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THE WICKSELL CONNECTION, THE QUANTITY THEORY AND KEYNES*

by

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THE WICKSELL CONNECTION AND ITS SIGNIFICANCE

In the business cycle literature of the inter-war years, the role of the interest rate in co-ordinating, or failing to co-ordinate, agents’ choices about the allocation of resources over time was an important theme, to which Axel Leijonhufvud (1981) gave the name "the Wicksell connection". The theme takes on particular importance in an economy in which such a co-ordination failure produces output fluctuations, because it may involve a fundamental inability on the part of market mechanisms to induce the price responses needed to restore full employment once the economy is moved away from it. To follow Leijonhufvud’s (1981, pp. 164-169) "Z model" example, if, in the wake of a fall in what Keynes (1936) called the marginal efficiency of capital, output contracts, inducing an equilibrating reduction in saving, then the excess supply of saving required to signal the need for a lower interest rate will not materialise. Unemployment will develop, however, and even though the real wage is at a value compatible with full employment, the labour market will signal, falsely, a need to reduce this price.

But, despite the fact that the interaction of saving and investment lay at the very heart of Keynes’s General Theory, the Wicksell connection virtually vanished from macroeconomics shortly after 1936, just when its full significance should finally have been recognised. In Leijonhufvud’s view, economics took a wrong turn, and the flaw in the market mechanism presented to two or three subsequent generations of students as rendering a market economy unreliable in the creation and maintenance of full employment was an alleged stickiness, particularly in a downward direction, in the level of money wages. The system’s failure to perform adequately thus came to be attributed to a mere friction, rather than to a fundamental problem with its basic configuration.

Money wage stickiness was an old story in 1936. It had been recognised as a likely source of trouble as early as 1802 by Henry Thornton, had made sporadic appearances in the literature
thereafter, and had been given a central role in the explanation of cyclical unemployment by Alfred and Mary Marshall in 1879, a role which it still played at the beginning of the 1920s. To the extent that there was a well defined "classical" explanation of unemployment before 1936, that is to say, it centred on the consequences of money wage stickiness for the behaviour of real wages over the course of the cycle, and, whatever Keynes may have intended, there is a large degree of continuity between what was taught as "Keynesian" economics and the "Classical" theory it was said to have replaced.

All this presents something of a puzzle: how did it happen that what came to be called Keynesian Economics relied upon a hypothesis with roots deep in the Classical economics of the 19th century to explain unemployment, and neglected one of the principal innovations of early 20th century macro-economics, and an innovation which occupied a prominent place in Keynes's own work at that? Leijonhufvud's answer to this question was that problems arose in the course of the transition from The Treatise on Money to The General Theory, and in particular from the role played in the latter by the liquidity preference theory of the rate of interest. This theory, he argued, distracted attention from the role of the rate of interest in the inter-temporal allocative process.

In this paper, I shall address the same problem, and offer an answer different in some respects. I shall suggest that an alternative extension of the quantity theory of money to Wicksell's played a role in the literature of the inter-war years at least as important as did the Wicksell connection, and was in fact mainly responsible for ensuring the continuity of macroeconomic thought after 1936. Because this extension was, like Wicksell's, expressed in terms of what I shall call a "two-interest-rate" model, and had the same ancestry as Wicksell's system, it is all too easy to confuse the two, and to fail to recognise just how much life the quantity theory of money had
left in it in the inter-war years. I shall also suggest that the undermining of the Wicksell Connection by the quantity theory was no bad thing.

WICKSELL

Wicksell's monetary theory started from the quantity theory of money as it was understood at the end of the 19th century, namely as an explanation of variations in the general price level mainly in terms of variations in the quantity of money.¹ The adverb "mainly" is important here, because I know of no exponent of the quantity theory at that time who neglected the possibility that variations in the velocity of circulation of money or in the volume of transactions would also affect the price level. Its characteristic prediction that the price level would move in strict proportion to the quantity of money was always advanced on a strictly ceteris paribus basis. Even so, the quantity theory was not a tautology, for it was understood to imply that causation ran from money to prices and not in the opposite direction.

Wicksell's approval of the quantity theory as "[t]he only specific theory of the value of money . . . which can make any claim to real scientific importance" (1906, p. 141) is sometimes taken as evidence that he was himself a quantity theorist. Indeed strong cases for such an interpretation of his work have been made by Patinkin (1965) and, more recently, by Humphrey (1997). In my view, however, there is more to the matter than this. Wicksell thought of the quantity theory as the most satisfactory of currently available theories of the price level, but he also thought of it as badly in need of improvement. Two factors in particular bothered him: first, the quantity theory dealt with equilibrium relationships among variables, and said nothing about the mechanisms that would restore equilibrium after a disturbance; and second, crucial to the subject matter of this paper, it relied heavily on stability in the velocity of circulation, which Wicksell
regarded, perhaps under the influence of Carl Menger (see Streissler, 1973, pp. 165-167), as one of "the flimsiest and most intangible factors in the whole of economics" (1898, p. 160).

