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IN THE 1870s

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ENGLISH CLASSICAL MONETARY ECONOMICS IN THE 1870s*

by

David Laidler

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I. INTRODUCTION

Two great debates dominate the history of British monetary economics in the first half of the nineteenth century, the Bullionist Controversy, and the Currency School—Banking School dispute. The second of these culminated in the passage of Sir Robert Peel's 1844 Bank Charter Act, a clearcut legislative victory for the Currency School; but this legislative victory was by no means accompanied by a cessation of discussion of monetary issues, nor did it ensure the subsequent intellectual dominance of the ideas of the Currency School. Monetary economics continued to develop, though more quietly, after the 1840s, and it was not until the 1870s that the "British Monetary Orthodoxy" to which the title of Fetter's celebrated book (1965) refers, was fully articulated.

The dominance of that orthodoxy, particularly in matters of economic theory, was shortlived. The next half century or so was to see a transformation of monetary economics which culminated in the Keynesian Revolution. It is the ultimate purpose of the study, of which this essay forms a part, to describe this transformation; but such a task cannot be attempted if we do not first of all have some idea of just what it was that was transformed. In this paper, therefore, I shall describe English Classical Monetary Economics as it stood in the 1870s, taking as my main sources three books of acknowledged authority: the 6th (1865) edition of J.S. Mill's Principles of Political Economy, Walter Bagehot's (1873) Lombard Street, and W.S. Jevons (1875) Money and the Mechanism of Exchange. Mill made certain substantial additions to his monetary analysis in the (1865) edition of the Principles and the (1871) edition, the last to appear during his lifetime, was essentially a reprint of this version. Bagehot's monograph is universally accepted to be the locus classicus of the theory of central banking which
dominated both academic and practical thought on such matters until 1914. Jevons' book, though not in itself very original was a widely read and much reprinted primer on monetary economics. These three books then, taken together, encompass orthodox Classical Monetary Economics.

II. THE QUANTITY THEORY OF MONEY

The centrepiece of Classical Monetary Economics was the Quantity Theory of Money. I make this assertion in full awareness that some modern commentators, notably Glasner (1985), have denied its validity. The difficulty here is that the Classical Quantity Theory was a rather different set of propositions to anything that nowadays bears the name. In particular it was in no sense a theory of the demand for money such as Friedman (1956) has analysed.¹ Nor was it just a theory, of the sort examined by Sargent and Wallace (1982) or Smith (1985), which always attributes variations in the general price level to exogenous variations in the stock of money; though this particular modern version of the theory does, at least, have a claim to be regarded as a special case of a much wider ranging body of Classical doctrine.

The differences between the Classical Quantity Theory and those modern analytic tools which bear the same name stem from an even more fundamental difference between Classical and modern monetary economics. Nowadays textbook expositions of monetary economics usually begin with statements to the effect that money is a "means of exchange", a "unit of account" and a "store of value", but the overwhelming emphasis in modern monetary theory is on money's role as a store of value; and the establishment of a proper individual choice theoretic framework for monetary economics, based on the notion that money is some form of capital asset, is taken, with very little dissent, to be the proper goal for research in the area.²
This was not so in the 1870s. Individual choice was not then conventionally regarded as the proper starting point for any kind of economic analysis, let alone monetary theory, and even such a selfconsciously revolutionary exponent of marginal utility theory as Jevons never thought to extend it to monetary economics. For him, as for everyone else, monetary theory was about The Mechanism of Exchange, and money's fundamental and distinguishing role in the economy was that of a means of exchange. Money has to be durable, and in this sense a store of value, in order to fulfill this primary function: acts of purchase and sale cannot be separated over time and space if it is not. Classical monetary economics recognised this, but the idea that money might be held as an asset independently of its role in the process of exchange was, with one significant exception to be discussed later, quite alien to it.  

