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THE INFLUENCE OF THE RATE OF INTEREST ON PRICES.[1]

The thesis which I humbly submit to criticism is this. If, other things remaining the same, the leading banks of the world were to lower their rate of interest, say 1 per cent. below its ordinary level, and keep it so for some years, then the prices of all commodities would rise and rise and rise without any limit whatever; on the contrary, if the leading banks were to *raise* their rate of interest, say 1 per cent. above its normal level, and keep it so for some years, then all prices would *fall* and fall and fall without any limit except Zero.

Now this proposition cannot be proved directly by experience, because the fact required in its hypothesis never happens.

The supposition was that the banks were to lower or raise their interest, *other things remaining the same*, but that, of course, the banks never do; why, indeed, should they? Other things remaining the same, the bank-rate is sure to remain the same too, or if, by any chance, *e.g.*, by mistake, it were altered, it would very soon come round to its proper level. My thesis is, therefore, only an abstract statement, and somebody, perhaps, will ask: what is the use of it then? But I venture to assert that it may be of very great use all the same. Everybody knows the statement of Newton that, if the attraction of the sun were suddenly to cease, then the planets would leave their orbits in the tangential direction; this, too, of course, is only an abstract proposition, because the solar attraction never ceases, but it is most useful nevertheless; indeed, it is the very corner-stone of celestial mechanics; and in the same way I believe that the thesis here propounded, if proved to be true, will turn out to be the corner-stone of the mechanics of prices, or rather one of its corner-stones, the influence of the supply of precious metals

[1] A paper read before the Economic Section of the British Association, 1906.

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and of the demand for commodities from the gold-producing countries being the other.

Before going further, however, we must answer one more question. Our supposition might be not only unreal as to facts, but even logically impossible; and then, of course, its use would be *nil.* According to the general opinion among economists, the interest on money is regulated in the long run by the profit on capital, which in its turn is determined by the productivity and relative abundance of real capital, or, in the terms of modern political economy, by its *marginal productivity*. This remaining the same, as, indeed, by our supposition it is meant to do, would it be at all possible for the banks to keep the rate of interest either higher or lower than its normal level, prescribed by the simultaneous state of the average profit on capital?

This question deserves very careful consideration, and, in fact, its proper analysis will take us a long way towards solving the whole problem.

Interest on money and profit on capital are not the same thing, nor are they *immediately* connected with each other; if they were, they could not differ at all, or could only differ a certain amount at every time. There is no doubt *some* connecting link between them, but the proper nature and extent of this connection is not so very easy to define.

If we look only at credit transactions between individuals, without any interference of banks, the connection between interest and profit indeed seems obvious. If by investing your capital in some industrial enterprise you can get, after due allowance for risk, a profit of, say, 10 per cent., then, of course, you will not lend it at a much cheaper rate; and if the borrower has no recourse but to individuals in the same situation as you, he will not be able to get the money much cheaper than that.

But it is a very different thing with the modern forms of credit, which almost always imply the mediation of some bank or professional money-lender. The banks in their lending business are not only not limited by their own capital; they are not, at least not immediately, limited by any capital whatever; by concentrating in their hands almost all payments, they themselves create the money required, or, what is the same thing, they accelerate *ad libitum* the rapidity of the circulation of money. The sum borrowed to-day in order to buy commodities is placed by the seller of the goods on his account at the same bank or some other bank, and can be lent the very next day to some other person with the same effect. As the German author.

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Emil Struck, justly says in his well-known sketch of the English money market: in our days demand and supply of money have become about the same thing, the demand to a large extent creating its own supply.

In a *pure* system of credit, where all payments were made by transference in the bank-books, the banks would be able to grant at any moment any amount of loans at any, however diminutive, rate of interest.

But then, what becomes of the connecting link between interest and profit? In my opinion there is no such link, except precisely *the effect on prices*, which would be caused by their difference.

When interest is low in proportion to the existing rate of profit, and if, as I take it, *the prices thereby rise*, then, of course, trade will require more sovereigns and bank-notes, and therefore the sums lent will *not* all come back to the bank, but part of them will remain in the boxes and purses of the public; in consequence, the bank reserves will melt away while the amount of their liabilities very likely has increased, which will force them to raise their rate of interest.

The reverse of all this, of course, will take place when the rate of interest has accidentally become too high in proportion to the average profit on capital. So far, you will easily remark, my proposition is quite in accordance with well-known facts of the money market. If it be not true, if, on the contrary, as Thomas Tooke asserted, and even Ricardo in his earlier writings seems to have believed, a low rate of interest, by cheapening, as they put it, one of the elements of production, would lower prices, and a high rate of interest raise them—a most specious argument, resting, however, on the unwarrantable assumption that the remuneration of the other factors of production could, under such circumstances, remain the same—then the policy of banks must be the very reverse of what it really is; they would lower their rates when prices were getting high and reserves becoming low, they would raise them in the opposite case.