Wicksell attached particular importance to this latter problem, because, like many of his contemporaries he thought of the quantity of money to which the theory applied as being the quantity of what we would nowadays call currency. He knew that the deposit liabilities of commercial banks circulated as means of exchange, indeed he attached great importance to this phenomenon, but he thought of it as influencing the velocity of "money", rather than as requiring an extension of the concept of money to which the theory was applied. This should have been no more than a matter of semantics, but it came to acquire fundamental substantive importance. In (1898) Wicksell developed a sophisticated version of Alfred Marshall’s stock demand for money, involving careful analysis of what we would nowadays call the transactions and precautionary motives for holding money; but he applied it only to the demand for currency in what he called a pure cash economy model. Wicksell also analysed, as a theoretical limiting case, what he called a pure credit economy. Here all transactions were by transfer of deposits and no currency existed; but instead of extending his analysis of the demand for money to deposits he treated this economy as one in which the quantity theory was irrelevant. In Wicksell’s view, such an economy required a theory of the price level separate and distinct from the quantity theory, and, to the extent that elements of that economy were present in the real world, that separate and distinct theory took on empirical relevance for him as well.

Wicksell developed what I have already called a "two interest rate model" to deal with these matters. In the real economy, following the Austrian analysis of Menger, and particularly Bawerk, he postulated the existence of a natural rate of interest which was equal to the marginal product of capital per unit of capital, and which would, also, in a state of frictionless barter equate
saving and investment. To this, in an economy in which all exchange was mediated by the liabilities of commercial banks, he opposed the money rate of interest at which they would lend. Equality between these two rates would lead to what he termed monetary equilibrium, a situation of zero credit creation and price level stability, here Wicksell overlooked the problems created by positive economic growth and any discrepancy between these rates, a shortfall of the money rate below the natural rate being the case that mainly interested him, would involve a disequilibrium involving positive credit creation by the banks and a rising price level. Such a disequilibrium would, moreover, persist for just so long as the discrepancy between interest rates continued.

In Wicksell’s theoretical pure credit economy, prices could rise for ever, but in the real gold-standard world in which he lived, mechanisms captured by the quantity theory were still at work. Specifically, the public’s stock demand for currency would increase with the price level, and a drain of currency from the commercial banks would force them to raise their lending rate until it was equal to the natural rate of interest, at which point the process of rising prices would be brought to a halt. It is to this sequence of events that the label "cumulative process" is properly given, as Patinkin (1965) correctly argued. Even so, Wicksell believed, as an empirical matter, that the main sources of disturbance were located in the real economy rather than the monetary system, so in his view, even under the gold standard, price level movements were the consequence of shifts in the natural rate of interest, rather than of changes in the quantity of currency, as the quantity theory required.

In the eyes of his inter-war followers, Wicksell’s two interest rate model amounted to much more than an extension of the quantity theory of money; rather as Bertil Ohlin (1936, p. xiv) put it "By means of his brilliant assumption of a pure credit economy, Wicksell successfully escaped from the tyranny which the concept 'quantity of money' . . . exercised on monetary theory". The
quantity of money as Wicksell, and indeed Ohlin along with other Swedish economists of his generation, conceived of it, was completely absent from the pure credit economy. Furthermore, though Wicksell himself treated his two interest rate model as an explanation of price level movements, it had obvious implications for real economic variables too, which others were to develop in the 1920s and 1930s, by which time war-time abandonment of the gold standard, and subsequent difficulties in re-establishing it, made the "pure credit" economy a good deal more than a limiting case of mainly theoretical interest.

TWO TYPES OF WICKSELL CONNECTION:- THE AUSTRIANS AND THE STOCKHOLM SCHOOL

An act of investment involves the production of current goods, not with a view to their immediate consumption, but with a view either to storing them for consumption at some time in the future, or if they are producers' goods, to using them to produce output in the future. An act of saving, on the other hand, involves refraining from current consumption. In a multi-agent economy, these two acts are potentially independent of one another and the plans giving rise to them require co-ordination. That is the role of the rate of interest, and in Wicksellian vocabulary, the natural value of that variable is, among other things, the one which reconciles these plans, given that other prices are just such as to clear all other markets at the same time.

If the banking system can directly set the rate of interest that rules in the market, or indirectly influence it to ensure that it takes something other than its natural value, and if the credit which must be supplied to maintain that disequilibrium goes primarily to would-be investors, that may have real consequences for the inter-temporal allocation of resources. Those investors will be enabled to outbid the producers of consumption goods for available inputs, not least labour, and to
put them to work to provide for future rather than present consumption. To use the vocabulary of
the Austrian economists who developed the implications of this version of Wicksell's two interest
rate model, Ludwig von Mises (e.g., 1924) and Friedrich von Hayek (e.g., 1931), households will
be subject to *forced saving*. But, if households are unwilling to defer consumption, they will
attempt to spend incomes generated in the newly expanded investment goods industries on
consumption goods that are not available, thereby tending to restore the original structure of relative
prices. Their purpose here can be defeated only if further bank credit is created to enable investors
to continue to outbid them, but the longer this process persists, the larger becomes the discrepancy
between the time path which households desire their consumption to follow and the time path along
which firms plan to supply consumption goods.³

The outcome here, according to the Austrians, will be either continually rising inflation to
keep forced saving going, or the onset of an economic crisis, which they identified with the upper
turning point of the business cycle. In that crisis, agents' underlying consumption plans reassert
themselves and are found to be incompatible with the economy's capacity to deliver consumption
goods. The crisis is thus characterised simultaneously by excess demand for consumption goods,
and too large a capital stock, some of which will be incomplete into the bargain, and there is
nothing to be done save wait until the passage of time and depreciation put matters right.⁴ For a
while in the early 1930s, it looked as if this Austrian variation on the Wicksellian theme, which
stressed the effects of credit creation on the structure of the economy's supply side, would become
a new macroeconomic orthodoxy. It was, however, flawed in two ways.

