longer periods. Thus on rise of the price level the 20-guilder note will partly take over the function of the 10-guilder note, which will then again partly replace the silver token money. And when there is reason to keep large stocks of money—*e.g.* in case of an expected rise in the value of money, or in times of great instability with regard to goods—the proportion between deposits and bank-notes will be modified in favour of the deposits.

Two things may therefore be established: (1) the public participating in exchange transactions determines the proportion; (2) the proportion is modified in shorter or longer fluctuations.

In reference to one of the determinants of the value of money, deposits have a special significance—*i.e.* with regard

to the factor of friction. The payment by means of a credit balance takes place by the holder authorising the central bank to debit his account of a certain sum in favour of the account of the payee. While bank-notes must be carried from a first person to a second, from a second to a third, a fourth, etc., and possibly back again to some who precede in the series, the central bank receives all the instructions for transfers to other accounts, and clears the amounts as far as possible. Accordingly, if number six has to pay to number two, he need not wait until number five has paid him, if he can only be sure that number five will also send in his instruction to transfer in time on the same day. While it is physically impossible to pay with bank-notes before having received them, an instruction to transfer can be given, if it is only certain that on the same day a sufficient amount can also be entered to the credit of the account. The friction connected with the transit is entirely eliminated in this way, and the stocks of money which would have to be kept on account of this friction can be saved in some measure by use of credit balances. This is therefore another advantage of deposits which represents, besides, an economic utility. For if in this way it is possible to economise on the stocks of money, a smaller profit will suffice, and remunerative commercial possibilities will present themselves which otherwise would have had to be omitted.

Besides, by transfer to another account or by cashing in bank-notes the holder of the deposit can also dispose of his balance by drawing a cheque. He can pay a third party with this cheque. This is therefore a third way of paying with the credit balance. But there are also certain restrictions with this way of disposing of a deposit. Also in this respect deposits cannot be put on a par with bank-notes when fulfilling this function. For the holder can pay with his balance by means of cheques only if the third person trusts that he really has a credit balance at the central bank of the amount mentioned in the cheque. In some countries the giving of this credit is facilitated by law, as an overdraft is declared a penal offence; in other countries these regulations are lacking. But even where they exist, the cheque

does not offer so much security as bank-notes, in consequence of which its sphere of action will always have to remain limited to a circle of participants who are able to judge each other's credit. Within this circle some advantages are, however, again reached—among other things the ease of transport when somewhat larger amounts are concerned. Compared with the transfers from one account to another, the cheque presents the advantage that it can also be used to pay those who have not an account at the central bank themselves, but who can yet pass on the cheque for their own payments, until in the end it is either exchanged into bank-notes or is again deposited by somebody to the credit of his account.

We have now seen that the central bank, to start with, creates money in two ways: first, by the issue of bank-notes; secondly, by opening deposit-accounts on behalf of its customers. The technique permits, then, of two ways of effecting payments: by transfers and by drawing cheques.

But there is, after all, still a third way in which the central bank creates money.

The central bank can make agreements, in which it undertakes to grant a credit to another party on certain conditions, some of which are fixed beforehand and some of which remain open for the time. The other party can then always be assured that, as soon as he wishes, he can obtain bank-notes or a credit balance at the central bank. We have already seen more than once that the certainty of being able to obtain credits as soon as we require them places us in almost the same privileged position as when we possess a stock of ready cash. The person who enjoys credit can buy as well as if he were in possession of a stock of money. And this fact is further intensified when by a definite arrangement a credit facility has been obtained. A person who enjoys credit may, indeed, expect in general to be able to obtain a credit as soon as he requires it, but he will not be quite sure about this under all circumstances. But a person who makes an arrangement with the central bank by which it beforehand guarantees the credit has, as it were, a stock of

ready money at his disposal in anticipation, to use whenever it shall be needed.

These arrangements are again of two kinds. According to one, the other party deposits a security consisting of stocks or bills of exchange, in return for which a credit can be obtained at the central bank. When making the contract a certain minimum annual commission is agreed upon in connection with the maximum of the amount that can be disposed of according to the arrangement, and, further, a commission and debit interest on the amounts disposed of.

The client who has made such an arrangement with the central bank is in many respects in the same position as a person who is in possession of a stock of money. There is, of course, this restriction, that in numerous cases money must be paid down at once, as in meeting daily expenses and when completing small commercial transactions. This credit-money can therefore not replace bank-notes or coins in these cases. But in the sphere of action over which deposits range the credit facility can also operate. We shall therefore try to draw a comparison with the deposits. For on the strength of a credit-facility one can dispose of funds as quickly as if a credit-balance were kept. The question whether a tradesman will keep a credit balance in behalf of his trade or make use of a credit-facility depends merely on the pecuniary advantage, and this again depends on several circumstances that are liable to modification. In both cases the tradesman must find his reward in the commercial profit, and he will try to attain it at the smallest possible cost. If he has usually a large stock of money and no stock, or only a small one, for a limited number of days, a credit-facility would be more advantageous. If, on the other hand, he has a large stock on a limited number of days, and if he generally holds his possessions in another form, the debit interest in virtue of the credit-facility would weigh too heavily, and he would do better to carry on his business with a stock of money than to avail himself of a credit-facility. In the case of a credit-facility, the debit interest is too high, and can be advantageous only when it need be charged for only a few days of the year. The tradesman who finds himself in the

necessity to pay the debit interest according to the credit-facility would do better to sell part of his goods, and thus create a stock of money, or to contract a long-term loan elsewhere on cheaper conditions, and keep the money at ready command. A person who obtains a credit-facility with the central bank will take care that his stock of money becomes only seldom exhausted, since this credit can only be applied profitably on rare occasions.

In practice, the credit-facility is chiefly used by private bankers and banks; if necessary, they can also replenish their stocks of money by short-term loans, and only in case these should not be available have recourse to the central bank.

The other kind of agreement is much more important from a monetary theoretical point of view, and also in practice. It is the agreement in virtue of which the central bank consents to discount acceptances which conform to certain conditions. By these it has been settled beforehand that in case of need the bank is willing to discount these bills, the discount being calculated according to the rate of discount ruling at the moment of discounting. Thus the central bank can undertake beforehand to buy a certain bill as soon as it shall be presented. If at the moment that it declares itself in principle willing to do so the bank-rate should be, *e.g.*, 3 per cent., but the bill is not offered for discount until later, the then ruling bank-rate—*e.g.*, 5 per cent., is charged. For the monetary function of the so-called eligible bills it is of significance that the holder knows that he can always sell them, and, on the other hand, also that the rate at which they will be discounted is not fixed beforehand.

The conditions which the different central banks are accustomed to fix for declaring bills eligible, we shall not discuss here in detail. We will only mention in passing that they chiefly purpose to ensure that the bills are drawn against real commodity transactions of a self-liquidating nature, running generally three or six months, it being assumed that the bill, when due, can be paid from the proceeds of the sale. Besides, it is often stipulated that the credit obtained by drawing the bill shall further the trade of the country.

Then, too, the central bank gives its support to the creation of treasury bills by declaring them eligible.

The holder of eligible bills is now again in practically the same position as the holder of a deposit—with this difference, however, that the acceptances *usually* yield interest to the holder, and a deposit at the central bank never does so. Accordingly, these acceptances are generally interest-bearing money; but in this there is always a somewhat speculative element. This speculative element is less pronounced if the paper is expected to be kept in portfolio for a longer time, and is greater as it is expected that the holder will soon have to part with it. This, and the prospective course of the rate of discount, determines whether a holding of acceptances or deposits must be preferred.

If the stock of money fluctuates very greatly, it would be necessary to discount the bills and buy them back again and again. In this case it would be better to keep a credit balance at the central bank. For let us suppose that a three-month bill is drawn, and accepted in payment at a discount of 3 per cent. After ten days the holder himself has to pay, and discounts at the rate of 5 per cent. ruling then. He then gains ten days' interest at 3 per cent., but loses more than eighty days at 5 per cent. — 3 per cent. = 2 per cent., and instead of receiving interest, has had, on the contrary, to pay. In general, the holder, of course, need not sell his bill to the central bank; he will generally succeed in doing so on more favourable conditions in the open market. But there the rate of discount fluctuates even more greatly, and, besides, the open market does not guarantee anything beforehand, and that which puts the eligible bill on a par with ready cash is exactly the fact that it can always immediately be converted into ready cash, even though it be against a variable rate of discount. But for the very reason that the rate of discount is variable, the bills, as substitution for other stocks of money, present disadvantages, unless it may be assumed that the stock will be kept for a long time, and will have to be used for payments only in very exceptional cases.