The monetary economists of the 1870s were well aware of the importance of money's role as a unit of account, and understood that it did not need to be performed by the means of exchange itself. Schemes for "tabular standards" - indexed contracts using something other than money as their unit of account - had been current during the Napoleonic Wars, and Jevons in particular, who distinguished between the "unit of account" and "standard of deferred payment" functions of money was an ardent exponent of them in the 1870s. Nevertheless, the institutional fact of contracts denominated in terms of the means of exchange loomed large in Classical analysis, and largely accounts for the importance attached to price level stability by its exponents. It was a key proposition of Classical Economics that "the introduction of money does not interfere with the operation of any of the laws of value ..." (Mill, 1865, p. 488) and the real economy was usually analysed without direct reference to monetary mechanisms. Nevertheless computational costs that would arise in the absence of a common unit of account, not to mention the inconveniences of
barter, were regarded as an essentially impossible barrier to trade. A smoothly functioning monetary system was therefore recognised to be a sine qua non for economic development and the efficient operation of the real economy. The ultimate purpose of monetary theory, within the general corpus of Classical Economics, was, in keeping with its Utilitarian ethos, the solution of a policy problem, namely to enable monetary institutions so to be designed as to promote the efficient operation of the real economy. Price level instability disrupted money's efficient performance as a unit of account, and, inasmuch as it led to financial crises and panics, undermined its effectiveness as a means of exchange as well. Hence understanding the interaction of money and the price level was the central scientific problem for Classical Monetary Economics. The Quantity Theory of Money was the principal tool of analysis deployed in dealing with it. I have already remarked that this theory did not boil down to a proposition that an exogenously set quantity of money always determined the equilibrium value of that price level. The nature of the interaction here was understood to depend upon the nature of the monetary system.

The 18th and 19th centuries saw many experiments with inconvertible paper monies, and Classical monetary economics had a great deal to say about their methods of operation, not least that, under such arrangements, variations in the quantity of money did indeed cause variations in the price level. Even though, according to Jevons (1875). "There is plenty of evidence to prove that an inconvertible paper money, if carefully limited in quantity, can retain its full value" (p. 235), inconvertible paper money was regarded as
an aberration. It was an "abnormal phenomenon" as he (p. 191) put it, associated in particular (though not exclusively) with wartime finance.5

For Jevons, therefore, and for the Classical economists generally, the practical norm was a commodity based monetary system, with the liabilities of banks being convertible at a legally stipulated rate into gold or silver (or both). Under such an arrangement, the value of money was ultimately the value of the precious metals, and its determination was a special case of the general theory of relative prices. In turn, this meant that, subject to certain qualifications involving terms of trade effects, (See below pp. 30-31) the value of money, to put it in Mill's (1865 p. 488) words "is determined ... temporarily by demand and supply, permanently and on the average by cost of production". The relevant cost of production here was marginal cost, because the Classics viewed mining as a diminishing returns activity. (See, eg. Mill (1865) p. 502.)

There are difficulties here. We are accustomed to think, correctly, of money as a stock. Hence we must wonder about interactions among the size of the existing stock of precious metals, the proportion of that stock devoted to monetary uses, and the current rate of flow of output of specie, in the determination of its marginal production cost. In order to come to grips with such a set of questions we would find a Marshallian supply and demand apparatus modified to incorporate the stock-flow distinction indispensable. Though the supply and demand apparatus was available in the 1870s, it had not yet acquired the powerful simplicity that Marshall was to give it. Moreover the significance of the stock-flow distinction was not well understood. The difficulties to which I here allude were not, therefore, squarely addressed.
Rather, it was simply asserted that, in the long run, "the ultimate regulator"—the phrase is Mill's (1865, p. 499)—of the price level was the marginal production cost of the precious metals. It was also recognised that this cost of production, and therefore the equilibrium general price level, could be changed by the discovery of new and more cheaply worked sources of supply of gold or silver.

The effects on the price level of the discovery of new sources of the precious metals in New Spain had given a strong impetus to the development of the Quantity Theory in the 17th century, and their theoretical analysis had taken a recognisably Classical form as early as the 1730s with the work of Richard Cantillon. By the 1870s such effects had once more attracted considerable attention as the result of the gold discoveries of 1849–51. Both John Cairnes (see 1873) and Jevons (see 1884) devoted much time and effort to analysing the consequences of these discoveries. For them, the problem was first to show that the new discoveries had indeed caused an increase in the general price level, and secondly to trace out the mechanisms whereby this change was brought about.