A more direct proof of my thesis is required, however, and might be given in some such way as this. If as a merchant I have sold my goods to the amount of £100 against a bill or promissory note of three months, and I get it discounted at once by a bank or a bill broker, the rate of discount being 4 per cent. per annum, then in fact I have received a cash price for my goods amounting to £99. If, however, the bill is taken by the

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bank at 3 per cent., then the cash price of my goods have *ipso facto* risen, if only a quarter of 1 per cent.; very likely not even that, because competition probably will force me to cede part of my extra profit to the buyer of the goods. In other cases, however, when long-term credit comes into play, the immediate rise of prices might be very much greater than that. If the rate of discount remains low, the interest on long loans is sure to go down too; building companies and railway companies will be able to raise money, say at 4 per cent. instead of 5 per cent., and therefore, other things being the same, they can offer, and by competition will be more or less compelled to offer for wages and materials, anything up to 25 per cent. *more* than before, 4 per cent. on £125 being the same as 5 per cent. on £100.

But, further—and this is the essential point to which I would call your special attention—the upward movement of prices, whether great or small in the first instance, *can never cease* so long as the rate of interest is kept lower than its normal rate, *i.e.*, the rate consistent with the then existing marginal productivity of real capital. When all commodities have risen in price, a *new level of prices* has formed itself which in its turn will serve as basis for all calculations for the future, and all contracts. Therefore, if the bank-rate now goes up to its normal height, the level of prices will not go down; it will simply remain where it is, there being no forces in action which could press it down; and, consequently, if the bank-rate *remains lower* than its normal height, a new impetus towards forcing up the prices will follow, and so on. The opposite of all this will take place when the rate of interest has become too high in proportion to average profit, and so in both cases a difference between the two rates remaining, the movement of prices can never cease, just as the electric current never ceases as long as the difference of tension between the poles remains.

The proposition that a low rate of interest will raise prices, a high rate of interest lower prices, is in some respects anything but new; it has been stated more than once, but a formidable objection was always triumphantly brought against it in the shape of statistical facts; indeed, if you consider the figures given, *e.g.*, by Sauerbeck in his well-known tables in the *Journal of the Statistical Society*, you will generally find that high prices do not correspond with a low rate of interest, and *vice versa*; it rather comes the opposite way, interest and prices very often rising and falling together. But this objection quite loses its importance; nay, more, it turns into a positive support of our

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theory, as soon as we fix our eyes on the relativity of the conception of interest on money, its necessary connection with profit on capital. The rate of interest is never high or low in itself, but only in relation to the profit which people can make with the money in their hands, and this, of course, varies. In good times, when trade is brisk, the rate of profit is high, and, what is of great consequence, is generally expected to remain high; in periods of depression it is low, and expected to remain low. The rate of interest on money follows, no doubt, the same course, but not at once, not of itself; it is, as it were, dragged after the rate of profit by the movement of prices and the consequent changes in the state of bank reserve, caused by the difference between the two rates. In the meantime this difference acts on prices in just the same way as would be the case if, according to our original supposition, profit on capital were to remain constant, and interest on money were to rise or fall spontaneously. In one word, the interest on money is, in reality, very often low when it seems to be high, and high when it seems to be low. This I believe to be the proper answer to the objection stated above, as far as the influence of credit on prices is regarded; occasionally, of course, as in times of wild speculation or panics, the problem is complicated very much by the action of other factors, which need not here be taken into consideration.

Granted, then, our theory to be true in the main or in the abstract, what will be its practical consequences? to what extent would the leading money institutions be able to regulate prices?

A single bank, of course, has no such power whatever; indeed, it cannot put its rates, whether much higher or much lower than prescribed by the state of the market; if it did, it would in the former case lose all profitable business; in the latter case its speedy insolvency would be the inevitable consequence.

Not even all the banks of a single country united could do it in the long run; a too high or too low rate would influence its balance of trade, and thereby cause an influx or reflux of gold in the well-known way, so as to force the banks to apply their rates to the state of the universal money market.

But supposing, as, indeed, we have done, that all the leading banks of the commercial world were to follow the same course, then gold could have no reason to go to one place more than to another, and so the action exercised on prices would have its sway without any hindrance from the international movement of money. Still, even then it would, under the present circum-

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stances, have its obvious limits. As I remarked at the outset, the influence of credit or the rate of interest is only one of the factors acting on prices; the other is the volume of metallic money itself, especially, in our times, the supply of gold, and so long as the gold itself remains the standard of value, this factor evidently will take the lead in the long run. Were the production of gold materially to diminish while the demand for money be unaltered, the banks no doubt, by lowering their rate of interest, might for a while profitably react against the otherwise inevitable pressure on prices, but only for a while, because, even if the rather unnecessary stiffness of present bank legislations could be slackened, the ever-growing demand for gold for industrial purposes would gradually reduce the bank stores, and could only be checked by raising the price of gold—that is, by lowering the average money prices.

