# On the Short-Run Non-Neutrality of Money in the Quantity Theory *

> I find, looking back, that it was Prof. Irving Fisher who was the great-grandparent who first influenced me strongly towards regarding money as a "real" factor.
>
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Recent years have seen a renewed interest in the traditional pre-Keynesian quantity theory. My concern in this paper is with a contention about the nature of this theory which seems to be common both to its critics and to at least one of its modern-day adherents. I am referring to the contention that — in the formal development of this theory in the past — a change in the quantity of money expends itself solely in influencing the price level, but not the volume of output even in the short run.

Thus in his well-known criticism of the state of monetary theory before Keynes, Lawrence Ritter writes that the

> prevailing monetary theory in the form of the Quantity theory of money, had been concerned almost exclusively with the determination of the general level of prices, to the neglect of the influence of money on real output and employment. As expressed by Jean Bodin in

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1 "Alternative Theories of the Rate of Interest", *Economic Journal*, XLVII (June 1937), p. 242, footnote; cited by JOSEPH E. REEVE, *Monetary Reform Movements* (Washington D.C., 1943), p. 162.

This book has its origin in a Ph. D. thesis submitted to the University of Chicago in 1939 and contains a wealth of information about the monetary discussion of the 1930s.

1569, through John Locke, David Hume, David Ricardo, John Stuart Mill, and Irving Fisher, the Quantity theory had always stressed that the supply of money determined primarily the absolute price level. The velocity of money was held to be an institutional datum and aggregate real output assumed at the full employment level by virtue of Say's Law. In terms of the equation of exchange, $MV=PT$, $V$ and $T$ were assumed to be given so that changes in the money supply would result in proportionate changes in prices.

The policy implications of the pre-Keynesian Quantity theory were simple and paralyzing. Increases in the supply of money, even in periods of substantial unemployment, could never achieve any permanent benefit. They could only be harmful, by raising prices proportionately — a view that is deeply imbedded in popular folklore to this day. It is this framework, rather than the Keynesian, which in a fundamental sense views money as unimportant. Here money is seen as "neutral", a veil behind which "real" forces work themselves out just about as they would in the absence of money. In the Keynesian approach, on the other hand, money also plays a role in the determination of real output. For the first time money becomes more than merely a veil, and a monetary economy is seen as behaving very differently from a barter economy.[2]

Unexpected support for some aspects of this interpretation has recently been forthcoming from Milton Friedman. In particular, Friedman describes the Marshallian assumption of value theory that "it takes time for output to adjust but no time for prices to do so", and then goes on to characterize the quantity theory in the following terms:

> This Marshallian assumption about the price of a particular product became widely accepted and tended to be carried over unthinkingly to the price level in analyzing the dynamic adjustment to a change in the demand or supply of money. As we noted above, the Cambridge cash-balances equation lends itself to a demand-supply interpretation along Marshallian lines. So interpreted, a change in the nominal quantity of money (a once-for-all shift in the supply schedule) will require a change in one or more of the variables on the right-hand side of equation [6] — $k$, or $P$, or $y$ — in order to reconcile demand and supply. In the final full equilibrium, the adjustment will, in general, be entirely in $P$, since the change in the nominal quantity of money need not alter any of the "real" factors on which $k$ and $y$ ultimately depend. As in the Marshallian case, the final position is not affected by relative speeds of adjustment.
>
> There is nothing in the logic of the quantity theory that specifies the dynamic path of adjustment, nothing that requires the whole adjustment to take place through $P$ rather than through $k$ or $y$. It was widely recognized that the adjustment during what Fisher, for example, called "transition periods" would in practice be partly in $k$ and in $y$ as well as in $P$. *Yet this recognition was not incorporated in formal theoretical analysis.* The formal analysis simply took over Marshall's assumption.[3]

In order to avoid any possible misunderstanding, I wish to emphasize that Friedman in his own application of his "modern quantity theory" assigns a central role to the short-run effects of changes in the quantity of money on $k$ and $y$; the question under discussion here, however, is the extent to which the traditional quantity theorists themselves did so — both in their informal discussions and (especially) in their formal theoretical analysis.

It is the purpose of this paper to examine the writings of Irving Fisher, the Chicago school, the Cambridge economists, and other quantity theorists in order to determine the validity of these interpretations.