The participants in economic transactions, all being intent on making profit, try to circumvent the disadvantages with

which they are confronted in various forms. This applies also to the disadvantage connected with holding bills as stock of money on account of the variability of the rate of discount. In this the consideration has been that if many stocks of money are joined, parts will have to be occasionally paid, but other parts will remain comparatively intact; so that for this part a portfolio of acceptances may be kept. The action of private banks is partly based on this principle. If a large number of individuals entrust their stocks of money to a private bank, the joint cash thus formed can be partly invested in bills. If some of these individuals have to use their stock of money, this is no more than part of the total joint cash. Besides, according as the circle of the participants is larger, payments by some participants are again compensated by receipts from others, and there permanently remains a comparatively constant amount which can be invested in bills.

The private bank forms, in this way, as it were a joint cash.

Besides, the different private banks co-operate by supplying each other with call money, when some day the joint cash of one of them happens to have diminished too much, and that of another to have increased too much. They also sell parts of their holdings of bills in the open market to each other, if the decrease of the cash of one and the increase of that of another seem to bear a more permanent character.

The private banks induce their clients to concentrate their individual stocks of money with them by allowing them a credit interest on the amounts deposited. For the client the risk of the fluctuating rate of discount and the disadvantage of repeatedly buying and selling the bills are thus avoided, and the joint cash is much less susceptible to this disadvantage, because the combining of the cash warrants a much greater continuity in the volume of the joint cash.

These considerations on the central bank have led us, *via* the eligible bills, to private banking—that is, to the primary function of the private banks: that of interest-bearing joint cash. But the private banks have other functions than this which will be discussed in the next chapter.

Following the discussion of the bank-notes created by the

central bank, the money created by the State should be treated here, in so far as this is not the original standard money.

The State creates token money, small money, and sometimes currency notes. The fact that these forms of money can function as medium of exchange should be separately mentioned for the theory of the value of money. This possibility rests on this, that the State itself, to which many payments have to be made by everybody, accepts the fiduciary money created by it on a line with the standard money. For all payments of debts to the State this money has therefore the same value as standard money. Moreover, the State favours the circulation of its money by declaring it "legal tender," with which, according as this has been stipulated, debts can be paid to everybody, either to definite amounts or sometimes to unlimited amounts. Besides, in a certain sphere they supply an urgent need, which cannot be met by any of the other forms of money treated. For small and very small amounts there is no other money than token-money; hence the only way to render it possible to make small purchases is by keeping a stock of this money.

The proportion in which small purchases and larger ones will probably be made determines the proportion of the demand for token-money compared with the other forms of money in which those parts of larger amounts should be taken into consideration which can be paid only in forms of money of small value—at least in so far as the payment is not made by means of a credit balance. This determines at the same time the quantity that the State can bring into circulation. As regards currency notes, things are slightly different, since these serve for purchases of the same volume as the smaller bank-notes. But only when State and central bank create the same denominations must the currency notes compete with the bank-notes on an equal footing.

As a rule, the denominations will, however, be different, and then the same remark applies to the paper currency issued by the State as to the token money and small coins: the proportion in which it can circulate is determined by the proportion of the demand in connection with the volume

of prospective purchases and payments of debts and the other factors previously treated.

The problem of the value of money presents no new aspects in reference to State money. The same principles that underlie the formation of value for a community which would work only with primitive metallic money are also valid for a community in which the currency consists, in addition to metallic money, also of bank-notes and currency notes.

A further problem, however, presents itself in connection with the following considerations. If there exists money of different denominations, the proportion of the demand is determined by the proportion of the need. It may then occur that there is a greater quantity of some denominations or some kinds of money than is required by the proportion of the need, and that there is a shortage of others. Thus there may be, *e.g.*, too many half-crowns and shillings, and too few pound notes. Now the question is: What kind of money has a preponderating influence? Have, *e.g.*, bank-notes a decisive influence on the formation of the value of money? Then there will simply be a reflux of the surplus of silver money to the State. Or is silver money of preponderating influence, so that the value of money is lower because there is an abundance of silver, and there is, strictly speaking, a shortage of bank-notes? Or is there the third possibility, that each kind of money has its own value in its own territory—in other words, are the prices of commodities different for the commodities that are sold by the shilling from those that are sold by the pound? This last supposition seems strange; it would imply that a pound sterling would have another value than twenty shillings, and I believe that we may safely leave it out of consideration here. Yet we shall find it present again in the chapter on private-bank money, where it even constitutes a factor in the theory of business cycles.

In modern money systems, based upon gold as standard money and controlled by the central banks, bank-notes, issued by them on the basis of their gold reserve, must be of preponderating influence. For the value of the bank-notes

is kept on a level with the value of the money in foreign countries by the application of the gold standard. And the silver currency and the small money conforms to it. If with this value of bank-notes, which, *via* the gold, conform to the value of the money abroad, there is a surplus of silver money and/or of small money, the excess will flow back to the State or find its way to the central bank. If there is a shortage, this scarcity will induce the authorities to create more. Decisive, therefore, is the influence of the bank-notes, which conform to the international value of money, and the State money then conforms to this.

Here the difficulty is therefore not very great, but we shall meet with the same question with more complicated conditions in the discussion of private-bank money.

CHAPTER XXVI

PRIVATE BANKS ¹

As we have seen, the private bank is in the first place the holder of a joint cash. In this its function rests on the fact that in eligible bills an interest-bearing stock of money may be kept, whilst the risks owing to the fluctuations in the interest, together with such other drawbacks as that of the denominations, render these bills less suitable for the individual stocks of money, whereas this difficulty is for the greater part eliminated when the stocks are joined.

The bank receives the stocks of money from its clients, invests a part of them in eligible bills, and keeps a smaller part as a stock of ready cash. While the stock of money of an individual fluctuates greatly, in consequence of which the holding of bills would repeatedly have to be sold and bought back, the fluctuations of the various stocks of money neutralise each other for the greater part, so that a large part of the joint cash can be fairly constantly invested in eligible bills. If a contributor to the joint cash has to make a payment, he withdraws his deposit from the bank and makes his payment. The bank pays its clients interest, which is paid out of the interest derived from the bills, taking care at the same time to reserve a margin of profit for itself.

But the bank has also another significance for the study of the medium of exchange, for in many cases it is not necessary for the clients to cash the deposit. For the deposit in the bank is again a first-class claim, which can function itself as medium of exchange. First of all, it is possible to pay other clients of the bank by instructing the bank to transfer the amount to be paid to their account. But,

¹ Under the heading Private Banks I include all kinds of banks and bankers which accept deposits from their clients without having the privilege of issuing bank-notes.

besides, the bank is known in a wide circle, and it is also possible to pay others, not clients of the bank, with the claim. These others are frequently clients of other banks, and the different amounts that are to be paid and received are then generally settled by the banks among themselves by a clearing system. The operation of this clearing is practically the same as the settlement of debts and claims by transfers at the central bank, and the significance of it for the money theory is the same as was set forth when this was discussed.

The deposit in the private bank is therefore, as a reliable claim on a universally known institution, in itself again a form of medium of exchange. It can be used in a similar way to the deposit in the central bank, and generally has the great advantage that it bears interest. The consequence of this is that the deposit in the central bank cannot very well compete with that in the private banks, but that use is made of it by the private banks, which sometimes have to keep part of their stock of money in this form.

The territory in which it can operate is limited in the same way. In order to be able to buy with a deposit as medium of exchange, it is required, in the first place, that the supplier of the goods should consent to accept a claim on a private bank, and besides, that he shall trust that the buyer can actually dispose of a credit balance at the bank. This excludes numerous cases, and in general it can again be said that the deposit in the private bank has its sphere of action in particular with the wholesale trade and the trade of fairly large volume, but that it becomes less suitable as the stock of money must be used in smaller transactions.

The fact that the deposits do not merely constitute part of a joint cash, but can function as medium of exchange in a definite territory, is of great influence on the investment policy of private banks. For this again considerably limits the fluctuations in their assets. In their investment policy they can base their dealings on the fact that a first-class claim, which has once assumed the character of medium of exchange, fulfils services already as such, and that therefore for the clients there is no advantage in cashing the claim, but

that as medium of exchange it will pass on from one to another, and will thus continue to circulate. The interest which it yields then confers a special attractiveness on this medium of exchange for the holder, who will only proceed to cash his claim when he leaves the domain in which it can operate. Accordingly, the banks have learnt by experience that under normal circumstances there is a comparative stability in the deposits—that the oscillations remain more or less limited. This opens up the possibility of holding the assets partly in another form than ready cash and eligible bills. Accordingly, the assets are often partly not at once convertible into money. Strictly speaking, it is *only by this fact that money is created* in the real sense of the word *by the private banks*. For bank-notes are a creation of the central bank, and this is also true of eligible bills. These are, in the first place, a form of credits, and can serve as stock of money for the eventual purchase of commodities in a limited degree—*i.e.* in so far as it may be expected that they can be discounted with others. Through the declaration of the central bank that they are eligible, however, they become medium of exchange in a much wider sense, by which they find an extensive sphere of action. This is furthered by the operations of the private banks, but a new form of money is created by them only when they accept deposits against which they hold other investments.