The other extreme, which at present seems much more likely to occur: a plethora of gold supply, and the rise of prices thereby caused, could not be effectually met in any way, so long as free coinage of gold exists.[1]

On the other hand, if this most essential step on the way to a rational monetary system should be taken, if the free coining of gold, like that of silver, should cease, and eventually the bank-note itself, or rather the unity in which the accounts of banks are kept, should become the standard of value, then, and not till then, the problem of keeping the value of money steady, the

[1] It is not easy to describe or imagine the exact manner in which an excess or deficiency in the ordinary gold supply affects prices, although its ultimate effect on them cannot well be doubted. As in our days the new gold generally finds its way as soon as possible to the banks, the common impression seems to be that it by so much increases the loanable funds of the banks, and therefore in the first instance causes the rate of interest to go down. This, no doubt, would be true if the new gold in its totality were deposited by its owners as *capital* for lending purposes, and in so far as this may be the case it indeed affords an illustration, and the only practical one, of the lowering of bank rates effecting a rise of prices. But mostly, I suppose, the gold comes to us not as lending capital, but as payment for the imports of the gold-producing countries, and if so its acting on the prices will be much more immediate and its effect on the rate of interest very slight. It is even possible that the rise of prices, caused by the increased demand for commodities from the gold countries, will *forerun* the arriving of the gold, the necessary medium of exchange being in the meantime supplied by an extension of the credit, so that the rate of interest perhaps will rise from the beginning. In any case the *ultimate* effect of an increased gold supply will be a *rise*, not a fall, in the rate of interest (and *vice versa* with a lacking supply of gold), because the large mining enterprises and the buying up of gold by the non-producing countries have actually destroyed large amounts of real capital and thereby given the rate of profit a tendency to rise. This all may be the explanation of some rather perplexing features in economic history, a rise of prices even when apparently caused by a surplus of gold supply very seldom being accompanied by a low rate of interest, but generally by a high one.

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average level of money prices at a constant height, which evidently is to be regarded as the fundamental problem of monetary science, would be solvable theoretically and practically to any extent. And the means of solving it need not be sought in some more or less fantastic scheme like that of a central issuing bank for all the world, as it is sometimes proposed, but simply in a proper manipulation of general bank-rates, lowering them when prices are getting low, and raising them when prices are getting high.

Nor would this system be at all artificial, because the point about which the rate of interest would then oscillate, and to which it would constantly gravitate, would be precisely what I have called above its normal level, that one prescribed by the simultaneous state of the marginal productivity of real capital, the alterations of which we, of course, cannot control, but only have to comply with.

P.S.—When this paper was read at the British Association meeting it was objected by Mr. Palgrave that the banks could not possibly be charged with the regulation of prices, their liberty of action—if I understood him right—being, in his view, restricted by the necessity of protecting their own reserves as well from getting too low in consequence of an unfavourable balance of trade, as from running to an unprofitable height by an influx of gold. This, no doubt, is true, but it must not be forgotten that the international rate policy of banks has, as it were, *two degrees of freedom*, in so far as the international movement of gold can be checked or modified, not only by raising the rate of discount in the country *from* which the metal flows, but also by lowering it in the country, or countries, *to* which gold is flowing. In other words, the action of the banks against each other, which has for its object the proper distribution of money, or the levelling of the *niveau* of prices between different countries, might logically be concomitant with a *common* action for the purpose of keeping the universal value of money and level of prices at a constant height, which, however, under present circumstances only can be done within the limits prescribed by the general supply of gold.

On the other hand, it was remarked by Professor Edgeworth that if the free coinage of gold be suppressed, the Governments themselves have in their hand the regulating of general prices. This, too, is true, at any rate so long as the present large production of gold persists; and even if it should cease,and gold become scarce, the Governments, no doubt, might supplant the lack in currency by a judicious emission of paper-money. But a single Government has in this respect only the choice between two alternatives: it may try to keep the value of its money steady *towards the commodities*, but then it necessarily sacrifices the parity of its ex-

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changes; or else it may manage to keep its exchanges strictly at par, but then it has of itself no power over the level of prices. Some international agreement, either regarding the amount of gold to be coined by each country or else involving a common rate-policy of the banks as described above, must needs come into play, shall both those purposes—the steadiness of the average value of money and the parity of exchanges—be fulfilled together; and it seems to me, although I may be mistaken, that for several reasons such agreements could be far more easily and effectually made by the banks, with the support, that is, of the Governments, than by the Governments themselves exclusive of the banks.

For a more detailed analysis of the practical side of the question and of the whole argument, I must refer to my book, *Geldzins und Güterpreise* (Jena: Gustav Fischer, 1898; being the further development of an article in Conrad's *Jahrbücher*, Bd. 13, 1897), as well as to my printed *University Lectures* (Bd. I:2, 1906, in Swedish).

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