## 1. Irving Fisher

Even a cursory examination of Fisher's presentation of the quantity theory shows how misleading the preceding descriptions are. Thus it is clear from Fisher's *Purchasing Power of Money*[4] that the proportionate relationship between the quantity of money and the price level is one that prevails in the long run; in the short run, however, the situation is far more complicated. In Fisher's own words — at the beginning of his chapter devoted to "Disturbances of Equation and of Purchasing Power during Transition Periods":

> If the quantity of money were suddenly doubled, the effect of the change would not be the same at first as later. The ultimate effect

2 Lawrence S. Ritter, "The Role of Money in Keynesian Theory", in *Banking and Monetary Studies*, ed. Deane Carson (Homewood, Ill., 1963), pp. 139-40.

3 Milton Friedman, "A Theoretical Framework for Monetary Analysis", *Journal of Political Economy*, LXXVIII (March-April 1970), 208, italics added.

4 Irving Fisher, *The Purchasing Power of Money* (New York, 1922).

is, as we have seen, to double prices; but before this happens, the prices oscillate up and down. In this chapter we shall consider the *temporary effects during the period of transition* separately from the *permanent or ultimate effects* which were considered in the last chapter. These permanent or ultimate effects follow after a new equilibrium is established, — if, indeed, such a condition as equilibrium may be said ever to be established. What we are concerned with in this chapter is the temporary effects, *i.e.* those in the transition period.[5]

The sequence of effects visualized by Fisher was as follows:

(1) Prices rise.

(2) Velocities of circulation ($V$ and $V'$) increase; the rate of interest rises, but not sufficiently.

(3) Profits increase, loans expand, and the $Q$'s [i.e., the real volume of trade] increase.

(4) Deposit currency ($M'$) expands relatively to money ($M$).

(5) Prices continue to rise; that is, phenomenon No. 1 is repeated. Then No. 2 is repeated, and so on.

> It will be noticed that these changes now involve all the magnitudes in the equation of exchange. They are temporary changes, pertaining only to the transition period. They are like temporary increases in power and readjustments in an automobile climbing a hill.[6]

The reason for the increase in the velocity of circulation is the anticipation of price increases.[7] These anticipations also cause the money rate of interest to rise but — because of imperfect foresight [8] — "not sufficiently" to offset them: that is, the real rate of interest declines. And this indeed is what causes the boom. In this way Fisher integrated his analysis of the transition period into his formal theoretical analysis of the distinction between the real and money rates of interest — a distinction that was a basic component of Fisher's theoretical framework even before he turned to monetary problems.[9]

5 *Ibid.*, pp. 55-56. Italics in orginal.
6 *Ibid.*, pp. 63-64.
7 *Ibid.*, p. 63.
8 Cf. Irving Fisher, *Theory of Interest* (New York, 1930), pp. 43-44.
9 Irving Fisher, *Appreciation and Interest* (1896; reprinted New York: Kelley, 1961).



Ultimately, Fisher went on to explain, the money rate of interest will adjust itself completely to the rate of price increase; and when this happens

> those who have counted on renewing their loans at the former rates and for the former amounts are unable to do so. It follows that some of them are destined to fail. The failure (or prospect of failure) of firms that have borrowed heavily from banks induces fear on the part of many depositors that the banks will not be able to realize on these loans. Hence the banks themselves fall under suspicion, and for this reason depositors demand cash. Then occur "runs on the banks", which deplete the bank reserves at the very moment they are most needed. Being short of reserves, the banks have to curtail their loans. It is then that the rate of interest rises to a panic figure. Those enterprisers who are caught *must* have currency to liquidate their obligations, and to get it are willing to pay high interest. Some of them are destined to become bankrupt, and, with their failure, the demand for loans is correspondingly reduced. This culmination of an upward price movement is what is called a crisis, — a condition characterized by bankruptcies, and the bankruptcies being due to a lack of cash when it is most needed.[10]

As a result of this crisis, the foregoing process reverses itself. In particular, the sequence of events now is:

(1) Prices fall.

(2) Velocities of circulation ($V$ and $V'$) fall; the rate of interest falls, but not sufficiently.

(3) Profits decrease; loans and the $Q$'s decrease.

(4) Deposit currency ($M'$) contracts relatively to money ($M$).