Now the question arises: How far can the private banks proceed in their creation of money? Hence, what is the proportion in which deposit money and other money can circulate? Of which of them does the influence preponderate, or have private bank money and other money each a territory in which they dominate, so that each of them in its own territory determines its own value more or less independently?

A good deal of controversy has arisen regarding this question, which seems to have come to an end lately, but I cannot concur with the solution reached.

A few decades ago the opinion generally held was this, that the bank was a kind of mediator, a kind of place where credits were passed on. A placed a deposit in a bank, which

gave in its turn a credit to B. The deposit was then said to be primary and the credit secondary. The part the bank played was then purely passive—it gave credits in so far as it received them itself.

Later an opposite opinion was adopted. According to this view the bank gave a credit to B, who with the means acquired paid his supplier A, who again deposited the money in his bank, sometimes in the same bank as that from which B had obtained his credit, sometimes in another, but the banks together got back as deposits what they had given as credits. According to this view, the credits are primary and the deposits secondary. The bank is then the active element, which determines the volume of the deposits; this was summarised by the maxim, "Credits create deposits."

It seems exceedingly difficult to me to decide which of the two is, after all, primary and which secondary. It is a subject that might be discussed long and fruitlessly in the abstract. If the matter is considered in the concrete, it will have to be admitted that the old point of view was, to a certain extent, not so very strange, after all. Even a bank must have resources at its disposal to be able to lend them out. If, therefore, it wants to give credits, it must first have means. On the other hand, it may be alleged that it actually starts by having a capital of its own—let us say, for convenience sake, in the form of ready cash, which will probably generally be most in keeping with the facts. The bank can then give credits even before having received deposits, and those who are paid with the money obtained by the credits can deposit it again in the bank. If the question is viewed from the point of view of the earlier theory of money, one should start from the opinion then prevalent, that the deposits were nothing but a giving of credits, and disregard the fact that they usually function as medium of exchange. Seen in this way, the old standpoint appears to me right, for independently of the chronological order, the bank cannot give more credits than it itself receives.

But the matter becomes different when it is considered that deposits are money. If deposits were, besides, the only

existing form of money, the opinion frequently advocated at present might even be accepted. The banks would then be quite free in their creation of credits, because they could rely on the credits given finding their way back to them in the form of deposits.

But we know that deposit money is not the only money, and that its territory, although wide, is yet limited. For this reason the bank must always keep in view that the holders of the claims may present them to be cashed, so as to be able to buy in a wider field. The same thing also applies to the central bank, though its money has a much wider range. When the central bank creates too many credits, its money cannot all be maintained in circulation—people will cash it in gold, in order to be able to buy abroad. The money with the widest field will always remain dominant. With gold it is possible to buy everywhere, with bank-notes only within the country itself. If so many bank-notes are created that the prices within the country rise independently, and hence the central bank money decreases in value, the bank-notes will be cashed, and purchases will be made abroad with the gold.

Analogous is the condition with regard to private bank money. When the banks create too much of it, a separate formation of prices will take place in the field in which this money operates. This would give rise to a premium for bank-notes, as they can range over a much wider field. The premium is not so easily demonstrable here as the premium of gold over bank-notes. The latter, indeed, appears at once from the rise of the rates of foreign exchange. But this has, after all, no fundamental significance at all. If the central bank were obliged to buy and sell foreign exchange at the same price, here too not even a beginning of agio could ever be detected. The private bank must pay back the deposits that it receives in bank-notes for exactly the same amount, so that in this way there is no room even for a beginning of agio. But sometimes this is to be seen in a difference between wholesale- and retail-prices, for the sphere of action of private bank money is more that of the wholesale trade, and bank-notes operate in general, and more particularly in the field of

the retail trade. If, therefore, too many credits are given by the private banks, this will at first probably give rise to a small premium for the wholesale prices. But when the retail trade also has to buy at the higher prices, there arises a need of more bank-notes there. If the central bank does not wish to countenance the too lavish giving of credits, the need of bank-notes can be met only by the cashing of the deposits in the banks. I am therefore of opinion that the more recent standpoint is, indeed, an improvement on the other, because it does not regard the private bank merely as the passer on of credits. But although the assumption that deposits are medium of exchange is correct, the power of the private banks has been over-rated. They would possess the omnipotence ascribed to them only if their money had an unlimited field of operation, which would guarantee that one would never be obliged to cash one's deposit in order to be able to buy elsewhere. In order not to fall into the error of the widely held recent opinion, we must be able to distinguish the different forms of medium of exchange and the ground over which they range, and characterise deposits more closely as credits which are at the same time a *form* of medium of exchange. Accordingly, what people want to give as credits to the banks, and what people want to hold in the form of deposits as medium of exchange, are what the banks can give as credits. And though it may be difficult to decide which is chronologically primary, economically the deposits are primary, because they determine the maximum of the bank credits to be given.

However, in their own territory deposits are a medium of exchange, and they render the same services as bank-notes otherwise would have to fulfil. And, as we shall see later on, they do so even better. But since private bank money ranges over a large territory, bank-notes are expelled from this field. This has a great influence on the value of money. If we assume that the private bank money has been created in the proportion justified by the field in which it can operate, the same factors that in the more primitive community determined the value of the gold money now determine the value of the total quantity of money, including private bank money.

A reservation has, however, to be made, in so far as the private bank money bears interest. The bank pays its clients interest; hence the business profits of the tradesman working with a bank deposit need not yield the full interest on capital on the stocks of money.

Here another interesting problem presents itself. For by the interest derived from the deposit a third unknown quantity is, as it were, introduced into the problem of the value of money. The original difficulty of the value problem consisted in this, that the value of money is determined by the profits it yields, and that, inversely, the profits are again determined by the value. We have thought that we could find the solution of this by examining the interaction between value and yield, and by drawing the limit at the point at which normal returns on capital are ensured.

For the greater part this reasoning is also valid for the value of interest-bearing money if, at least for the moment, we start from the interest on deposits as from a firmly established datum. For if the interest on capital is, *e.g.*, 5 per cent., and the interest on deposits 2 per cent., the private bank money (deposit currency) must produce 3 per cent. in the field in which it can operate. This is not incompatible with the fact that at the same time other money (*e.g.* bank-notes) must produce a yield in business transactions of the full 5 per cent. For deposit currency is limited in its range. If it could just as well be applied in the field where bank-notes can operate it would certainly be used there, and people would not consent to forgo the interest on credit balances.

In the territory of deposit currency the value of this money is determined in the same way as we have set forth in the discussion of the fundamental factor and the minor factors, with the exception that further commercial possibilities can be utilised here. Where bank deposits can operate, business possibilities can be turned to account, which need yield only 3 per cent. on the part that can be ascribed to the stocks of money. If with the interaction of value in exchange and returns the limit is put at 3 per cent., the total returns of this money are again, 5 per cent.—*i.e.* the normal yield on capital.

But we started from the supposition that the rate of interest on deposits was 2 per cent., and this also is an unknown magnitude. It is, however, possible to solve this unknown, because we have another datum. For there is a close relation between the normal interest on capital and the debit rate of interest of the private banks. Let us suppose for a moment that the banks had no expenses, need not make profits, and ran no risks when giving credits. The rates for credit interest and debit interest could be the same then, and would agree with the normal rate of interest on capital. If the credit and debit rates of interest were lower than the normal rate of interest, more credits would be taken up at the banks, and deposits would be withdrawn; if they were higher, more money would be deposited in the bank, and credits would be paid off. Now the interest which the banks charge their clients must, however, be equal to the normal interest on capital, increased by a special premium for the risk connected with each particular borrower. They can credit the depositors with the debit interest, diminished by these premiums for the risks, the expenses, and the profits. The depositors, on the other hand, desire to make the normal interest on capital on their deposits. They find this partly in the credit interest and partly in the returns which the deposit yields them in its function of medium of exchange. This determines the credit interest—it is the normal interest on capital of the moment diminished by the expenses and the profits of the banks. And what the deposits must yield to the holders in their function of medium of exchange agrees with the expenses and profits of the bank. Of course, we must not expect a mathematically exact equality; we must, however, assume that in case of deviations there is always a tendency to restore the equilibrium of this approximate equality.

We can now also consider another problem more closely. As we have come to the conclusion that the private banks are not free in their creation of money or in the credits they give, the question arises in what way the limit of their creation of money and their credits is determined. It is possible to solve this question by again making use of a

scheme that indicates the percentage of the proceeds of different quantities of value in exchange in deposit money.