First it soon became evident that there might exist mechanisms that could turn what was
initially an unplanned higher saving rate into an equilibrium phenomenon. Dennis Robertson (1926)
in collaboration with Keynes, presented "induced lacking" as a possibility here; and Erik Lindahl
(1930) showed that wage stickiness in conditions of rising prices could induce a redistribution of income towards profits and hence an increase in voluntary saving. More fundamentally, Austrian theory relied on Boehm-Bawerk’s notion that there existed a natural rate of interest determined solely by the technical properties of that supply side, and independently of the behaviour of the monetary system. Wicksell (1896, 1905) himself understood that there were problems here in a multi-good economy, as did Gustav Cassel (1903), and above all Irving Fisher (1907); but the Austrians simply ignored these issues, at least until the publication of Hayek’s *Pure Theory of Capital* in 1941.  

On the other hand, Wicksell’s Swedish followers, notably Erik Lindahl, Gunnar Myrdal and Bertil Ohlin, labelled by the last named in (1937) the *Stockholm School*, understood and accepted the Fisherine position that

"To compare services invested and the resulting products, they must be expressed in a common unit which presupposes that the price relation is given. Then the real rate of interest does not depend only on technical conditions, but also on the price situation, and cannot be regarded as existing independently of the loan rate of interest." (Lindahl 1930, tr.1939, p. 248)

The Stockholm School grasped the significance of this insight for how Wicksell’s two interest rate model could be developed, and they interpreted the natural rate of interest, not as the marginal product of capital per unit of capital determined by the properties of some aggregate production function, but instead as the discount rate which, in a stationary economy, would produce "equality between the capital value and the cost of production of existing real capital" (Myrdal 1931
p. 70, original in italics) and, in a growing economy, a "complex of profit margins in different firms which stimulates just the amount of total investment which can be taken care of by available capital disposal [i.e. saving]" (Myrdal 1931, pp. 82-83, original in italics). Two features of the Stockholm School's variation on Wicksell's analysis followed from interpreting the natural rate of interest as a discount rate to be applied to future streams of income. First, the interaction of saving and investment was presented as mainly important for its effects on the current level of the aggregate demand for output, rather than on the future structure of its supply; and second, expectations played a pervasive role in the analysis of that interaction.⁵

Although they understood the importance of forward looking expectations as determinants of current behaviour, however, the Stockholm School proposed no theory to discipline the modelling of those expectations, and this left their analysis crucially incomplete. If expectations were not pinned down, then virtually anything could happen. That is one reason why, unlike their Austrian contemporaries, the Stockholm School generated no core theoretical model to encapsulate their thought. Rather they produced a wide variety of what they called "model sequences", open ended stories about how an economy might evolve over time if the rate of interest was not maintained at its natural level. Lindahl and Myrdal were both conscious of the workings of the so-called "Fisher effect" of inflation expectations on the nominal rate of interest, and they therefore understood that any level, or rather term structure, of market rates of interest was compatible in principle with the maintenance of monetary equilibrium only provided that it was congruent with the term structure of inflation expectations. As a practical matter, however, they stressed the importance of keeping the environment in which agents operated and about which they had to form expectations as simple as possible, so their recommended policy goal was a variant of price stability in which those prices
open to easy influence from monetary policy would move in harmony with those, money wages in particular, whose behaviour was largely institutionally determined.

The trouble here was that, in the Wicksellian "pure credit economy" in terms of which the Stockholm School's analysis was usually carried out, such recommendations left monetary policy with too much to do. Given the general public's expectations about the future time path of the price level, the monetary authorities' task was to set interest rates at their "natural" level, but they appeared to have no tool to determine what those expectations would be in the first place. As the Stockholm School's work evolved during the 1930s, it came to rely more and more on backward looking expectations formed as a function of experience, thus providing a technical solution to this problem, but Johan Myhrman's (1991) complaint that their theory of money was crucially inadequate must have considerable appeal to anyone who would prefer to see inflation expectations modelled with the aid of a theory of price level behaviour rather than by atheoretical extrapolation from the past.

Myhrman's point was that, in following Wicksell, and throwing the quantity of money out of their analysis, the Stockholm School left themselves without a means of determining the price level at the beginning of any model sequence, other than as a consequences of history and institutions, which is to say as an exogenous datum from which the sequence might start. Within any such sequence, moreover, it was the behaviour of interest rates working through their effects on saving and investment that mattered, so that the quantity of bank credit and the liabilities that matched it, to the extent that they were mentioned at all, were treated as passively endogenous, lying at the end of a chain of causation with their behaviour having no further consequences for other variables.
In all this, the Stockholm School were undoubtedly following one path to which Wicksell had pointed with his pure credit economy model, but it was a path through terrain whose contours were defined, perhaps distorted, by his failure to extend the concept of "money" to which the quantity theory might be applied to the deposit liabilities of the banking system. It is of course quite conceivable that this feature of Wicksell's analysis represented a useful simplification which enabled monetary economics to focus on crucial and hitherto neglected mechanisms - the Wicksell connection - linking the banking system to intertemporal allocative process, but it is also conceivable that it was a misleading simplification which prevented the investigation of other potentially important matters. This issue could only be settled by systematically investigating the alternatives, and this the Stockholm School did not do; but others did as we shall now see.