Prices continue to fall; that is, phenomenon No. 1 is repeated. Then No. 2 is repeated, and so on.[11]

Fisher concludes this discussion with the following observation:

> We have considered the rise, culmination, fall, and recovery of prices. These changes are abnormal oscillations, due to some initial disturbance. The upward and downward movements taken together constitute a complete credit cycle, which resembles the forward and backward movements of a pendulum. In most cases the time occupied by the swing of the commercial pendulum to

10 Fisher, *The Purchasing Power of Money, op. cit.*, pp. 65-66. Italics in original.
11 *Ibid.*, p. 69.

> and fro is about ten years. While the pendulum is continually seeking a stable position, practically there is almost always some occurrence to prevent perfect equilibrium. Oscillations are set up which, though tending to be self-corrective, are continually perpetuated by fresh disturbances. Any cause which disturbs equilibrium will suffice to set up oscillations. One of the most common of such causes is an increase in the quantity of money. Another is a shock to business confidence (affecting enterprise, loans, and deposits). A third is short crops, affecting the *Q*'s. A fourth is invention.[12]

Thus for Fisher changes in the quantity of money were not only not "neutral" in their effects, but were actually a major cause of cycles that — though referred to as "transition periods" — were assumed to extend over a period of ten years.

As just indicated, the way in which monetary changes generate cycles is through their effects on the rate of change of prices, and hence on the real rate of interest. It is this effect that Fisher emphasized in his earlier writings on cycles.[13] In his later writings, however, he shifted the emphasis from the rate of change of prices to their absolute level — and emphasized that a low level means a high burden of debt, and hence a greater danger of business bankruptcies and collapses.[14]

If changes in the price level were a major cause of cycles, then the way to combat these cycles was to keep the price level constant. This was the policy proposal which Fisher expounded in a long series of publications.[15] In his words:

> As to the problem of stable money in the United States, while a rough stabilization could be obtained by sole reliance on adjusting the price of gold according to the compensated dollar plan, I do not think a really accurate stabilization is feasible without also a direct control of the total volume of checking deposits or what may be called checkbook money...

12 *Ibid.*, p. 70.

13 "The Business Cycle Largely a 'Dance of the Dollar'", *Journal of the American Statistical Association*, XVIII (December 1923), 1024-28; "Our Unstable Dollar and the So-Called Business Cycle", *Journal of the American Statistical Association*, XX (June 1925), 179-202.

14 *Booms and Depressions* (London, 1933), pp. 17-18 and 25; "The Debt-Deflation Theory of Great Depressions", *Econometrica*, I (1933), 337-57.

15 Cf., e.g., *Stabilizing the Dollar* (New York, 1920), *The Money Illusion* (New York, 1928), and *Stable Money* (New York, 1934), especially pp. 374-98.



> I would depend for a stable dollar mainly on open market operations and occasional adjustments of rediscount rates under the supervision of a special Monetary Authority or Commission...
>
> As soon as politically feasible, I would go even further... I would have the Government practically take away from the banks the entire function of creating or destroying circulating medium but leaving to the banks the strictly banking functions such as lending money.
>
> This project, now favored by many economists, particularly [Henry C.] Simons and others at the University of Chicago and by some bankers, such as George LeBlanc, is the subject of a book I am writing called "The 100% System of Money and Banking".[16]

Thus the policy advocated by Fisher was one of stabilizing the price level, primarily by variations in the quantity of money. Fascinatingly enough, he also proposed to make use of "velocity control" for this purpose. In Fisher's words:

> We turn now from the volume of money (*M*) to its velocity (*V*). When velocity misbehaves, it misbehaves in the same direction with volume. We have already seen, for instance, that, in the depression of 1929-32, while the volume of deposit currency in member banks was falling 21 per cent, the velocity of it was being reduced by 61 per cent. In the case of a rising price level, the remedy for the velocity must perhaps be looked for in the volume of money, by taking the surplus *M* out of the overflooded circulation; for people cannot spend what they do not have. The price level would come down, and *V* would come down. On the other hand, people *can* hoard what they *do* have; so that, in the case of a depression and a falling price level, a mere new supply of money, to replace what has been liquidated or hoarded, might fail to raise the price level by failing to get into circulation. If, for instance, there is fear of going off the gold standard, the very effort to expand credit may, by increasing that fear, defeat itself, the new money being more than offset by withdrawals for hoarding. For a prompt boost of the price level, therefore, a mere increase in *M* might prove insufficient, unless supplemented by some influence exercised directly on the moods of people to accelerate *V* — that is to convert the public from hoarding.[17]

16 *Ibid.*, pp. 396-97.
The book mentioned at the end of this passage was subsequently published under the title *100% Money* (New York, 1935).

17 *Booms and Depressions, op. cit.*, p. 140; italics in original.