The first of these tasks, to which Jevons in particular devoted himself, was by no means straightforward. In order to undertake it, he devised index numbers of the general commodity price level. He also carried out statistical analysis of the behaviour of the price level over the course of the cycle, as a preliminary to abstracting from such cyclical effects. Jevons concluded that significant increases in the prices of primary commodities, which he studied in great detail, had taken place; but, like Cairnes, he conceded that their influence on what we might now call "the cost of living" seemed to have
been swamped by productivity growth. The "Serious Fall in the Value of Gold" which Jevons established in 1863 (reprinted in 1884) was thus a fall relative to other primary commodities, and not a rise in consumer prices. All in all it is hard to resist the conclusion that the major long run effect of the mid-century gold discoveries was to halt a secular consumer price deflation rather than to generate what we would now call a consumer price inflation.  

There was no real disagreement among nineteenth century monetary economists that the long run equilibrium price level under specie convertibility was determined by the cost of producing the precious metals. There was, though, disagreement about short-run issues. It was the Classical Quantity Theory position that, in the case of a commodity based monetary system, changes in the quantity of money were required to move the price level towards its new equilibrium when gold discoveries disturbed it, and could play an active, though short run, role in moving the price level away from equilibrium when they were engineered by a banking system. At least in this latter case, on the other hand, it was the anti-Quantity Theory position, particularly associated with the Banking School, that under such a system the quantity of money was a purely passive variable which adjusted to the price level even in the short run.

The gold discoveries in California and Victoria provided empirical evidence about the short-run interaction of money and the price level. They led, beyond a doubt, to a sudden fall in the cost of producing gold. They were followed by a steady increase in the money prices of at least primary commodities, an increase which appeared to be proximately caused by the growing quantity of gold money coming into circulation as a result of mining
activities. The price level in a country such as Britain, could, it appeared as a result of this experience, deviate from its long run equilibrium time path for a considerable period of time. The factor which kept it away from this equilibrium was an initially "too low" quantity of money; and the forces which moved it towards this equilibrium were an increased rate of gold production, an initial disturbance of relative price levels between gold producing areas and the rest of the world, and subsequent balance of payments surpluses and money supply growth in the latter, not least Britain itself.

This causative sequence, which had first been postulated by Cantillon (1734), was thoroughly documented by Cairnes and Jevons, particularly the former, as having occurred in the 1850s. Thus the same theory of the nature of the relationship between money and prices which commanded virtually universal agreement in the case of inconvertible paper money - namely that money caused prices and not vice versa - had by the 1870s become accepted as holding in the case of convertible money as well at least in the short run. As Cairnes put it, in a passage quoted by Bordo (1975), p. 339-40

"The value of a circulating medium, convertible on demand into gold, of course, depends in the long run on the cost of obtaining it; but its value at any given time and the fluctuations in its value, are determined by the quantity which happens to be in circulation, compared with the functions it has to perform, and its efficiency in performing them: ..."

While Mill (1865) p. 504, having made just this point, explicitly concluded that "it would ... be an error both scientifically and practically, to discard the proposition which asserts a connection between the value of money and its quantity" when discussing the determination of the price level under a convertible currency.
David Hume's essays of 1752 on monetary issues are justly famous for the
elegance of their exposition of the fundamental propositions of Classical
Monetary Theory, but even half a century after he wrote, his analysis required
considerable extension in order to be applied to the sophisticated and rapidly
evolving monetary system of Great Britain. The difficulties created for the
simple Quantity Theory by institutional development in general, and the growth
of banking in particular, were partly analytic and partly semantic, but this
borderline was not always clearly delineated and consistently observed by its
exponents during the nineteenth century. There was much confusion about what
ought and ought not to be considered as "money", and about what such a choice
implied for the validity of the Quantity Theory.

Here it is helpful to recall the Classical Economists' insistence on the
central importance of money's role as a means of exchange to which I have
already referred above. Coin, and, as their use spread, bank notes
(convertible or not) clearly performed this function, and hence were usually
characterised as "money" or "currency", though the latter term was sometimes
reserved for coin alone. However, as a simple matter of fact, bank deposits
(and/or cheques drawn upon them) not to mention bills of exchange of various
sorts, also circulated, particularly in the wholesale trade, becoming
increasingly important from the late eighteenth century onwards. Though a
modern economist would have no great difficulty in incorporating at least some
of these instruments in a "broad" concept of "money", the Classical economists
chose to distinguish between the "circulating medium" and "money", usually,
though not always, using the former phrase to describe the broader aggregate.