Let us suppose for our scheme that the medium of exchange can yield the following percentages, in which we again make use of an index-number for money (hence the reverse of the index-number for goods) :

100 million of the index-number				100 produce a yield of 4 $\frac{1}{2}$ per cent.			
110	"	"	"	100	"	"	4 $\frac{1}{2}$ "
120	"	"	"	100	"	"	4 $\frac{1}{2}$ "
130	"	"	"	100	"	"	4 $\frac{1}{2}$ "
140	"	"	"	100	"	"	4 " "
150	"	"	"	100	"	"	3 $\frac{1}{2}$ "
160	"	"	"	100	"	"	3 $\frac{1}{2}$ "
170	"	"	"	100	"	"	3 $\frac{1}{2}$ "
180	"	"	"	100	"	"	3 $\frac{1}{2}$ "
190	"	"	"	100	"	"	3 $\frac{1}{2}$ "
200	"	"	"	100	"	"	3 $\frac{1}{2}$ "
210	"	"	"	100	"	"	3 " "
220	"	"	"	100	"	"	2 $\frac{1}{2}$ "
230	"	"	"	100	"	"	2 $\frac{1}{2}$ "
240	"	"	"	100	"	"	2 $\frac{1}{2}$ "
250	"	"	"	100	"	"	2 $\frac{1}{2}$ "
260	"	"	"	100	"	"	2 " "

If now the expenses plus the profits of the banks are 3 per cent., and the normal interest on capital at the moment is 5 per cent., the credit interest of the banks will be 2 per cent., and at an index-number of 100 for money the deposits can amount to £210 million. If the index-number is 50, the deposits can amount to £420 million, and if the index-number is 210, there can be £100 million in deposits.

Many people, however, are of opinion that "credits create deposits," and that the banks are therefore by no means restricted to this limit of £210 million at an index-number for money of 100, as we have found it here in this suppositional scheme. They think that the banks, if they wished, could just as well raise this amount of £210 million, *e.g.*, to 300 million, by using greater facility in giving credits.

It seems to me, however, that the holders of deposits will soon realise that they then keep a larger amount of deposits than they need, and than they can make remunerative. First of all they will develop a demand for deposits abroad, which demand will cause the rates of foreign exchange to rise, until the gold point is reached. Then the deposits will be withdrawn, and gold will be demanded at the central

bank. This will bring home to the banks the fact that they no longer hold sufficient deposits against their credits, and that their own stocks of money are decreasing, so that they will find it necessary to limit their credits.

The central bank creates the money with the widest sphere of action. This is therefore dominant, and rules the money policy. The joint central banks, limited by the possibilities of the aggregate of the world quantity of gold, have the control of the way in which the demand for money is covered by the nominal quantity; accordingly, they determine what will be the value of the money unit. And when the index-number for gold has been thus established, the maximum of the nominal quantity of the deposits is also fixed for a definite field of action of the deposit money.

This field of action is, however, not of an invariable extent, and in course of years the territory of deposit money has been continually extended. Transactions of various kinds, which were formerly paid with bank-notes, are now settled with deposit money. For such prospective transactions at present stocks are therefore kept in the form of deposits in the banks, where formerly bank-notes had to be held. This, of course, continually enhances the significance of deposit money, and it is not surprising that it is often thought that the private banks also possess great power as regards the creation of money, and therefore with regard to the value of the money created. In this it is, however, overlooked, in my opinion, that the significance of private bank money, speaking internationally, is still very small, and will have to remain small with the present organisation of banking. For the connection with foreign money is entirely maintained by the central banks, which keep generally about half of the bank-notes created by them covered in gold. And when the private banks lend their assistance in an undesirable extension of the deposits, which cannot then produce a sufficient yield, foreign money will at once be demanded, and the deposits will be withdrawn in order to be able to obtain international money at the central bank.

Now the possibility exists that banks in all countries

simultaneously will proceed to give credits on a wider scale. Then the rate of interest falls everywhere, and there is no inducement to buy foreign exchange. In this case people will have to be content with an insufficient yield on deposit money for some time. The nominal quantity of deposits increases without the value in exchange of the money unit decreasing. But the total yield, consisting of the credit interest of the deposits and the proceeds from their function of medium of exchange, proportionately decreases. This creates a condition of the same nature as that discussed in the chapter on the Future Possibilities: money produces—temporarily as it is supposed—an insufficient yield. After some time the holders will begin to regard this as disadvantageous, and they will proceed to offer their money against goods, with rise of prices as a consequence. But when this rise of prices has set in in the wholesale trade, it will soon find its way to the retail trade, where the money of the central banks is much more generally used. If now the central banks do not wish to countenance any extensive giving of credits, the greater demand for bank-notes can only be met by withdrawal of the deposits from the banks, which then will be forced to reduce their credits. Thus we see that even an extension of granting credits, applied simultaneously by the banks in all countries, can be of somewhat longer duration only when the central banks are willing to further this extension. And the central banks are always restrained by the brake that is put on when the proportion of the gold reserve over against their liabilities becomes too unfavourable.

The territory of deposit money is, as has been said, not of invariable extent. And the trend is always towards enlargement. More and more also smaller exchange transactions are settled with deposit money. In so far deposit money supplants the other money, and accordingly the field in which the other money generally operates (not in which the other money *can* operate) becomes smaller. Consequently there is a tendency for a decrease in the value of money, so far as this factor is concerned.

We have seen that the maximum quantity to which bank

deposits can increase is limited by the quantity of deposit money that can produce a yield in its function of medium of exchange equal to the cost plus the profits of the private banks. An increase in the amount of deposit money is therefore possible in three ways: (1) an extension of the field in which the deposit money can operate; (2) economy in the cost or decrease of the profits of the banks; (3) lowering of the index-number for money.

So far we have only tried to ascertain what is the maximum limit to which the banks can increase the creation of deposit money. It is, however, evident that this limit will by no means always be reached. It is true that the competition of the banks will lead them to fix the credit interest for deposits not lower than is necessary to cover their expenses, leaving also a margin of profit. And also when the banks agree among themselves regarding the rate of interest to be paid, they will take care not to fix this rate too low. Nevertheless, the banks will, as a rule, by no means try to carry these credits to the extreme possible; the amount of the deposit money always remains, therefore, below the maximum attainable. This means that the margin between the normal interest on capital of the moment and the interest on deposits exceeds the sum of the expenses of the bank and the most moderate margin of profit. There will, therefore, be less deposit money than there could be under the given circumstances, and this smaller amount will be able—and will also have—to produce a greater percentage of profit. The phenomenon that the nominal quantity of deposit money remains below the maximum attainable under the given circumstances may proceed from a two-fold cause—viz. first, because the banks are reluctant as regards granting credits, and secondly, because the public desires to keep large stocks of money in the form of deposits. The reluctance of the banks keeps the nominal quantity limited, but as the public desires to hold deposits, the banks must arm themselves against this by lowering the rate of interest on deposits. Deposits must then produce a larger yield in their function of medium of exchange, which checks the desire for enlargement of the nominal quantity.

This phenomenon will present itself more particularly and intensively in times of crisis and economic depression, and we shall discuss this case more at length towards the end of this chapter. We have already discussed at some length the field of action of deposit money, and from what was said there another conclusion may be drawn. If deposit money is used more particularly in wholesale trade, and if we meet with other money more frequently in retail trade, the phenomenon, strange at first sight, becomes plausible, that the two forms of money with the same nominal money unit may have a different value in exchange. As we have seen, deviations can always be only very transient, since automatically forces are again called forth that tend to restore equilibrium, but for a time differences in the value in exchange between deposit money on the one hand and bank-notes and coins on the other will be possible.

It is to be regretted that sufficient detailed data to test these suppositions are lacking. No conclusions can be derived directly from the wholesale index-numbers and the index-numbers of the cost of living. First of all the thought from which we started, that deposit money is used more particularly in wholesale trade and ready cash more in retail trade, cannot be formulated by merely stating that the wholesale prices would give the value in exchange of deposit money and the retail prices the value in exchange of bank-notes and coins. Indeed, many costs have already been included in the retail prices which had not yet been made in the wholesale trade, so that another standard in terms of goods is applied to the retail prices than to the wholesale prices. This in itself gives rise to a difference between the two kinds of prices. But, besides, even the assumption that differences must lie on the money side is not justified. For in general new data regarding prospective production or possibilities of new markets for the goods will first be of influence on wholesale prices. If now all wholesale trade were financed with deposit money, and all retail trade with bank-notes and coins, it would make no difference whether the cause of a change in the difference of wholesale prices and retail prices lay in the goods or in

money—provided, at least, that the standard in terms of goods did not change—there would then in any case be a difference in the *value in exchange* between deposit money and ready cash. But since we cannot put this so simply, it is possible to deduce definite tendencies from the wholesale and retail prices only if we take all the modifications possible on the side of the goods into consideration.