The specific means by which Fisher proposed to increase velocity was by use of Silvio Gesell's plan of issuing "stamped money". "The plan would operate as a stamp tax on hoarding — increasing the velocity as well as the quantity of money".[18] "The plan offers the most efficient method of controlling hoarding and probably the speediest way out of a depression".[19]

I might finally note that over his lifetime Irving Fisher devoted far more attention to the problem of the "transition period" — and to his proposal for a "stable dollar" that was designed to smooth out the fluctuations of this period — than to his famous long-run proposition about the proportionate relationship between the quantity of money and the price level.[20]

## 2. The Chicago School

So much for Fisher. Let me turn now to the Chicago quantity-theory school of the 1930s and early 1940s, of whom Henry C. Simons was the outstanding representative. As we saw above, this school — and Simons in particular — provided the inspiration for some of Fisher's proposals, particularly that for 100% money.[21]

The Chicago school had even less concern than did Fisher with the long-run statement of the Quantity Theory. Indeed, I have not been able to find even one instance of such a statement in the writings of Simons. Instead, the overwhelming concern of this school was with the short-run effects of monetary changes, and with the proper monetary policy needed to counteract them. More specifically, the point of departure for the Chicago school[22] was

18 *Ibid.*, p. 227.

19 *Ibid.*, p. 142.

Cf. also IRVING FISHER, *Stamp Scrip* (New York, 1933) and *100% Money, op. cit.*, pp. 90-91.

20 This is evident from the references to Fisher's writings in the preceding footnotes. Cf. also the chapter on Fisher in Reeve, *op. cit.* (Chapter 11).

21 The following four paragraphs are taken from my "The Chicago Tradition, the Quantity Theory, and Friedman", *Journal of Money, Credit and Banking*, I (February 1969), 50-51. The Appendix to this article cites the text of some of the references given in the next few footnotes.

22 The following is primarily a summary of Simons' views, which were largely accepted by Mints. Knight's analysis is the same, though — quite characteristically — he seems to have had less faith than Simons and Mints in the policy proposals. Cf. also J.R. DAVIS, "Chicago Economists, Deficit Budgets, and the Early 1930s", *American Economic Review*, LVIII (June 1968), 476-82.



that the velocity of circulation, $V$, is not constant; on the contrary, a basic feature of economic life is the "danger of sharp changes on the velocity side"; or in other words, the danger "of extreme alternations of hoarding and dishoarding".[23] These "sharp changes" in turn are due to anticipations of changing price levels, as well as to the changing state of business confidence as determined by earnings.[24] Thus, if individuals expect prices to rise and earnings to be good, they will dishoard — that is, increase the velocity of circulation. But the crucial point here is that these expectations will be self-justifying: for the very act of dishoarding will cause prices to rise even further, thus leading to further dishoarding, and so on. In this way a "cumulative process" of expansion is set into operation which "feeds upon itself" and which has no "natural" limit.[25] Conversely, an indefinite "cumulative process" of hoarding, price decline and depression, and further hoarding is set into operation by the expectation that the price level will fall and/or that earnings will be poor. Thus the economic system is essentially unstable.[26]

Such a cumulative process might possibly take place, albeit in a much less severe form, even if the quantity of money in the economy were to remain constant.[27] In the actual world, however, the process is highly exacerbated by the "perverse" behavior of the banking system, which expands credit in booms and contracts it in depressions. As a result the quantity of money ($M$) and near-moneys (and hence $V$) increases in booms, and decreases in depressions.

In accordance with the foregoing situation the government has an obligation to undertake a contracyclical policy. The guiding

23 HENRY C. SIMONS, "Rules versus Authorities in Monetary Policy", *Journal of Political Economy*, LXIV (February 1936), as reprinted in *Economic Policy for a Free Society* (Chicago, 1948), p. 164. That by "hoarding and dishoarding" Simons means changes in velocity is clear from p. 165. See also note (24) below.

24 See HENRY C. SIMONS, "Banking and Currency Reform" (unpublished memorandum, 1933)

25 FRANK H. KNIGHT, "The Business Cycle, Interest, and Money: A Methodological Approach", *Review of Economic Statistics*, XXIII (May 1941), as reprinted in *On the History and Method of Economics* (Chicago, 1956), pp. 210-11 and 223-24.

26 See HENRY C. SIMONS, *Personal Income Taxation* (Chicago, 1938), p. 222; *idem*, "Hansen on Fiscal Policy", *Journal of Political Economy*, I (April 1942), as reprinted in *Economic Policy for a Free Society* (Chicago, 1948), p. 188; and KNIGHT, *op. cit.*, pp. 211 and 224.