The semantics of Classical Monetary Economics differ from ours in a way
well calculated to confuse the unwary reader, but substantive problems too
were created for the Quantity Theory by the growth of banking. During the debates of the 1830s and 1840s, the Currency School insisted that variations in the quantity of "money", defined as bank notes and coin, and "money" alone, were crucial to the behaviour of prices. They argued that an institutional framework which ensured that the quantity of this aggregate behaved appropriately would be sufficient to guarantee price stability. It might be tempting to defend this position by referring to the role of "money" thus narrowly defined as the base of an inverted credit pyramid, and by arguing that the Currency School understood this and were early supporters of treating "high powered money" as a strategic variable. However, it would be difficult to carry such a defense very far.

With the exception of those ruling with respect to the note issue after 1844, reserve ratios in 19th century Britain were at the discretion of individual institutions, and were subject to much variability. Moreover, the mechanism of the simple bank credit multiplier was not fully or widely understood. A more accurate interpretation of the Currency School position on this matter is Mill's (1865 p. 538), namely that they were misled by a purely semantic distinction between "money" and other components of the "circulating medium" into making a theoretical one; and that in arguing that "... bank notes and no other forms of credit, influence prices" (p. 539) they were simply wrong. Jevons expressed similar views in 1862 (reprinted 1884, p. 7.). By the 1870s, this particular aspect of Currency School doctrine was widely recognised to be erroneous. The Banking School view, that variations in other components of the circulating medium were also relevant, had become an almost uncontroversial part of Classical Monetary Economics.
The exponents of this view did not express it in the way that twentieth-century quantity theorists would: they did not systematically broaden their usage of the word "money" to encompass a wider range of instruments. Rather they wrote about the limited validity of simple versions of the Quantity Theory in the presence of a sophisticated financial system, and emphasised that variations in "credit" as well as "money" could and did affect prices. Thus Mill (1865) pp. 494-5, having stated that "... the amount of goods and of transactions being the same, the value of money is inversely as its quantity multiplied by what is called the rapidity of circulation" went on to warn his readers that

"When credit comes into play as a means of purchasing, distinct from money in hand, we shall hereafter find that the connection between prices and the amount of the circulating medium is much less direct and intimate, and that such connection as does exist no longer admits of so simple a mode of expression."

Sometimes the classical economists argued, as in this just quoted passage that the existence of credit, and variations in its quantity, would affect the relationship between prices and the quantity of money, (or of the circulating medium) and stressed that credit *per se*, as opposed to the type of instruments to which it gave rise was the key factor influencing prices. At other times they attributed differential effects on prices (and hence implicitly different velocities) to different credit instruments. The manner in which such ideas, about the extent to which the simple Quantity Theory had to be modified to deal with a sophisticated financial system, were expressed was thus sometimes confusing; but, by the 1870s, the confusion in question was much more nearly a matter of pure semantics than it had been two or three decades earlier.
The "rapidity of circulation" concept incorporated in Classical Monetary Economics was a transactions (as opposed to income) velocity idea. Discussions of its determinants, particularly in a secular context, went in terms of the technical and institutional characteristics of the trading system in general, and the financial system in particular, rather than referring to factors conditioning individual portfolio choices. It is normal to think of the transactions velocity approach to the Quantity Theory as leading to the view that velocity is rather stable over time and that large variations in the price level require large variations in the quantity of money if they are to occur. After all, the nature of communications, and the structure of the banking system, are not factors which themselves change rapidly. Classical quantity theorists, however, emphatically did not espouse the notion that velocity was an empirically stable parameter in this sense.