In the case of the central banks, we have seen that the declaration of the central bank that it consents to discount a certain bill (or a particular kind of bill) as soon as it shall be presented is of significance for the monetary function of the bill. Through this declaration the holder of the bill can always be sure that he has a stock of money at his command as soon as he wants to buy or has to pay a debt, and this is all the services that can be expected from money. Also, in the creation of money by private banks something of the same kind is found. There, too, a title is conferred which, even before it takes effect, fulfils the function of money. I refer here to the credit facilities granted by the banks—*e.g.*, that of an acceptance credit. With this the bank gives its client the right to draw on it up to a fixed amount, as a rule on the basis of commercial transactions in commodities. The bank guarantees beforehand that it will accept the bill, so that the holder can always be sure that he will be able to sell it. Through this facility the client of the bank practically possesses the same advantage as if he could dispose of a credit balance at the bank. For he knows that as soon as he shall wish to buy he will be able to do so to the amount of the credit granted him. This form of money has the further advantage that there is no stock of money on which a sufficient yield must be obtained by the trader's commercial transactions. In the field where this credit can be applied, the credit-facility can therefore effect great economy as substitute for the stock of money.

That the credit facility performs the function of money here is, of course, again quite incidental. The tradesman requires credits for his business, and he does not want them before he buys. If, therefore, an arrangement is made that

will enable him to obtain a credit as soon as he shall buy, his demand for a loan will be covered as soon as it is made. But, quite incidentally, his demand for a stock of money is eliminated by this arrangement. Incidentally, but at bottom founded on this, that the credit is put at his disposal in the *form of money*. This supplies him, as soon as he wants to buy, with the two things required for this—*i.e.*, the means to buy and also with these means at his immediate command in the form of money.

The banks often charge a commission for this credit facility. They can do so because the payment of this commission always remains more advantageous than the keeping of a stock of money. In order to be able to judge the position of the client who has obtained a credit facility, it must be compared with the position of a man who has contracted a loan, keeps the amount of the loan on hand for a time, and proceeds to buy with it as soon as this seems advantageous to him. It is the financial advantage in comparison with this procedure that leads him to prefer the credit facility. Strictly speaking, there is still another consideration—*viz.* that in practice it will prove to be much easier for him to obtain a credit arrangement than to contract an ordinary loan. For in case of a credit arrangement the possibility exists of giving the goods bought as security in some way or other. But, apart from this, the acceptance credit is also cheaper. So long as he does not buy, the tradesman often pays a commission, which is, however, always a good deal cheaper than when he had taken up a loan and had held the money at command (or as a credit balance). And as soon as he does buy, the credit is usually cheaper for him than if he had had to contract a loan in another way. For the tradesman is then in the privileged position that the bill which he must draw when he uses the credit is an eligible bill in many cases, which implies that it partly fulfils the function of money; in consequence of which, the rate of discount remains comparatively low. If the bills drawn on the strength of a credit arrangement fulfil the conditions fixed by the central bank to render them eligible, the creation of money, and likewise the possi-

bility for the tradesman to do without a stock of money, does not originate, strictly speaking, from the private banks, but from the central bank. The private banks are then, after all, only mediators, which have to judge in how far the credit facility to be granted to the client is attended with a risk; but the fact that the client need not now keep a stock for prospective purchases is owing to the fact that an eligible bill can be drawn. In addition, another point is of interest here. It might be questioned if the demand for a stock of money is really rendered unnecessary, and, if not, then this demand is transferred from the clients to the banks. This is by no means the case when the private bank grants an acceptance credit, against which eligible bills can be drawn. For the bank which discounts the bill must, indeed, pay money, but receives in exchange another form of money in its joint cash, and even interest-bearing money—*i.e.*, the eligible bill.

All the credit facilities are, however, not arranged so that eligible bills can be drawn against them. This makes no difference to the client as regards his demand for money. But is not the situation then different as far as the bank is concerned? For when the credit is used, must the bank then not pay cash down? This would actually be always the case if the private bank were merely a joint cash, and if the organisation of modern banking and the frequent use of deposit money had not invested the banks with power to create money within the limits indicated before. In consequence of this organisation, however, no cash need be paid down against many transactions, and even if the payment is made in ready money at the moment, the money generally immediately returns to one of the private banks in the form of a deposit. Therefore the private banks need not keep stocks of money to provide for the credit-facilities granted by them, as the clients would require were it not for the credit-facility. Not until the private banks have exceeded the limits previously indicated would it appear that they had to pay in ready cash without the money returning to one of them as a deposit. But this does not refer to a normal case of a credit-facility—this applies to an

overstepping of the limits of the creation of money by the private banks. We can therefore, on the contrary, assume for the normal cases of credit-facilities that the demand for money is *not* transferred from the client to the private bank. So long as no purchases are made, the demand for money, which would exist but for the credit-facility, is always eliminated. In the case of eligible bills, these are merged in the joint cashes of the private banks, and the creation of money must really be attributed to the central bank. In case of a credit-facility, against which no eligible bills can be issued, the creation of money is supplied by the private banks, and this within the limits of the money-creation possible for them.

The influence of the private banks on the value of money may be summarised as follows. In the first instance the private banks are joint cashes : *i.e.* the bills that are declared eligible by the central bank are money on the strength of this declaration—and interest-bearing money too. For the individual who holds this money this disadvantage is, however, connected with it : that it cannot directly be used in payment in the case of a purchase of goods or for settling of debts. It must first be discounted. The individual would therefore always find himself faced with the disadvantageous necessity of having to discount the bills when he has to make payments, and of having to invest his money again in bills in case of receipts. In the first instance the private banks collect the separate private cashes by receiving deposits, and invest the joint cash for the greater part in eligible bills. While some contributors to the joint cash withdraw their shares at any time they may desire, others place their money in deposit. In this way the joint cash preserves a certain stability of volume.

In the second instance, the deposits with the private banks themselves become a first-class claim which will function as money. That is to say, they are used as means of payment without there being a necessity of exchanging them into cash, either by transfer or by drawing cheques. In this the different private banks co-operate and settle the transfers and cheques among themselves. In wholesale

trade this deposit money operates constantly, and accordingly continues to circulate permanently—*i.e.* it is not withdrawn as a rule, and if it should be withdrawn for ready money, it generally immediately returns to some private bank as a deposit of another client.

Accordingly, it may be said with regard to the fundamental factor that determines the value of the medium of exchange that in the field that lends itself to the use of deposit money it fulfils the same function as ready money, and that therefore the interaction between value and yield, and yield and value, holds as well for the nominal quantity of money enlarged with deposit money as for the original primitive intermediate good that began to function as medium of exchange. A complication arose by the fact that bank deposits are at the same time medium of exchange and short-term credits. This complication may be solved by the consideration that the quantity of value in exchange in deposit money must be able to produce a yield equal to the expenses and the profits of the private banks.

In addition, the credit-facilities which the banks offer their clients eliminate demand for money.

The total of the media of exchange consists of many more or less homogeneous, but also of some heterogeneous, components. The differences refer to the sphere of action, the nature, the question whether they bear interest or not, and the question whether they can be used immediately. Other commodities than money are only seldom taken into consideration for the keeping of a stock of medium of exchange in modern trade under normal circumstances. Only in times when the confidence in money has been shaken do people have recourse to other commodities.

Gold, which has been internationally adopted as medium of exchange, has the widest field of operation. Bank-notes, token money and small coins fulfil a national function. When in a country national money is too abundant proportionately, gold reaches an agio. The central bank controls the maintenance of the parity of bank-notes at the international level. Consequently the influence of bank-notes dominates nation-

ally; in case of an excess of token-money and small coins, they flow automatically back to the State.

Deposit money may be non-interest-bearing, as with the central bank, or interest-bearing, as mostly with private banks. The territory of deposit money is limited, and the nominal quantity that can be placed in the banks is determined by the proportion of the extent of this territory and the territory in which bank-notes usually operate, by the cost and the profits of the banks, and by the index-number of the medium of exchange.

Acceptances, whether eligible or not, are also money. This money is comparatively little suitable to form a stock of money for individuals, but quite suitable for joint cashes. For in so far as it forms part of the joint cashes, it should not be included when fixing the total nominal quantity of money, any more than the gold reserve or the bills in the portfolio of the central bank or the stock of money of the private banks. A simple adding up of the different kinds of money would, indeed, meet with further difficulties, because all the interest-bearing money, for the very reason that the interest is the yield of the credit given to the bank, has a smaller yield, and therefore another significance as medium of exchange.

Time deposits and bonds are also money in a much more limited degree. The tradesman who must be able, if need be, to buy at any moment, cannot use them. But a person who, *e.g.*, expects that he will buy after some six weeks, can start by placing his resources as fixed deposit for a month. Bonds can serve as stock of money only when it is expected that no purchase will have to be made for a very long period, because otherwise the risks of differences in the prices and the cost of purchase and sale are not even compensated by the interest.