27 See the quotation from Simons (p. 164) referred to in note (23) above. See also *ibid.*, p. 331, footnote 16, and LLOYD W. MINTS, *Monetary Policy for a Competitive Society* (New York, 1950), pp. 120-22.

principle of this policy is to change $M$ so as to offset changes in $V$, and thus generate the full-employment level of aggregate demand $MV$. If prices are downwardly flexible, the operational rule which will assure the proper variation in $M$ is that of increasing $M$ when $P$ falls, and decreasing it when $P$ rises. In any event, it is "inconceivable" that a sufficiently vigorous policy of (say) expanding $M$ in a period of depression would not ultimately affect aggregate spending in the required manner.

The necessary variations in $M$ can be generated either by open-market operations or by budgetary deficits. The latter method is more efficient, and in some cases might even be necessary. Budgetary deficits, in turn, can be generated by varying either government expenditure or tax receipts. From the viewpoint of contracyclical policy, this makes no difference — for either method changes $M$; but from the viewpoint of the general philosophy of the proper role of government in economic life, the variation of tax receipts is definitely preferable. Hence, a tax system which depends heavily on the income tax is desirable not only from the viewpoint of distributive justice, but also from the viewpoint of automatically providing proper cyclical variations in tax receipts.

Since the University of Chicago is so identified today with the quantity theory, it might be well to remember that this was not always so. Thus at the turn of the century it was the home of one of the outstanding opponents of the quantity theory, J. Laurence Laughlin. From his writings, however, one can learn that the advocates of the quantity theory did not treat money as a "veil". In Laughlin's words:

> The theory once seriously advocated, and even now generally held by great masses of men, that an increase of currency will quicken and revivify industry is necessarily bound up with the truth of the quantity theory. If the latter is unsound, the former has no standing. The essence of the former is to be found in the expectation that prices would rise, as a matter of course, if the quantity of the circulation were increased. If my previous reasoning has been correct, prices would not rise merely from an increase in the media of exchange; looking only at the money side of the price comparison, prices could not rise unless there were a serious fall throughout the world in the value of gold — which, owing to its great stock, is quite unlikely to occur in any ordinary period of time.[28]

28 J. Laurence Laughlin, *The Principles of Money* (New York, 1903), pp. 392-93.



## 3. Other Proponents of the Quantity Theory

To return to the advocates of the quantity theory, it should be admitted that not all of them devoted as much attention as Fisher and the Chicago school to the period of transition. Thus the sum total of Edwin W. Kemmerer's discussion of this period consisted of the statement that

> a moderate rise in the price level often stimulates business confidence itself and this in turn may increase temporarily the rates of money and deposit turnover ($V$ and $R$) and the supply of goods sold ($T$).[29]

Mention should also be made of economists such as James W. Angell who made use of the equation of exchange — and indeed, subjected it to detailed empirical study — but who (in contrast with the implications of the quantity theory) concluded from his study

> that outside currency and circulating deposits alike tend to move with or after, but apparently never *before*, the several broad indices of production, trade, and the like, to which they seem statistically and logically most nearly related. The conclusion cannot fairly be drawn from this, however, that the quantity of money is a purely passive factor in business activity. A substantial argument can be made for the view that, while the proximate initiating factor in a period of general upward movement, for example, is perhaps an increase in business activity itself, the subsequent expansion of (particularly) deposits, which our type of banking system permits and usually encourages, will in turn support or even induce a further increase in business activity. A rising spiral of mutually aggravating actions and reactions may thus be set up, which may persist for a considerable time. The data presented above are consistent with this hypothesis, though they do not adequately test it.[30]

Correspondingly, Angell contended — in the midst of the Depression of the 1930s — that

> the various groups of facts examined in the present chapter, however, strongly suggest that enforcing substantial increases in the quantity

29 Edwin W. Kemmerer, *Money* (New York, 1935), p. 58. Cf., however, also p. 106 for a capsulation of Fisher's theory. Similarly, on pp. 305-306 Kemmerer refers to the stimulation of German industry and trade by inflation in the period 1921-23.