The distinction between the Equation of Exchange as an organising device for discussions of the determination of the price level, and the Quantity Theory of Money as an hypothesis about which of the variables in that equation predominantly causes which, was not current in the 1870s. Classical monetary economists unself-consciously slipped back and forth between these two very different analytic devices. Furthermore, the emphasis in their work was not so much on the secular as on the cyclical interaction of money and prices. They stressed, not the role of a given institutional structure in stabilising velocity in the long run and hence in tying down the price level to the quantity of money, but rather the short run scope for prices to vary independently of the quantity of money which that structure provided. This emphasis was central to their analysis of the "Credit Cycle", so called, as we shall now see.
III. THE CYCLE

The financial crisis of 1825 was the first in a series of such events that recurred at 10-11 year intervals for the rest of the century. These crises were associated with fluctuations in the levels both of prices and of real economic activity. Though their occurrence was clearly perceived and much commented on from the outset, their regularity only revealed itself gradually to contemporary observers, while the fact that real as well as financial fluctuations were integral to them was even more slowly discerned. Thus, during the 19th century, a theory of financial crises in due course evolved into a theory of the credit cycle, and eventually into a theory of the business cycle. The evolution here was not, however, quite as orderly as this summary might suggest. Mill, from his earliest writings onwards, showed an awareness that the cycle involved fluctuations in real variables. (See Hollander (1986), pp. 501-502) while Jevons and his associates in the Manchester Statistical Society were also well aware of the existence of a real cycle by the 1860s.

Marx, (whose connections through his friend Engels with Manchester are surely significant in this context) went much further than did any representative of Classical orthodoxy. As is well known, he claimed that fluctuations in real economic activity were a regular and inherent feature of capitalist growth.\(^{10}\) His jibe that

"The superficiality of political economy shows itself in the fact that it looks upon the expansion and contraction of credit, which is a mere symptom of the periodic changes of the industrial cycle, as their cause." (1867, p. 633)

is surely more justified than many similar attacks which he launched on Classical Economics. Notwithstanding the qualifications noted above, its exponents did place much more emphasis upon the financial aspects of the cycle
that upon its real characteristics even as late as the 1870s. Classical Monetary Theory dealt with a "credit cycle", rather than a "business cycle", and stressed price fluctuations as its dominant endogenous characteristic. Output fluctuations, though discussed, were not systematically integrated into orthodox analysis of the cycle until Marshall did so in 1887 (reprinted 1925, 1966). As we shall now see, Classical Theory also paid particular attention to the "crisis" phase of the cycle or, as we would now put it, the upper turning point.

The prelude to financial crises seemed to Classical Economists to involve the banking system expanding its note issue, and indeed credit generally, thereby contributing to speculative activity in financial and commodity markets. Their actual occurrence was attributed to a drain of specie from the banking system, both abroad as a result of an adverse trade balance, and at home. As Bagehot put it

"... periods of internal panic and external demand for bullion commonly occur together. The foreign drain empties the Bank till, and that emptiness, and the resulting rise in the rate of discount, tend to frighten the market" (1873, p. 27).

In the resulting crisis, market participants sought to rid themselves of speculative inventories of commodities and financial assets whose convertibility into specie seemed to be at risk. Such a crisis could degenerate into a panic which threatened the convertibility of banking system liabilities into Bank of England liabilities, and Bank of England liabilities into specie; but further credit contraction undertaken to counter this threat not only exacerbated it, but also led to much commercial distress, and many outright business failures.

The Currency School-Banking School debate, which culminated in the 1844 Bank Act, was in large measure about the causes of this sequence of events.
Before 1844 the Bank of England was not subject to any fixed gold reserve ratio against its note issue, and Country and Scottish Banks were free to issue notes in quantities limited only by the public's willingness to keep them in circulation. According to the Currency School, whatever gave the cycle's upswing its initial impetus, the subsequent issue of notes, permitted by these arrangements, exacerbated the boom, drove up domestic prices, and precipitated a drain of gold abroad. Such a state of affairs could persist long enough to create a financial crisis because the convertibility of bank notes into gold was not sufficient to guarantee that their quantity would begin to shrink in harmony with the country's gold stock when the first consequences of "overissue" manifested themselves. The Banking School, on the other hand, treated the quantity of money (however defined) as a passive variable even in the short run. They attributed the onset of gold outflows to such exogenous events as bad harvests, and the subsequent panic to inadequate specie reserves.