TWO-INTEREST-RATE EXTENSIONS OF THE QUANTITY THEORY:-- FISHER AND HAWTREY

Among Wicksell's contemporaries, Irving Fisher was undoubtedly the quantity theory of money's leading exponent. His work was well known to Wicksell and his successors, both Austrian and Swedish, and, he in turn was aware of at least the general features of Wicksell's cumulative process analysis by the time he published his definitive statement of that theory in *The Purchasing Power of Money* (1911). Fisher's characterisation of the quantity theory is quite representative of how economists at the beginning of the 20th century thought of it.

"The price level . . . normally varies directly with the quantity of money (and with deposits which normally vary in unison with the quantity of money), provided that the velocities of circulation and the volume of trade remain unchanged, and that
there be a given state of development of deposit banking. This . . . constitutes the so-called quantity theory of money. The qualifying adverb 'normally' is inserted in the formulation in order to provide for the transitional periods or credit cycles." (p. 320)

In the present context, two features of Fisher's statement are of particular interest: first, his attribution to bank deposits of a role parallel to that of "money", by which he here meant currency, in the determination of prices; and second, his reference to "transitional periods or credit cycles" as involving circumstances in which the quantity theory did not quite hold. In fact these two features are inter-related. It was Fisher's view that, over the course of the cycle (or during the transition from one equilibrium to another, for the two situations were essentially identical in his eyes) causation ran not just from the quantity of deposits to the price level, but also, though not instead of, from the price level to deposits. Bank deposits were, that is to say, an endogenous variable in Fisher's view; but, and contrary to Wicksell and his later Swedish followers, they were themselves a link in a cumulative process, rather than lying at the end of a unidirectional causative chain, and so they could not be ignored. Fisher was particularly clear in stating this position, but it is worth stressing that he was by no means unique among quantity theorists of this period in holding it.

Fisher's explicit analysis of transition periods relied on a two interest rate model whose relationship to that of Wicksell he acknowledged. (See 1911, pp. 59-60), but his two interest rates were not quite the same as Wicksell's, who had distinguished between a market rate set by the banks and a natural rate derived from the properties of the real economy, both measured in what we would now call "real" terms. Fisher, on the other hand, distinguished between a nominal market
rate and the nominal rate of profit expected by the typical businessman who borrowed from banks. Surprisingly, given his contributions to capital theory (e.g., 1907), when he wrote about transition periods, Fisher was vague about what determined the real component of the rate of profit, never, for example, discussing questions about its relationship to saving and investment behaviour. It was the influence of inflation expectations on profit expectations that lay at the heart of his treatment of transition periods. Specifically, he postulated that, if some shock set prices rising, inflation expectations and hence higher profit expectations on the part of the businessman would be generated, and he also argued that, although the banks' lending rate could conceivably rise completely to offset this effect, in fact it would not.

"Consequently, he will . . . be encouraged to expand his business by increasing his borrowings. These borrowings are mostly in the form of short-time loans from banks; and . . . engender deposits . . . but this extension of deposit currency tends further to raise the general level of prices." (pp. 58-59)

Fisher analysed what we may reasonably term a cumulative process, then, but it was unlike Wicksell's in two respects. First, he thought of it as usually being cyclical in nature as the market rate of interest caught up with and then overtook rising profit expectations on the upswing, and *mutatis mutandis* on the downswing too. Second, and crucial for the topic under discussion here, it was the deposits created as a consequence of bank lending which affected the demand for goods and services in Fisher's story, and not *per se* the level of the market rate of interest relative to profit expectations. Thus, although both Fisher and Wicksell deployed two interest rate models of the influence of the banking system's activities on demand, and hence on prices, Fisher concentrated
just as exclusively on what we would now call the *money channel* of such influence as did Wicksell and his followers on what we would now call the *credit channel*. He was able to ignore problems concerning the interaction of saving and investment, therefore, as Wicksell or anyone following his lead could not.

In fact, as a matter of the logic of two interest rate models, both channels can be operative. Indeed, in the earliest expositions of such a system, those of Henry Thornton (1802), and the Bullion Committee (See Cannan 1919) of which Thornton was an active member, this very point was made quite clearly. More to the point here, it was also recognised by Fisher's younger British contemporary, Ralph Hawtrey, whose monetary theory of the cycle provides a vital link between the quantity theory of money and the income-expenditure approach to output and employment determination whose later dominance of macroeconomics was achieved at the cost of the disappearance of the Wicksell connection.⁹ Hawtrey, who took as his starting point the Cambridge cash balance version of the quantity theory, also relied on a two interest rate model—the three interest rates in his first (1913) exposition of it, for he was there careful about the nominal-real distinction when discussing profit-expectations. Like all English economists, however, he seems to have been unaware of Wicksell's work before about 1930.