30 James W. Angell, *The Behavior of Money* (New York, 1936), p. 60; cf. also pp. 46-48, 158, and 160. Italics in original.

of currency or deposits *in advance* of increases in business activity, by whatever means, is not likely to be an effective method for influencing general economic activity in desirable ways or, more particularly, for bringing about a sound general economic recovery.[31]

Nevertheless, Angell felt

that stabilizing the quantity of money (either holding it absolutely constant or allowing it to change gradually and evenly) would remove most of the larger fluctuations in the national income... Those fluctuations which remained would be the ones attributable to fluctuations in circular velocity, which from 1909 to 1929 were comparatively small. Whether such stability would have prevented the collapse after 1930, by preventing the development of the conditions from which the collapse evolved, cannot be argued here. For an extension of this line of considerations, see my paper on "Monetary Control and General Business Stabilization", in the *Economic Essays in Honour of Gustav Cassel* (1933).[32]

In this last essay, Angell concludes that

the practical conclusions to which the foregoing analysis leads are thus fairly simple. First, the principal sources of serious instability in general business, apart from seasonal fluctuations, are excessive variations in the volume of bank credit, and excessive volumes of current new saving and investment. Of these two sources of disturbance, the first is far more important, since the most serious consequences of excessive saving and investment appear only when the excessive investment is initially financed in significant degree through the creation of additional money. Second, in countries where central bank action is or can be made reasonably effective, the central bank can substantially stabilize the volume of bank credit by using tools already familiar, allowing it to vary only in the ways previously outlined. Excessive contraction of the supply of bank credit cannot be rectified by central bank action alone, it is true, but over-contraction can be largely prevented through the prevention of prior over-expansion. Third, excessive saving and investment can be greatly reduced through central bank action, though not entirely eliminated; and their most serious consequences can be avoided simply by controlling the quantity of bank credit.

I thus believe that proper manipulation of the monetary and financial mechanism can be made to produce a reasonable degree

31 *Ibid.*, p. 61. Italics in original.
32 *Ibid.*, p. 147, footnote 2.



of stability in general business conditions; and indeed that, with the general social and legal philosophy now characteristic of countries such as the United States, enduring stability can be secured only through such manipulation.[33]

## 4. The Cambridge Cash-Balance School

I have concentrated until now on proponents of the transactions approach to the quantity theory. The question arises as to the short-run analyses of the cash-balance proponents, and particularly of the members of the Cambridge quantity-theory school. Marshall's (somewhat unsystematic) adversions to and discussions of this question have already been summarized by Eshag.[34]

As for Marshall's disciples, Pigou devoted Part I, Chapter VIII of his book on *Industrial Fluctuations*[35] to "Autonomous Monetary Causes of Industrial Fluctuations", and began this chapter with the statement that:

> In Chapters XII-XVII I shall examine monetary and credit arrangements as *conditions* upon which initiating causes, real and psychological, act, and which, by the response they make, largely determine the scale of the effect that is produced upon the activity of industry. The response, as will be shown, is made through changes in the volume of credit and the level of general prices. Such changes, however, it is plain, may come about otherwise than as a response to the above impulses. When this happens events affecting money are themselves initiating causes of industrial disturbance, on a par with the real causes and psychological causes discussed above. The manner in which they operate is, of course, very similar to the manner in which monetary movements set going as a secondary effect of some other initiating cause operate.[36]

Pigou's views on the non-neutrality of money are presented again at the beginning of his Chapter XII (Part I):

> In a perfectly steady state, or, more accurately, in a state of perfectly steady self-repeating movement, there is no reason to suppose that the mediation of money would modify in any respect

33 "Monetary Control and General Business Stabilization", in *Economic Essays in Honour of Gustav Cassel* (London, 1933), pp. 67-68.
34 Eprime Eshag, *From Marshall to Keynes* (Oxford, 1963), Chapters IV-V.
35 A.C. Pigou, *Industrial Fluctuations* (2nd ed.; London, 1929).
36 *Ibid.*, p. 99; italics in original.

> the results ultimately achieved... When, however, there is motion, the fact that industry is wrapped in a money garment seems likely *a priori* to render its reactions to the various impulses applied to it different from what they would have been had its limbs been bare. The money garment will, we may suspect, constitute a condition modifying the effects of these impulses; for the fact that its own movements are themselves caused by these impulses is, of course, no reason why they should not also exercise a causal influence. How far and in what precise ways this suspicion is justified the six following chapters will endeavour to determine in detail.[37]

The way in which monetary factors influence economic activity is through their effect on prices:

> The extra borrowings from banks, resorted to by business men when their expectations are roseate, set forces in motion which cause the general level of prices to rise. A further rise is induced by the action of these men in drawing upon their store of value for use in industry; because, since under modern conditions this store is held in the form of money — mainly, of course, bank-money — the process of drawing on it can only be accomplished by offering money against commodities in the market. When business men's expectations become gloomy the same twofold influence comes into play to push prices down. These price movements will not, as a rule, have been fully foreseen when contracts for loans and, in a less degree, wage-agreements were entered into. Hence business men, who are, in the main, borrowers and wage-payers, find themselves in times of prosperity in receipt of a windfall gain, consequent upon what is, in effect, a doctoring in their favour of past contracts. They are thus in a position to add to the volume of new capital to be turned into industry. In bad times the position is reversed.[38]

Another influence is the Fisherine one of the reduction in the real rate of interest in periods of rising prices.[39]

These influences led Pigou to advocate a credit policy designed to keep prices stable — in an economy with a constant level of per capita real income. However, for the more usual case of a "progressive economy", he concludes that "the goal at which credit regulation can most usefully aim is not price stabilisation in an absolute sense, but price stabilisation adjusted to the trend of real

37 *Ibid.*, pp. 133-34.
38 *Ibid.*, pp. 136-37.
39 *Ibid.*, pp. 137 and 178-80.



income per head; that is to say, a state of things in which prices fall in inverse proportion to the upward trend of *average* real income".[40] This objective is to be accomplished by appropriate central-bank discount policy.[41] Furthermore:

> If a stabilising discount policy is adopted in a whole-hearted manner, the logical sequel as regards currency is neither the gold standard plan nor a plan on the Fisher model [namely, the compensated dollar]. It is a paper currency, the volume of which is not regulated by law, but is free to vary in response to whatever changes in the demand for it the stabilising discount policy allows.[42]

The effects of a rising price level in encouraging production — and a falling one in discouraging it — had earlier been discussed by Keynes in his *Tract on Monetary Reform*.[43] For want of a better alternative, Keynes accordingly supported a policy of price stabilization. In his words:

> The main point is that the *objective* of the authorities, pursued with such means as are at their command, should be the stability of prices.
>
> It would at least be possible to avoid, for example, such action as has been taken lately (in Great Britain) whereby the supply of "cash" has been deflated at a time when real balances were becoming inflated, — action which has materially aggravated the severity of the late depression. We might be able to moderate very greatly the amplitude of the fluctuations if it was understood that the time to deflate the supply of cash is when real balances are falling, *i.e.* when prices are rising out of proportion to the increase, if any, in the volume of cash, and that the time to inflate the supply of cash is when real balances are rising, and not, as seems to be our present practice, the other way round.[44]

Similar views of the effects of a changing price level were expressed by D. H. Robertson in the first edition of his book on *Money*. Here he noted that "there is reason to think that a falling price-level is not only a symptom of depression, but an active agent in increasing its severity and prolonging its duration".[45] The reason for this is that such a decrease "impose[s] a real handicap on the

40 *Ibid.*, pp. 256-57; italics in original.
41 *Ibid.*, Part II, Chapters VI-VII.
42 *Ibid.*, p. 296.
43 J. M. Keynes, *Tract on Monetary Reform* (London, 1923), pp. 32-39.
44 *Ibid.*, p. 189; italics in original.
45 D. H. Robertson, *Money* (New York, 1922), pp. 161-62.

business man in favor of the debenture holder and the wage earner".[46] Similarly, a rising price level stimulates a boom.[47] Correspondingly, there is a need for central-bank policy to investigate these fluctuations to the extent possible.[48]

As a final example of the Cambridge school, we can consider F. Lavington's classic work on *The English Capital Market*.[49] In his discussion of the effect of a changing price level, Lavington wrote:

> If the purchasing power of the sovereign begins to fall, in other words if prices begin to rise, there begins a transfer of wealth to [the business man] from property owners, capitalists, wage-earners and, temporarily perhaps, from those who supply him with raw materials. He receives a bounty over and above the return which he anticipated, and his business becomes exceptionally profitable. He therefore extends his operations... Changes in the other direction depress trade and industry; real rates of wages and interest are favourably affected, but much labour and capital is idle; losses and low profits make business men unduly timorous. While these seem to be the essential effects of changes in the value of the sovereign, their ramifications and their final consummation depend largely on the cause to which the change was originally due.
>
> A change due to a persistent increase in the output of gold may, by affecting the general level of confidence, promote an expansion of credit and thus indirectly cause a severe fluctuation of business activity.[50]

Lavington elaborated on such influences in his subsequent monograph on *The Trade Cycle*,[51] which he concluded with the policy proposal that

> there seems to be a good case for deliberately restraining the rise in prices during the period of growing trade activity which sooner or later must come. During that period some rise in prices is probably both desirable and unavoidable. But a limitation imposed on the extent of their rise, either by a further Treasury ruling removing a part of the potential expansion of note issue or a collective banking policy designed to limit the expansion of bank loans, could hardly fail to remove part of the artificial stimulus to business which results from rising prices, thereby checking the excessive growth of business confidence and limiting both the extravagance of the boom and the intensity of its following period of depression.[52]

46 *Ibid.*, p. 164.