A cure for crises was implicit in the Currency School's analysis, namely to prevent the preceding boom. This was to be accomplished by depriving the Country Banks (and the Scottish Banks) of their note issuing rights, and by requiring the Bank of England to hold 100% gold reserves against its notes over a fixed maximum fiduciary issue. In this way, any incipient tendency of the note issue to rise excessively would be automatically and immediately checked as gold began to leave the country and notes were immediately withdrawn from circulation. Any boom, accompanied and/or caused by "excessive money creation" on the part of the banks, would always be nipped in the bud, while the gold convertibility of paper money would be guaranteed. Crises, like those of 1825 and 1836 would thus be forstalled and rendered things of the past.

It has already been remarked that the Currency School's notion that only money as they defined it could affect prices had been thoroughly discredited
by 1870. It was empirical evidence as much as any theoretical arguments that had done so. The Bank Charter Act of 1844 went a good way towards embodying the Currency School's proposals for control of the note issue. Their suggestions for regulating the Bank of England issue were implemented, while the Country Bank Note issue was frozen. A separate Act of 1845 put the Scottish Note issue on a 100% marginal reserve requirement. Moreover, the 1844 act also established a separate unregulated Banking Department at the Bank of England to run its deposit business. Nevertheless, despite the fact that these measures ensured that the note issue varied in lock step with the country's specie reserves, financial crises occurred 1847, 1857 and 1866. They had all the important characteristics of their predecessors save one, namely that the convertibility of Bank of England notes into specie was no longer in question. However, on each occasion, the convertibility of the Bank of England's deposit liabilities, which themselves played the role of the reserve base of the rest of the banking system, into notes (and hence into specie) was at risk. The Bank, not to mention the rest of the financial system, was saved from collapse in each case only by the suspension of the 100% marginal reserve requirement against its note issue.

By the 1870s financial crises had been recognized to be a feature of a regular cycle, rather than simply random events, and the Currency School's analysis of them was widely understood to be inadequate. However, the extreme Banking School view that the financial system played an essentially passive role in their generation had also been given up. Instead the expansion and contraction of bank credit (as well as trade credit), which generated price fluctuations independently of the behaviour of the quantity of "money", had been identified as a crucial mechanism in propagating the cycle.11

Nevertheless, and particularly by modern standards, Mill's quite representative account of the credit cycle would better be characterised as a description of the phenomenon than as an explanation of it.
"Some accident which excites expectation of rising prices ... sets speculation at work in several leading departments at once. The prices rise, and the holders realise, or appear to have the power of realising, great gains ... At periods of this kind a great extension of credit takes place. Not only do all whom the contagion reaches employ their credit much more freely than usual; but they really have more credit, because they seem to be making unusual gains, and because a generally reckless and adventurous feeling prevails, which disposes people to give as well as take credit more largely than at other times, and give it to persons not entitled to it ... When ... the reaction comes and prices begin to fall, though at first perhaps only through the desire of holders to realise, speculative purchases cease: but were this all, prices would only fall to the level from which they rose, or to that which is justified by the state of consumption and of the supply. They fall, however, much lower; for as, when prices were rising and everybody apparently making a fortune, it was easy to obtain almost any amount of credit, so now, when everybody seems to be losing, and many fail entirely, it is with difficulty that firms of known solidity can obtain even the credit to which they are accustomed ... There is superadded, in extreme cases, a panic as unreasoning as the previous over-confidence; ... Thus general prices, during a commercial revulsion, fall as much below the usual level as during the previous period of speculation they have risen above it: the fall, as well as the rise, originating not in anything affecting money, but in the state of credit ..."

(1865) pp. 527-8.

Here Mill makes much of the role of speculation, particularly in commodity markets, in giving an impetus to credit expansion during the boom. He offers no general explanation of the incentives towards such speculation however; nor does he systematically investigate the mechanisms generating what we might now call the upper turning point of the cycle. Elsewhere in the Principles... Mill does refer to the possibility of an external drain of specie exacerbating the severity of the crisis (see Hollander (1986), p. 571), though does not lay as much emphasis on this mechanism as did Bagehot (see p. 15 above) or Jevons. These two recognised an adverse trade balance, financed
by a drain of specie abroad, as a crucial factor at work in precipitating financial crisis, as indeed had the Currency School in the debates of the 1830s and 40s. Jevons' words are quite representative of the orthodox position on this issue as it had evolved by the mid-1870s.