The rate of return to which the bank lending rate was compared in Hawtrey's model was that on inventory investment undertaken by "traders", and not the return on long term investment which underlay the Wicksell connection. This feature of his model presumably reflected the fact that British and American commercial banking, rather than continental style universal banking provided the institutional context of his analysis. But Hawtrey's two interest rate mechanism was nevertheless Wicksellian to the extent that it involved a direct credit market effect of the banking system's lending rate on expenditure. This came into play, for example, when "[a] rise in the rate
of interest increases the cost of holding stocks of commodities, and dealers accordingly proceed to reduce their stocks by giving fewer orders to producers" (Hawtrey 1913, p. 267). Even so, this was, for Hawtrey, only a first round effect. Smaller planned inventory holdings meant less borrowing from the banks, less "credit money" (as he sometimes called demand deposits) in circulation, and this in turn "involve[d] diminished balances in the control of the community generally and consequently diminished purchases of goods" (1913 p. 267), and so on, in a downward cumulative process. In this process, moreover, it was the influence of bank lending on the quantity of bank money and thence on the demand for output, what I am here calling the money channel, that played the central role.

Now Hawtrey, like Fisher and Wicksell, used the phrase "quantity theory" to refer to a proposition about the equilibrium relationship between the quantity of money and the general price level in which causation ran in only one direction, and he was therefore just as conscious as either of them that to analyse the processes whereby such an equilibrium might be disturbed and restored was to go beyond that theory. As he put it in the Preface of the first edition of his most influential book, *Currency and Credit* (1919),

"Scientific treatment of the subject of currency is impossible without some form of the quantity theory . . . . But the quantity theory by itself is inadequate, and it leads up to the method of treatment based on what I have called the consumers' income and the consumers' outlay - that is to say, simply the aggregates of individual incomes and individual expenditures" (1919, p. v)
The phrase that Hawtrey habitually used to refer to this aggregate of individual expenditures was *effective demand*, and he included investment spending in it, because he took it for granted that consumers' purchases of bonds and other financial assets would be translated into demand for capital goods on the part of those who sold such instruments. In Hawtrey's analysis, that is to say, saving, *except to the extent that it involved the accumulation of money balances*, just as surely created demand for output as did direct consumer outlay on consumption. Though Hawtrey recognized that the banking system might affect output through a credit channel, his analysis ignored the problems of co-ordinating saving and investment and hence did not make the Wicksell connection.

Hawtrey relied on money wage stickiness to explain output fluctuations. Though wage stickiness was, as has already been noted, a well established feature of classical economics, the way in which Hawtrey came to deploy it was novel. In Marshall and Marshall's (1879) account of the cycle, the quantity of bank money interacted in a cumulative fashion with a flexible price level, but though prices were flexible, money wages were not. Hence, real wages moved counter-cyclically, and variations in output and employment were an inherent feature of the cycle. Hawtrey entertained this mechanism, particularly in his earlier writings, but even in (1913) he broached, albeit briefly, a second role for wage stickiness incompatible with the first, which by the mid-1920s, he had come to prefer and on which he relied thereafter. The main point about wage stickiness in this alternative mechanism was that it induced price level stickiness, particularly in a downward direction. Employment therefore varied, not because, with money wages sticky, prices and real wages varied, but because with money wages sticky, prices were also slow to change. Changes in nominal expenditure therefore had to be met by output changes. In Hawtrey's words,
"...the causation of unemployment by monetary contraction is best explained through the consumers’ income and outlay. Suppose that anything occurs...to cause a reduction in the consumers’ income. There will ensue a reduction of the consumers’ outlay (not exactly equal, for consumers’ balances may be drawn on). Thereby the total effective demand for commodities is curtailed. Dealers find their sales at existing prices falling off, and give smaller orders to the producers for the replenishment of their stocks. The diminished activity of the producers means a further diminution of the consumers’ income and outlay...

This process begins and may even continue for a time without any fall of prices...

The fall of prices, so far as actually accomplished, is a relief; it makes a given amount of money-demand absorb a greater amount of goods. The difficulty of reducing wages prolongs the depression, because it obstructs the fall of prices."

(Hawtrey 1932, pp. 320-322)

Here, quite clearly, we have an explanation of unemployment based upon an extension of the quantity theory of money - essentially what Patinkin would in (1948) call the real balance effect - and utilising just that form of the wage-price stickiness hypothesis which would soon come to dominate so called "Keynesian" discussions of the phenomenon. But in that form, the wage-price stickiness hypothesis severs the Wicksell connection. It remains to explain how this severance came about, when Keynes' himself paid so much explicit attention to Wicksell in the Treatise on
Money, and when he made so much of the inability of the interest rate to co-ordinate saving and investment decisions in the General Theory.