47 D. H. Robertson, *Money* (revised ed.; Cambridge, 1928), p. 117.

48 *Ibid.*, pp. 159-63, 174-79.

Cf. also D. H. Robertson, *Banking Policy and the Price Level* (London, 1926), Chapter 3.

49 F. Lavington, *The English Capital Market* (London, 1921).

50 *Ibid.*, pp. 53-54.

51 F. Lavington, *The Trade Cycle* (London, 1922), pp. 38-51, 67, 84-85, and 108-109.



## 5. Concluding Remarks

I would like to conclude this paper with four comments. First, I have not in this paper referred to the views of Knut Wicksell and Ralph G. Hawtrey: their views on the real impact of monetary changes through the interest-rate mechanism (though a somewhat different mechanism in each case) are so well-known as to make further discussion unnecessary.[53]

Second, the analysis of the short-run impact of monetary changes on real output was presented by quantity-theorists (including, obviously, Wicksell and Hawtrey) not as casual minor afterthoughts of a basic long-run analysis of the neutrality of money, but as major subjects of discussion. Indeed, in most cases quantity-theorists devoted far more attention to these short-run effects than to the long-run one.

Third, from the survey presented in this article it also appears that a common feature of the quantity-theorists' short-run analyses was the role not of the level of prices, but of their rate of change. For some writers the anticipation of a changing price level affected economic activity through its effect on "business confidence". Others explained this effect more concretely — and more systematically — in terms of the lag of wages and other costs behind prices, and of the consequent effect of such a lag on profits. And for still others (and notably among them, Irving Fisher) this effect was formally integrated into a general theoretical framework that distinguished between the nominal and real rate of interest, and

52 *Ibid.*, p. 113.

53 On Hawtrey, see his article "The Trade Cycle", *De Economist* (Rotterdam, 1926) as reprinted in *Readings in Business Cycle Theory*, ed. G. Haberler (Philadelphia, 1944), pp. 330-49; cf. also G. Haberler, *Prosperity and Depression* (3rd ed.; Geneva, 1941), pp. 15-27.

On Wicksell, see D. Patinkin, *Money, Interest, and Prices* (2nd ed.; New York, 1965), pp. 587-97; see also Haberler, *op. cit.*, pp. 34-35.

that explained how an imperfectly anticipated (say) rise in the price level increased the former and decreased the latter. An alternative theoretical framework was developed by Wicksell, who presented his theory in terms of his basic distinction between the natural and money rates of interest. Besides these effects, many of the quantity-theorists also referred to the effect of a changing price level in changing the distribution of real income and wealth.

As a corollary to this common feature, many of the quantity-theorists also advocated a policy of stabilizing the price level by appropriate monetary action. It should be emphasized that the purpose of this action was not the price level *per se*, but the contribution that such a stable price level would make to stabilizing economic activity.[54]

I would like finally to note that some quantity theorists explicitly recognized the non-neutrality of money even in the long run. In particular, these theorists believed that because of the "forced savings" generated by a rising price level, monetary changes could affect the real stock of physical capital in the economy, and hence the real rate of interest, even in the long run.[55]

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54 As an aside on the Chicago school of the 1930s, I might note that the writings of Henry C. Simons give little, if any, indication that there was a relatively high degree of agreement among economists from different backgrounds — and different countries — in support of the policy of stabilizing the price level. What is particularly surprising in this context is the absence of any reference in Simons' writings to Irving Fisher's views — except to express his (Simons') reservations about Fisher's scheme of stamped money ["The Beveridge Program: An Unsympathetic Interpretation", *Journal of Political Economy*, LIII (No. 3, September 1945), as reprinted in *Economic Policy for a Free Society*, p. 283]. Correspondingly, Simons makes no use of the distinction between the money and real rate of interest in his various discussions of the effects of a changing price level on the level of economic activity.

All this is part of the broad question of the relation of the Chicago school of the 1930s to its contemporaries — a question that I hope to deal with on some future occasion.

55 For specific references to the writings of Pigou and Wicksell, see Patinkin, *Money, Interest, and Prices, op. cit.*, pp. 632-33.



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