The second factor—the demand for money for the payment of debts—also experiences the influence of deposit money. It has appeared already—when bank-notes were being discussed—that the influence of the demand for money for the discharge of debts on the value in exchange of money is greatly mitigated by the introduction of bank-notes. For by the issue of bank-notes it is possible to increase the

nominal quantity, if the need of it be felt, and to diminish it again when the demand for money has decreased because the payment of debts has taken place. The elasticity of the medium of exchange promotes in this way a more constant value in exchange. In their own territory the private banks can contribute to this, as they, too, are able to satisfy a temporary demand for money.

In reference to the future possibilities deposit money presents no particular aspects. The same thing that applies to money in general is also valid for this particular kind of money. When money is temporarily unable to produce the normal yield, but when better results are expected in course of time, people will not proceed to offer money more intensively in exchange for goods. They will much sooner be content temporarily with a smaller yield. The same utility that bank-notes yield will also be found in deposit-money. When the need of a stock of money temporarily diminishes, in consequence of the lower yield that can be derived from it, credits will be withdrawn from the banks, through which the nominal quantity of deposit money will decrease, and a higher yield can therefore be expected with the same value in exchange.

As regards this point, we have therefore again arrived at the same subject as was treated in the chapter on the Future Possibilities, in which, however, only the primitive money organisation was considered, when precious metal served exclusively as money. There we found that the temporarily low yield gave rise to a low rate of interest, that people were prepared to lend out their stocks of money, from which they could temporarily derive but a small yield, at a low rate of interest. At the same time, the holders of the stocks of money were, however, not desirous to part with their stocks by offering the money more intensively in exchange for goods; they preferred to accept a smaller yield for some time.

Thanks to the modern banking system, however, it is easy to dispose of one's stock of money when money temporarily yields smaller profits without having to make sacrifices by exchanging commodities at a less profitable rate of exchange.

People will simply proceed to redeem credits at banks, and thus reduce the nominal quantity of money automatically.

In the same chapter on the Future Possibilities a counterpart of this case has been treated, which also led to a lower rate of interest, but in which the cause was a different one. When, in times of crisis, people are afraid of the risks connected with the possession of goods, money will be demanded in exchange for goods. In such times trade soon falls, however, into a state of depression, and the stock of money will therefore be unable to produce a high yield. With the primitive money organisation we then found a high value in exchange of money, and at the same time a low rate of interest.

Applied to modern banking, we can then observe a remarkable phenomenon. The low rate of interest, which the banks can only obtain for money that they wish to invest in the market for a short time, forces them to lower the credit interest on deposits. But the holders of the deposits are not deterred by this. They consider money the most attractive investment, and are fully prepared to accept the low visible yield that they derive from the deposit interest for the sake of the not directly visible advantages that the possession of money offers them. The highly valued, not directly visible yield, depresses, therefore, the visible yield. We may even say, in general, that a low rate of interest on money and a low rate of deposit interest mean a high valuation of money. And it may further be said that a low rate of interest on money and a low rate of deposit interest in proportion to the normal yield on capital at the moment mean a high estimation of the yield of money in its function of medium of exchange. Or, in other words, a low visible yield is attended with a high valuation of the not directly visible yield.

In times of depression the phenomenon of a low rate of interest on money and a low rate of deposit interest is intensified by the fact that, as a consequence of the depression, the demand for credits, and with it the rate of interest on capital, is low. This in itself already depresses the total yield that money must produce, and with the high valuation of the advantage connected with the possession of money

there remains still less for the interest on money, the visible part.

In such a period there is little fear that the banks will greatly extend their credits. First of all, they themselves are little disposed to do so; and, secondly, their customers do not require them. The maximum that they can reach without the deposits being withdrawn will then by no means be attained, and in a time of depression the estimated yield of the stock of money will exceed the above-mentioned margin of the sum of the cost and the minimum profit required by the banks.

In this connection there is occasion to return once more to a subject which was discussed in the chapter on The Value of the Tradesman's Stock of Money—*i.e.* the question of the proportion of the tradesman's stock of money, his stocks of commodities, and his turnover. It appears from the fact that the rate of interest on money is much more liable to fluctuations than the rate of interest on capital, that the other part of the yield of money—the not directly visible part—is estimated differently every time.

In times of crisis and economic depression there is a general and pronounced tendency to estimate the yield of money higher; but crisis and depression are extreme cases. Between boom and crisis there are all kinds of gradations, and in every economic condition the position of the various tradesmen is different. Accordingly, there is a continual modification in the proportion between his stock of money and his turnover of commodities for every tradesman. It is not possible to establish a permanent proportion, but at any moment the proportion is determined for every tradesman by the yield that he expects.

The fourth factor—the stability of the value—can be favourably influenced by private bank money inasmuch as the elasticity of the nominal quantity is considerably increased by deposit money. For the rest, the direct control of the stability of the value of money rests with the central banks, and the private banks follow their lead up to a certain point. There is a danger that deposit money may exert an unfavourable influence in times of deflation. For

when, in times of crisis, the banks limit the amount of the credits they give, there remains a demand for money uncovered, and there is a danger of a further rise in the value of money.

The factor of friction is influenced by deposit money in the most favourable sense. There is less friction when payments are effected by means of deposit money than when bank-notes and coins are used. The transit of money is reduced to a minimum, because the banks settle their claims on each other by means of clearing.

One other important point remains to be mentioned—*i.e.* the stocks of money which the private banks themselves keep. It is peculiar that in this respect such entirely different usages prevail. In some countries the private banks try to reduce their own stocks of money to a minimum, in other countries—as, *e.g.*, in England—the private banks adhere to a certain ratio of the demand deposits, which has gradually become a consuetude. It is very interesting that in the United States it has been thought necessary to regulate the proportion, and this with different percentages for different places.

It is certainly remarkable that with regard to such an important question the policy is so entirely different in the different countries: in some countries the greatest liberty possible, in others a certain restraint by usage, and in the United States legal regulations.

The restraint, either by usage or compulsory, evidently rests on the conviction that it is expedient, or necessary to maintain a minimum reserve, because otherwise the creation of private bank money might assume undue proportions. In this it is deliberately wished to establish a connection between private bank money and central bank money, in a similar way as definite limits are set to the proportion of the issue of bank-notes and the gold reserve.

This is not the place to give an opinion on the question whether in this respect freedom or regulation is to be preferred. We may, however, repeat here, what has already been stated above—*i.e.* that deposit money is connected with central bank money already in another way, albeit with

the restrictions mentioned, and that a too profuse creation of deposit money by a too lavish granting of credits would be automatically corrected through this connection with central-bank money. If the banks require a smaller margin for expenses and profits, they can create more deposit money which will produce a smaller yield in its function of medium of exchange, and can nevertheless preserve the same value. A condition for this is that, with an unmodified normal interest on capital, the rate of interest on deposits be increased by what has been saved in the margin of costs and profits. If in one country this connection is not fulfilled, the credit interest, together with the yield on the deposits in their function of medium of exchange, will not be able to reach the normal interest that is being paid on capital at the moment, and foreign money will be bought. When, then, the rates of foreign exchange exceed the gold point, the deposits will be withdrawn in order to be exchanged for gold at the central bank, and the private banks will again be forced to take measures to replenish their deposits.

If in all the countries at the same time the condition mentioned were not fulfilled, deposit money would be offered against goods, and after the rise of the prices of commodities had reached the retail trade, demand for bank-notes would result, which would also necessarily lead to the withdrawal of the deposits.

In so far regulations of the ratio of the cash reserve of the private banks against their liabilities may be considered superfluous, and stable money may also be ensured by the central banks without them.

But the private banks can also create more deposit money if the field of operation of deposit money is enlarged. It can then partly supersede central-bank money in the region in which it previously acted, and the condition becomes slightly different. Then the demand for central-bank money must diminish, and either the nominal quantity of central-bank money must decrease, or the value of the money unit must fall. In the case of an extension of the sphere of action of deposit money in one country, the circulation of bank-notes can be diminished by shipment of gold. In case of an

extension in several countries at the same time, or in a country holding much gold, the offer of gold could not fail to depress the value of money.

Accordingly, in so far, regulations regarding the ratio of the reserve against the deposit money are therefore desirable, unless by a close supervision of the above-mentioned possibilities the influence of deposit money is controlled in another way.

Another possibility is that, instead of a compulsory ratio of the reserve of central-bank money against the deposits, a compulsory reserve by eligible bills may be prescribed. This would benefit trade. For as the banks must deposit part of their assets with the central bank without receiving interest, they can pay only a somewhat lower deposit interest than would be possible if they could derive interest also from this part of their assets. In consequence deposit money must now produce a higher yield in its function of medium of exchange, which excludes business possibilities which but for this would be quite attainable.

Amsterdam, August 1931.