KEYNES

The macroeconomic experience which dominated Keynes' work from the early 1920s onwards was, of course, that of the U.K. where the main policy issue was chronic unemployment. In "The Economic Consequences of Mr. Churchill" (Keynes 1925), he argued that British unemployment was at heart a monetary problem and not a labour market problem, that in principle it could be dealt with by a simultaneous cut in the levels of money wages and prices, with no change in real wages, but that in practice it was impossible to implement this adjustment given the difficulties of bringing about an economy-wide cut in money wages in a decentralized economy. The wage stickiness mechanism he there invoked, that is to say, was like that deployed by Hawtrey, and not the traditional Marshallian one in which money wage stickiness affects real wages. As late as 1930, moreover, in the applied sections of the Treatise on Money, and in a number of related writings too, Keynes was inclined to argue, as did Hawtrey at that time, that monetary policy alone was powerful and reliable enough to cope with the then burgeoning depression, if only it was properly deployed, and to treat public works expenditure as a second best measure to be used when considerations of international financial linkages prevented the single minded devotion of monetary stimulus to domestic goals.¹¹

The Treatise, however, was intended as a major contribution to monetary theory, not to current policy debates. One of its central endeavours was to integrate the quantity theory with Wicksell’s two interest rate analysis, and it was only at this rather late point in the story that the Wicksell connection was explicitly made in English economics.¹² Even so, the connection which
Keynes made with Wicksell in the Treatise was not all that secure. It was very much in the style of the Stockholm School, with the important impact of saving-investment interaction being on the current demand for output rather than the structure of its future supply. Hence, though distinct from them, Keynes' two interest rate model was not so far removed from those of Fisher and Hawtrey as was the Austrian supply-side alternative. Keynes himself recognised this, when he argued that the major difference between what he was attempting and what Hawtrey had already achieved lay in the latter's having over-emphasised the short interest rate and inventory investment to the neglect of the long rate and long term capital formation.

Keynes made another distinction between his extension of Wicksell and those two interest rate models deriving more directly from the quantity theory, however, and in the process moved even closer to Stockholm style analysis, because he denied any direct effect of the quantity of money on expenditure. He noted quite correctly that the models in question had "bank rate...acting directly on the quantity of bank credit and so on prices in accordance with the quantity equation" (1930, I, p. 168), but he summarised his own view of the matter in the following way.

"Given associated changes in the total quantity of money and in the effective level of bank rate respectively, it is via the latter that the ultimate modification in the purchasing power of money is generated... The order of events is not that a change of bank rate affects the price level because, in order to make the new bank rate effective, the quantity of money has to be altered. It is, rather, the other way round. A change in the quantity of money affects the price level in the first instance, because, this means a bank rate which will change the market rate of interest relatively to the natural rate."
If we start from a position of equilibrium, then - provided that efficiency earnings are stable - the condition for continued stability of price levels is that the total volume of money should vary in such a way that the effect of the corresponding volume of bank lending on the market rate of interest is to keep the value of new investment at an equality with current saving." (1930, I, p. 197, italics in original)

In short, the credit channel was the crucial one according to the Keynes of the *Treatise*, while in the monetary channel, causation ran in reverse direction to that postulated by Fisher or Hawtrey. Keynes clearly attached considerable significance to this proposition, but he did not succeed in convincing at least one reader about it. Dennis Robertson opined that "this whole controversy is a debate of the hen and egg order" (1931, p. 405).

To settle a disagreement of this sort, one needs to analyse, and perhaps test empirically too, the model whose properties are in dispute, but that can be done only if the model in question is complete and coherent. The model of the *Treatise* was neither: as is well known, it lacked a mechanism to derive well defined consequences for income and employment from the interest rate disequilibrium upon which it focused, the point which Leijonhufvud stressed when he constructed his "Z model"; not so widely recognised, but crucial for the issue at stake here, it did not deal with what might happen if the quantity of money, put into circulation by the bank lending needed to maintain the rate of interest at its natural level, differed from that which the economy wanted to hold.

If the evolution of economic thought was an orderly process, a structure resembling Leijonhufvud's "Z model" might well have been the next step in our story, but it was not. Instead
we got, in *The General Theory*, something substantially different from that, and something in which the competing roles of credit and money channels were pushed into the background; for although, as Leijonhufvud has reminded us, that work's middle name was "Interest", its first and last names (the two least likely to be abbreviated to an initial in most signatures) were "Employment" and "Money". The book was in the first instance, a contribution, not to cycle theory, but to the literature on employment; and here its specific analytic contribution was to argue that, to the extent that they would work at all, wage cuts would affect employment, not by the classical route of inducing a fall the real wage, but rather by a variation on the monetary route which he and Hawtrey had earlier explored, namely one leading through a lower price level to a higher quantity of what we would now call real money balances; and Keynes also argued that a similar result could be obtained by the expedient of increasing the nominal money supply.

Now the simplest framework for expounding such a view is a comparative static one in which the nominal quantity of money is an exogenous variable, which is perhaps why, in 1936, Keynes revived this long outmoded analytic fiction, which had nevertheless been the *sine qua non* of the traditional quantity theory. There is, however, no reason to believe that, in giving new life to this assumption, Keynes had any intention of setting the stage for a revival of the quantity theory, or any doctrine that derived from it: quite the contrary. To begin with, the parallel Keynes drew between a money wage cut and monetary expansion was by no means exact. The two policies would have different distributional consequences, so that "it can only be an unjust person who would prefer a flexible wage policy to a flexible monetary policy" (1936, p. 268). In addition, falling wages and prices might set up expectational dynamics that would not occur with monetary expansion, and might prevent a new equilibrium ever being reached. Finally, and *pace* a host of commentators, in 1936 Keynes does appear to have believed that increases in the quantity of real
balances, whether brought about by falling prices or a rising nominal money supply, had effects on aggregate demand only to the extent that they induced changes in long interest rates, that the demand for money in depression conditions was usually highly interest elastic, so that such increases were an unreliable means of restoring the economy to full employment.\textsuperscript{14}