"... the rise of prices thus produced turns the foreign exchanges against the country, and creates a balance of indebtedness which must be paid in gold. The basis of the whole fabric of credit slips away, and produces that sudden collapse known as a commercial crisis" (1875) pp. 315-16.

One aspect of Mill's treatment of the cycle is of considerable theoretical interest. It involves an insight which, as Hollander (1979, pp. 491-495) has pointed out, occurs in the writings of J. B. Say, and, as Becker and Baumol (1952) note, also appears with some frequency from the 1880s onwards. However, it does not appear in the writings of Mill's contemporaries, and he deserves great credit for preserving and transmitting to his successors. The insight in question concerns the possibility of a "general glut" of commodities occurring. The cycle, specifically its upper turning point, is the context in which he set it out. Mill's first discussion of this question occurs in his 1829 (but not published until 1844) essay "On the Influence of Consumption upon Production", but (contrary to many assertions to the contrary) it is also explicitly incorporated in his Principles...

Like all orthodox classical economists, Mill denied Malthus' assertion that the process of growth in a capitalist economy could break down as a result of oversaving. In long run analysis he firmly adhered to the view that "supply creates its own demand" and denied that a general oversupply of everything to be traded was possible. However, and crucially different from any economist who viewed money solely and always as a means of exchange,
Mill recognised in this context the logical possibility of agents wishing to acquire cash balances in order to hold them, rather than to spend them on goods. Furthermore, he argued that, while agents sought to accumulate cash, there would indeed be a general oversupply of commodities other than money. Now agents would only wish to accumulate money per se if they wished to hold it as an asset, and such a possibility could, according to Mill, arise as a short-lived phenomenon during a financial crisis.

"...persons in general, at that particular time, from a sudden expectation of being called upon to meet sudden demands, [like] better to possess money than any other commodity. Money, consequently, [is] in request, and all other commodities [are] in comparative disrepute." (1844, p. 72).

Such behaviour would mean that, a temporary, but nevertheless general oversupply of commodities would accompany a financial crisis. In Mill's own words, as they appear in the Principles...

"I have already described the state of the markets for commodities which accompanies ... a commercial crisis. At such times there is really an excess of all commodities above the money demand: in other words, there is an undersupply of money ..." (1865 p. 561.)

However, he also warned his readers,

"...it is a great error to suppose ... that a commercial crisis is the effect of a general excess of production. It is simply the consequence of an excess of speculative purchases ... its immediate cause is a contraction of credit, and the remedy is, not a diminution of supply, but the restoration of confidence (1865 p. 561).

The only "general glut" that Mill countenanced was thus a short-term one in organised commodity markets. The idea that a general excess demand for money might be related to an excess supply of current output, let alone of labour, was as alien to him as to any other Classical economist.
Even so, the presence of this admittedly narrowly focussed analysis of Mill's in his *magnum opus*, as well as in a youthful essay, does mean that later analysis of the role of monetary factors in the business cycle such as, for example, that of Marshall (1887), which clearly builds on Mill's insights, has roots in Classical Economics. It also implies that the notion of a demand for money as an asset was not entirely absent from Classical theory; although the fact that Mill viewed such an asset demand as a temporary phenomenon, arising only at times of financial crisis, does mean that the notion was peripheral to his version of the Quantity Theory of Money.

IV. MONEY, THE INTEREST RATE AND FORCED SAVINGS

Mill's analysis of the role of a short-term asset demand for money in generating a temporary glut of commodities during the crisis phase of the cycle was not itself central to Classical Monetary Economics. It does, however, provide a convenient point from which to view one important feature of that body of doctrine, namely its conception of the supply and demand mechanism whereby monetary changes had their effects on prices. We have seen that a desire to accumulate a stock of cash might, according to Mill, lead agents in the aggregate temporarily to cut down their flow of money expenditures, and hence to reduce the flow demand for goods. This particular insight is unique to Mill among his contemporaries, but a general emphasis on flows of money expenditure in the analysis of the interaction of money, prices, and real variables is ubiquitous in Classical Monetary Economics.