INDEX

- ADAM SMITH, 32-38; on use of money, 32; on quantity needed by a country, 33, 35-37; relative problem and, 33-34; debasement, 34-35; supply of money, 34-35; "Anrecht," theory and, 38; money as instrument of commerce, 38
- Aftalion, Prof. Albert, 130-37; on von Wieser, 130-31; quantitative elements, 131-32; qualitative elements, 133-37; expectations about future prices as a determinant of the value of money, 136-37
- "Anrecht" theory, Hildebrand a precursor of, 89-92; denial of the existence of a value problem characteristic of, 89; Bendixen, 93-102; Elster, 103-6; von Mises and, 111-12; rejection of, Helfferich, 114
- Aristotle, on value of money, 7
- Banking, and the rate of interest on short-term credits, 271; and friction in the circulation, 286
- Bank-notes, use of, 203-4; and currency, 308-32; requirements for a normal operation of, 310; in relation to metallic money, 311-12; and settlements of debts, 312-14; bank-rate and yield of money, 314-16
- Barter, Kemmerer on, 73-75
- Bendixen, F., 93-102; on the nature of money, 93; on Knapp, 93; and *valor impositus*, 93; money unit and unit of value, 93-95; fluctuations of the price level, 96; cash balance and loss of interest, 97-98; claim to commodities, 99-100; creation of money, 101-2; Elster on, 103
- Bills of exchange, economy effected by, 302-3; in relation to money, 304-6; advantages connected with the use of, 306; bankers' acceptances, 306-7; and central banks, 327-29; eligible bills as joint cash, 329, 333, 351
- Bodin, Jean, and abundance of gold and silver, 10
- Böhm-Bawerk, Prof. Eugen von, von Mises on, 109; value in use and subjective value in exchange, 127 n.; and the income theory, 137-44; Aftalion's qualitative elements and, 137-41; expectations of future prices, 139; discharging of debts, 141-2; utility of money as instrument of trade, 143-4; theory of value, 218 n.
- Bonitas intrinseca*, and depreciation, 9
- Bowley, Keynes on, 173
- Bullion Report: inconvertible paper money and depreciation, 41; velocity of circulation, 42; credit, 42; relative problem, 41, 43-44
- Buridan, on value of money, 7
- Business cycles, theory of, Keynes, 170-93
- Cannan, Prof. Edwin, 161-63; valuation of money compared to that of commodities, 161; analogy and differences, 162-3
- Cantillon, Richard, 21-26; Condillac and, 27
- Cash balance theory, J. S. Mill and, 47; Wicksell and, 78; Marshall, 147-54; Keynes, 154-58; Pigou, 158-61; Cannan, 161-63; Hawtrey, 163-65; D. H. Robertson, 165-69
- Cassel, Prof. Gustav, 63-65
- Central banks, creation of money by, 309-10; and elasticity of the quantity of money, 319-20; and friction in the circulation, 320-21; and stable money, 321; deposits in, 321-25
- Claim to commodities, Money as a: Moll, 85; Bendixen, 93, 99-100; Elster, 103
- Claim to money, function of medium of exchange exercised by, 202; use of, 260-61, 297-307; bank-notes as, 310; deposits and, 334
- Clearing, and the friction in the circulation, 286

- Commodity-theory, in the Middle Ages, 7
- Condillac, Etienne Bonnot de, 27-29
- Cost-of-production theory: Petty and, 11; Cantillon and, 21; Pierson's criticism of, 51-52
- Creation of money, Bendixen on, 101-2; excessive, 279; central banks and, 309-10; deposits in central banks, 321-25; and credit facilities, 325-29; by the State, 330-32; by private banks, 335-38; consequences of extensive, 342-43; credit facilities and private banks, 346-49
- Credit, value of money influenced by: Ricardo, 40-41; Bullion Report, 42; and influence on demand for money, 297-98; advantages of, 299-300
- Currency, created by the State, 330-32
- Davanzati, 10
- Debasement, and rises of prices, 7; Oresne on injustice of, 8; Molinæus on, 8; Hales on, 10; Males-troit on, 10; Thomas Mun on, 11; Adam Smith on, 34
- Demand for money, Menger on a person's, 54-55; Cassel on relative, 65; influence of prices on, Hildebrand, 92; Marshall, 147-48; rigidity of demand of consumers, 257-59; influence of settlements of debts on, 260-64; in periods of depression, 281-82; reduced by marketability of commodities, 290; influence of credit on, 297; bills of exchange and, 306; refers to quantities of value in exchange, 308-9; for settlements of debts directed to nominal quantities, 309; central banks and temporary, 320; proportion of demand for different denominations, 331
- Deposits, in central banks, 321-25; in relation to bank-notes, 323; and friction in the circulation, 324; in private banks, 333-35
- Diminishing returns, as applied to rate of profits on stocks of money, 238, 251
- Discharging of debts, demand for money for: von Böhm-Bawerk on, 141-42; Pigou on, 159; means of payment and, 211; and demand for money, 260-64; intensity of demand for, 262-63; and stocks of money at command, 263-64; deposit money and, 351-52
- Edgeworth, Keynes on, 173
- Elster, Karl, 103-6; on Bendixen, 103; comparison of exchange of two commodities and purchase of a commodity for money, 103-6
- Equation, Fisher's, 56; Cassel's, 65; Schumpeter's, 67; Kemmerer's, 72; Keynes', 154; Pigou's, 158; Keynes', 177-78
- Fisher, Prof. Irving, 56-63; his equation, 56; answers to critics, 57-58; mechanic character of his theory, 58-61; illustration, 62-63; theoretically correct price level and scientific quantity theory, 316-17
- Friction in the circulation, and value of money, 283-86; measures to protect against, 285-86; central banks and, 320-21; mitigated by the use of deposits, 324; private banks and, 355
- Functions of money, Menger on, 53; Wicksell on, 77; description of, 197-211
- Future possibilities, Aftalion on, 136-37; von Böhm-Bawerk on, 139; influence of, 265-74; and rate of interest on short-term credits, 265-66, 269-70; rate of interest and valuation of money, 267; short-term credits and long-term credits compared, 270-72; periods of business depression, 273; deposit money and, 352
- Gold used in industry, in relation to gold used as money, 242-44
- Hales, John, 10
- Hawtrey, Prof. R. G., 163-65; Schumpeter and, 163-65; "consumers' outlay" and "unspent margin," 164-65
- Helfferrich, Prof. Karl, von Mises on, 108, 110-11; theory of, 114-18; "Anrecht" theory rejected, 114; utility of money, 114-15; on theory of marginal utility, 115-17; variations of the value of money, 117-18
- Hildebrand, Prof. Richard, 89-92; money is not a commodity, 89-90; no object of need, 90-92;

- influence of prices on demand for money, 92
- Hoarding of money, Schumpeter on, 68; Kemmerer on, 71-72
- Hume, David, 29-31
- "Imaginary" value of money, law refuting, 19
- Income theories: von Wieser, 119-23; Verrijn Stuart, 123-30; Aftalion, 130-37; von Böhm-Bawerk, 137-44
- Index-numbers, 207-9; for money, 233
- Instrument of commerce, money as, Adam Smith on, 38; von Böhm-Bawerk on, 143
- Interest-bearing money, and the yield theory, 294-95; advantages of, 290; commercial bills of exchange, 304; deposit-money, 339-43
- Jevons, W. Stanley, 49-51; Keynes on, 173
- Kemmerer, Prof. Edwin Walter, 71-77; on hoarded money, 71-72; equation, 72; subjective valuations, 72; barter, 73-75; law of demand and supply, 75-77
- Keynes, J. M., 145-47, 154-58, 170-93; Marshall and, 145-47; equation, 154; contradiction to Marshall's views, 154-55; interdependence of underlying factors, 155-58; D. H. Robertson and, 168-69; functions of money, 170-72; on objective mean variation of general prices, 173-75; subjective value and value in exchange, 175-76; definitions, 176; equations, 177-78; discussion of equations, 178-83; paradox, 183-84; influence of savings, 185; value of new investment, 185-87; investment and savings compared, 188-91; bank-rate and price level, 192-93; savings in money, 193; and consumers' demand for money, 253 n., 257-58
- Knapp, Prof. G. F., Bendixen on, 93
- Knies, von Mises on, 108
- Law, John, 18-21
- "Legal tender," 203-4; bank-notes and, 310
- Liquid means, commodities as, 289
- Locke, John, 14-17; Law on, 19; Cantillon on, 23
- MacLeod, variations of prices, 47; supply of gold and rate of interest, 47-49
- Malestroit, 10
- Marginal utility, theory of, and Cantillon, 23; and value of money, von Mises, 107-13; Helfferich, 115-17; von Wieser, 119; Cannan, 162-63
- Marketability, use of money and, 199; of money and of commodities, 236; of commodities, 287-96; of commodities rendering use of money superfluous, 288; of commodities replacing money as medium of exchange, 289; of commodities reducing demand for money, 290; of securities and use of money, 291-96; advantages and disadvantages of the use of securities as substitutes for money, 292-93; interest-bearing money and the yield theory, 294-95; advantages of interest-bearing money, 296; of bills of exchange, 305
- Marshall, Prof. Alfred, 145-54; Keynes and, 145-47; earlier writers and, 145, 147; demand for "ready command," 147-48; proportion of holding of money and other investment, 149-53; determination of this proportion, 152-54; D. H. Robertson and, 168-69; stocks of commodities and stocks of money, 229 n., 230 n.
- Means of payment, money as: Ricardo on, 39; D. H. Robertson and, 166; supposed function of money as, 209-11
- Mechanic money theory, J. S. Mill and, 46; Fisher, 56-63; Cassel, 63-65; Schumpeter, 66-71; Kemmerer, 71-77; Wicksell, 77-83; Marshall's criticism, 146; Keynes on, 146; credit and, 298-99
- Medium of exchange, money as, 197-205; advantages connected with the use of, 197-99; historical development, 199-201; claim to money as, 202-4; token money as, 205
- Menger, C., 53-55, 236 n.
- Metallic reserve, Nederlandsche Bank and, 310
- Mill, John Stuart, 44-47; quantity of money needed, 44-45; demand for money, 45-46; and mechanic money theory, 46; and cash balance theory, 47