*The General Theory* did, that is to say, stress the Wicksellian theme of the inability of the interest rate to equilibrate saving and investment at full employment. It argued that there was a value, a Wicksellian natural value though Keynes refused to call it that, for the long rate of interest at which investment would fill the gap between full employment saving and consumption; and it traced the occurrence of chronic unemployment to the inability of the market rate to fall to this level because of the nature of the supply and demand for money in a market economy. The significance of this version of the Wicksell connection was, however, very much a matter of the monetary system's specific empirical properties. If they were as Keynes suggested, then downward wage and price flexibility would indeed be insufficient to generate full employment (except to the extent that a Pigou effect might operate in a very long run from which perverse expectational dynamics were absent). If, on the other hand, liquidity preference did not, as a practical matter, put a floor under the market rate of interest, a suggestion made by a number of early commentators on the *General Theory*, not least Hawtrey (1937), then the flaw in the price mechanism which Keynes claimed to have discovered did not exist. Instead, the causes of unemployment resided in labour market frictions and not in the institutions upon which the system relied to co-ordinate the inter-temporal allocation of resources. The latter conclusion is, to be more precise, an implication of embedding a rather interest inelastic demand for money in the formal IS-LM structure which a number of commentators extracted from the *General Theory*. 
To the extent that this model is present in that book, and one does not, pace Patinkin (1976), have to commit oneself to the view that IS-LM itself constitutes the central message which Keynes intended to convey therein, in order to argue that it is indeed to be found there, the stage was set by the General Theory itself for a debate about the properties of, first the interest sensitivity of the demand for money function, and second the sensitivity of wage and price behaviour to unemployment, in short about the two matters which would come to dominate the Monetarist controversy a quarter century later.

Now the effect of the empirical victory of Monetarism in that controversy (whether it was a justified victory or not is irrelevant here) was at first sight to eliminate altogether any version of a two interest rate model from macroeconomics, but only at first sight. Monetarists treated the quantity of money as "exogenous" only in the sense that they worked with a system in which an important line of causation ran from money to aggregate demand, and some of them often worked with a simplified system in which only this line of causation was highlighted. Others, however, for example Karl Brunner and Allan Meltzer (see 1993 for a retrospective account of their views), seldom resorted to this simplification, and usually stressed the importance of the interaction of the banks and the non-bank public in the market for credit as being crucial for the determination of the money supply.¹⁵ Friedman’s writings on the cycle in collaboration with Anna Schwartz (eg. 1963a & b) emphasised similar factors, albeit in a dynamic setting in which they argued that what really mattered from an empirical viewpoint were effects of changes in the money supply on aggregate demand whose nature and magnitude were, as a first approximation, independent of their sources. As they put it in (1963b),
The key question is not whether the direction of influence is wholly from money to business or wholly from business to money; it is whether the influence running from money to business is significant, in the sense that it can account for a substantial fraction of the fluctuations in economic activity ... The [existence of] the reflex influence of business on money ... is not in doubt in light of the factual evidence summarized above ..." (Friedman and Schwartz (1963b, pp. 214-215)

A two interest rate model did, then, lie in the background of post-General Theory Monetarism after all, but it was a version of that model in the tradition of Fisher and Hawtrey rather than Wicksell.

CONCLUSIONS

I do not regret the demise of the Wicksell connection in the way Leijonhufvud did. My relative equanimity here follows from my conviction that Wicksell and his immediate followers came to regard the analysis of the influence of the monetary system on the allocation of resources over time as an alternative to the quantity theory of money, rather than a development of it, because a particular, and unfortunate, semantic choice took on substantive significance for them. They did not extend their concept of money to encompass the deposit liabilities of the banking system, and hence took it for granted that, because institutional developments had rendered the quantity of currency essentially irrelevant to the economy's behaviour, they had also made it unnecessary to analyse the interaction of the supply and demand for those deposit liabilities. The validity of this step was of course, an empirical question, but they did not treat it as such.
Others followed an alternative route, as we have seen, and extended the traditional concept of money upon which the quantity theory relied. Some of them, notably Hawtrey and Keynes, also adopted an untraditional view of the significance of nominal wage stickiness, treating it as a source of price level stickiness rather than of perverse real wage behaviour. These two features opened up an alternative line of analysis to that suggested by the Wicksell connection, however, and one whose implications for the inherent stability of a money economy can be rather different from those of Leijonhufvud’s Z model. If, as an empirical matter, agents do have a well defined demand for a real stock of bank deposits, and if, again as an empirical matter, that real stock increases when money wages and prices fall, then downward pressure on money wages in the presence of unemployment is far from irrelevant when the marginal efficiency of capital falls. It tends, absent perverse expectational dynamics, to generate both an increase in consumption expenditure and, by way of a rise in the supply of loanable funds, downward pressure on the interest rate and a restoration of investment expenditure too. Wage stickiness can disrupt this mechanism, of course, and so can a monetary policy regime that, in the presence of perverse expectational dynamics, permits the nominal money supply to contract along with the demand for it. But the former is a friction, and the latter a policy error. Neither can properly be characterised as a fundamental flaw in the mechanics of a market economy.
FOOTNOTES

1 I have discussed the relationship of Wicksell's analysis to the quantity theory in Laidler (1991a) Ch. 5.

2 As far as I know, Wicksell only used the phrase "marginal product of capital" once in connection with the natural interest rate, in (1907). However his systematic exposition of the pure credit economy case in (1898) makes the concept's roots in Austrian capital theory quite clear.

3 As Erich Streissler has reminded me, in the background to Austrian analysis, there lies a continental European "universal" banking system, in which bank loans are the primary means whereby investment expenditures are financed.

4 I have discussed Austrian cycle theory in general, and Hayek's contribution to it in particular in Laidler (1994). In that essay (pp. 10-16) I questioned the logic whereby the Austrians claimed inevitability for rising inflation if the crisis was to be averted. However, what matters in the current context is that they believed in the validity of this point, and not whether they were justified in doing so. This is not to imply that there is not a good deal of relevant content to Austrian theory. The phenomenon of unfinished or vacant commercial real estate, so visible in the early 1990s is surely best understood in terms of that theory, as Erich Streissler has suggested to me.

5 See Steedman (1994) for a penetrating commentary on this difficult book.

6 But the qualifier "mainly" here should be noted, because some Stockholm School work was concerned with the manner in which changes in income distribution could turn forced saving into voluntary saving, and hence eliminate the disequilibrium between the structure of demand and the structure of production that the Austrians thought inevitable. I have discussed their work, and its relationship to that of their Austrian contemporaries in Laidler (1991).
This is, of course, just what Wicksell had done in his pure credit economy model as well, while it is also interesting to note that he also showed awareness of the difficulties that forward looking, or even endogenous, expectations would create for his analysis. See Laidler (1991a, pp. 134-35). His Swedish followers did not investigate sequences in which the interaction of the supply and demand for bank deposits could determine the starting price level, the evolution of these magnitudes could determine its future behaviour, and expectations about that evolution could form the basis of inflation expectations, and perhaps it is unfair to have expected them to do so. After all, it was not until the 1970s that the analytic techniques required for this task became readily available.

Nor of an earlier period: the endogenous response of bank money to business expansion, and its subsequent effects on that expansion was a central feature of monetary theories of the cycle theory in the 19th century. See Laidler (1991a, Ch. 1, especially pp. 20-26).

I have discussed the cycle theories of Fisher and Hawtrey, and the role played therein by endogenous responses of bank money, in Laidler (1991a, ch. 4). Hawtrey was familiar with Fisher’s work, however, to the point that Fisher’s name was the only one appearing in the index of his first book, *Good and Bad Trade* (1913).

Although the passage I quote below to illustrate this viewpoint comes from Hawtrey (1932), it was selected for the clarity with which its puts the matter, rather than because 1932 is the date of the idea’s first appearance in Hawtrey’s work. It is, for example, a central feature of the analysis of monetary policy and public works expenditures set out in Hawtrey (1925).

In addition to the discussion of these issues in Keynes (1930, II, pp. 332 et seq.) See also his Harris Foundation Lectures of the following year (Keynes, 1931, pp. 37-38).
Earlier developments there, due in particular to Dennis Robertson (eg. 1926), though in some respects running parallel with Austrian and Swedish extensions of Wicksell's two interest rate model, in fact seem to have derived directly from the Marshallian tradition and to have come about when their author was still largely unaware of Wicksell's contribution. I have discussed Robertson's work of this period, and its similarities to the analysis of Mises and Hayek in Laidler (1993).

See Skidelsky (1995) for a discussion of the role played by the Quantity Theory in the development of Keynes' economic thought, and his ambivalent attitude towards it.

Hence I find myself simultaneously agreeing with Patinkin (1976) about the central importance of Chapter 19 in the General Theory, and with Allan Meltzer (1988, Ch.4) about the importance of the book's treatment of fundamental uncertainty as a source of secular unemployment. My excuse here is that I can see no reason why an author cannot attempt to convey more than one important message in a single book.

There is not space in this essay to deal with those formal IS-LM versions of the "Keynesian" model in which it is suggested that, when the monetary authority operates by setting the interest rate, the quantity of money becomes a passively endogenous variable. As Brunner and Meltzer, eg. 1993) have long and correctly complained, these models are flawed in ignoring the fact that the banks interact with the non-bank public in both the credit market and the market for money balances, and that, balance sheet identities being what they are, the outcomes of these interactions must satisfy them before the system as a whole can be in equilibrium.
REFERENCES


Keynes, J. M. (1925). "The Economic Consequences of Mr. Churchill" in Essays in Persuasion
London: Macmillan.


______ (1931). "An Economic Analysis of Unemployment" in Wright, Q. (ed.), Unemployment
as a World Problem [Lectures on the Harris Foundation 1931]. Chicago: University of
Chicago Press.


University Press.

Cambridge: Cambridge University Press.

(eds.), Money and Business Cycles - The Economics of F. A. Hayek, Vol. I. Aldershot:
Edward Elgar.

Thought.


Lindahl, E. (1930). "The Rate of Interest and the Price Level" (as Tr. in Studies in the Theory of