- Mises, Prof. Ludwig von, 107-113; theory of marginal utility, 107; classification of money, 108-9; subjective valuations, 110-11; Helfferich's criticism, 110-11; services as medium of exchange, 110-113
- Molinaeus, 8
- Moll, Prof. Bruno, 84-88; money as a claim to commodities, 84-85; ultimate gratification, 84-88; usefulness of gold as material for money, 87
- Money income, Schumpeter on, 67
- Monroe, Arthur E., on Xenophon, 6-7; on Aristotle, 7; on Roman authors, 7; on Montanari, 13
- Montanari, 13
- Montesquieu, 26-27
- Mun, Thomas, 11
- Oresne, 8
- Petty, Sir William, 11-13
- Pierson, N. G., 51-53
- Pigou, Prof. A. C., 158-61; equation, 158; Marshall and, 158; discharging of debts, 159; intensity of demand for money, 159-60; proportion of holding of money and other investment, 160-61
- Pollexfen, and standard of value, 11
- Price level, theoretically correct, 316-18
- Private banks, primary function of, 329, 333-57; deposits in, 333-35; creation of money by, 335-38; yield and value of deposit currency, 339-41; sphere of action of various forms of money, 342-44; temporary differences in value between deposit-money and bank-notes, 344-46; credit facilities, 346-49; and value of money, 349-50; various forms of money, 350-51; and quantity of money, 352-54; reserves, 355-57
- Problem of the value of money: statement of, 3-5; relative, 3, 6; Law and, 19; Montesquieu and, 27; Hume and, 29; Adam Smith and, 33; Bullion Report and, 41, 43-44; MacLeod and, 47; Jevons and, 50; Helfferich and, 114-18
- absolute, 3-4, 6; no formulation by Xenophon, 7; same as for other things, Aristotle, 7; Cantillon, 21; denied by Bendixen, 93-94; and by Elster, 103-4
- Quantity of money, wealth of a nation and, Hume, 30; Adam Smith on, 34-35; Fisher, 56; Cassel, 64; Schumpeter, 67; Kemmerer, 72; stability of the value of money and increase of, 278; in units of value and in money-units, 308-9
- Quantity of money needed by a country: determination of, Cantillon, 24-25; Condillac, 27-29; velocity of circulation and, Petty, 13; Adam Smith on, 33, 35-37; Ricardo on, 39; J. S. Mill on, 44-45; Jevons on, 49; Menger on, 55
- Quantity theory, Davanzati's, 10; Montanari's, 13; Montesquieu, 26
- Rate of interest, demand for money and, Law, 20; supply of gold and, MacLeod, 47-49; value of money and, Wicksell, 77-83; bank-rate and prices, Keynes, 192-93; short-term credits and, 265; and valuation of money, 267; on short-term credits and on long-term credits compared, 270-72; in periods of business depression, 273; stability of the value of money and, 279-80; bank-rate and gold policy, 311; bank-rate and settlements of debts, 312-14; on deposits, 339-41; modern banking system in periods of depression and, 353; high valuation of money and low, 353
- Reserves, of private banks, 355-57
- Ricardo, David, quantity needed by a country, 39; value of money, 40-41
- Rise of prices, demand for money and, 241-42
- Robertson, D. H., 165-69; cash balance theory and mechanic money theory, 165; means of payment, 166; volume of transactions and demand for money, 167; Marshall and Keynes, 168-69
- Savings, Keynes on, 177-85
- Schumpeter, Prof. Joseph, 66-71; objective factors determining rate of circulation, 66; equation, 67; quantity of money, 68; hoarding,

- 68; determination of income, 69-70; interdependence of income and proceeds, 70-71
- Securities, as substitutes for money, 291-92
- Short-term credits, rate of interest on, 265; for monetary or other purposes, 268; rate of interest on long-term credits and on, 270-72
- Sphere of action, of various forms of money, 342-44
- Stability of the value of money, 275-82; future possibilities and, 275; constant price level and, 276-77; causes on the side of goods disturbing, 278; rate of interest and, 279-80; disadvantages of unstable money, 280-81; stability of the value of commodities, 281-82; central banks and, 321; private banks and, 354-55
- Standard of value, Pollexfen and, 11; money as, 205-9; inadequacy of, 207; on stability of, 207-9; no influence on value of money by its function as, 209
- Stock of money: the tradesman's, 231-47; interdependence of utility and value of, 231-33; profits on, 234-47; estimations of profits, 234-36; determination of profits and the law of diminishing returns, 237-40; quantity by weight of gold irrelevant, 237; relation between volume of trade and, 241-42; gold used in industry, 242-44; increase of quantity of gold, 245-46; influence of expansion of trade on, 246-47; consumers', 248-59; advantages of, 248-49; interaction between yield and value of, 250; diminishing returns of consumers', 251; in relation to weekly wages, 252-59; illustration of rate of circulation, 255-57; rigidity of consumers', 257-59; credit and consumers', 297-98; replaced by bills of exchange, 306; continually modifying proportion between volume of trade and, 354
- Stores of commodities, volume and value of dealers', 212-23; advantages of, 212-14; determination of profits derived from, 215-17; determination of volume and value, 217-23; value in relation to profits, 219-23; utility of stores and utility of consumption, 221; expectations of rises of prices and volume of, 222-23; consumers', 224-30; utility of consumers', 224-25; value in relation to utility of consumption, 225-29
- Tugan-Baranovski, Keynes on, 191
- Unit of value, money unit and, Bendixen on, 93-95
- Utility of money, and inconvenience of barter, Law, 21; Adam Smith on, 32; Wicksell on, 78; Helfferich on, 114-15; Verrijn Stuart on, 130; von Böhm-Bawerk on, 143-44; comparison of Marshall and Keynes on, 145-46; Cannan on, 163; interdependence of value and, 231; consumer and, 248-49; produced by marketability and other properties, 288
- Valor impositus*, 9; Bendixen and, 93
- Vaughan, Rice, and abundance of gold and silver, 11
- Velocity of circulation, Petty on, 13; Condillac on, 28; Ricardo on, 40-41; Bullion Report on, 42; Jevons on efficiency of the currency, 50-51; Fisher on, 56; Cassel on, 63; Schumpeter on, 67; Kemmerer, 72-75; Wicksell, 80; means of payment and, 210; in relation to diminishing returns of money, 244; credit and, 298-99
- Verrijn Stuart, Prof. G. M., 123-30; interdependence of money income and price level, 123-26; valuations in connection with expectations about the prices in the future, 126-29; utility of money, 130
- Volume of trade, and value of money, Locke on, 16; Bullion Report, 41, 44; Jevons, 50; Fisher, 56; Robertson, 167; stock of money and, 241-42; stability of money and changes in, 278
- Wicksell, Prof. Knut, 77-83; functions of money, 77; influence of rate of interest on value, 77, 80-83; utility of money, 78; relation of cash balance and prices, 79; velocity of circulation, 80
- Wieser, Prof. Friedrich von, 119-23; interdependence of money income

- and price level, 120-21; amount of money income *historically* explained, 121-23; Aftalion on, 130-31
- Xenophon, revenues of Athens, 6-7
- Yield of money, Locke on, 15; and value, 237-40; interaction between value and, 241, 250; and rate of interest on short-term credits, 269-70; and stability of value, 276; premium for the risk connected with holdings of money as part of, 279; and friction in the circulation, 284-86; and interest on bonds, 292; in relation to bank-rate, 314-16; yield and value of deposit-money, 339-41; visible and not directly visible, 353

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