When Classical monetary economists argued that the general level of prices was determined by supply and demand, they were not referring, as
would a modern economist, to the interaction of a stock supply of nominal money with a stock demand for real balances. They were referring, to put it in modern vocabulary, to the interaction of a flow of money expenditures - MV - and a flow of goods offered for sale - T rather than Y - and arguing that prices - P - had to move in order to reconcile these two largely independently determined flows. This version of a supply and demand for money mechanism persists in the writings of certain neo-Classical writers also, notably Lavington (1921), where it is presented in uneasy company with a Marshallian cash balance version of the Quantity Theory. Mill describes the mechanism in question in the following terms:

"As the whole of the goods in the market compose the demand for money, so the whole of the money constitutes the demand for goods. The money and the goods are seeking each other for the purpose of being exchanged. They are reciprocally supply and demand to one another" (1865, p.491).

To think about price level determination in this way had several important consequences for Classical Monetary Economics, which set it apart from most modern analysis. 14

To begin with, and as we have already seen, exponents of the Classical Quantity Theory were far more likely than their modern successors to treat changes in velocity as autonomous sources of price level variations in their own right. Although from the early eighteenth century onwards, just about everyone who wrote about the Quantity Theory argued that a change in the quantity of money would lead to a proportionate change in prices, the argument was usually accompanied by the explicit qualification that this prediction depended upon the assumption of a constant velocity of circulation, and the warning that this assumption did not usually hold in the real world. As we
have noted (fn 9 above) Mill went so far as to define the quantity of money relevant to the quantity theory as notes and coin in active circulation, excluding "hoards" of such assets from the relevant aggregate; and we have also seen how keenly aware were he and his contemporaries of the presence of other assets in the circulating medium, and the role of "credit" in determining prices. Indeed, Mill's occasional confusion concerning the roles of money and credit in determining the price level, noted above, (p. 12 and fn. 8), also probably stems from this emphasis on flows of expenditure. Credit, after all, permits goods to be traded without money simultaneously flowing from buyer to seller.

A further, closely related, consequence of this Classical view of the interaction of money and prices was the belief of virtually all of its exponents that an injection of money into the economy would have significantly different real consequences depending upon the particular markets through which it first came into the hands of the public. As Hayek (1932) showed, this general point was clearly present in the work of Cantillon (1734), Thornton (1802), and Malthus (1811) among others; but Cairnes and Mill did add details to the story, in particular concerning the influence of monetary expansion and contraction on the rate of interest, details which were to be of great importance for the later evolution of monetary economics. ¹⁵

It was an article of faith in Classical economics that, in the long run, interest was a real economic variable:

"... the natural rate ... about which the market rate oscillates ... partly depends upon the amount of accumulation going on in the hands of persons who cannot themselves attend to the employment of their savings,
and partly on the comparative taste existing in the community for the active pursuits of industry, or for the leisure, ease, and independence of an annuitant" (Mill 1865 p. 638).

Cairnes and Mill, like many of their Classical predecessors, sought to explain not just the natural interest rate, but also the above-mentioned oscillations. They noted that Britain, not being a gold producer, received its share of newly mined gold through the balance of payments. They further noted that such gold inflows increased the banking system's reserves and generated domestic money as an accompaniment to an expansion of bank credit. They argued that, because "...the rate of interest will...equalize the demand for loans with the supply of them..." (Mill 1865 p. 637) this flow of new money into credit markets would serve to raise the prices of credit instruments and lower the rate of interest even if nothing happened to the economy's underlying saving rate.

"The same operation...which adds to the currency also adds to the loans: the whole increase of currency in the first instance swells the loan market...it tends to lower interest...." (Mill 1865 p. 646).

By the 1870s, Classical Economics had thus evolved a fully developed loanable funds, as opposed to "productivity and thrift" theory of interest, but the analysis did not stop there. Cairnes and Mill understood that the flow supply of bank credit would run ahead of voluntary saving for as long as new money was entering circulation through the banking system. This newly created money, placed in the hands of investors by the banks, would, at least in the all important first round, enable them to bid resources away from consumers, thereby generating "forced saving". Hence capital accumulation at an increased rate would accompany monetary expansion. 16
It is easy to read into Classical analysis of these matters more than is actually there. To Kohn (1985) it seems to prefigure certain insights of the literature on "Money and Growth" of the 1960s and 70s; but the Classical economists were not here discussing long run super-neutralities and non-neutralities. The idea of a continuous and fully anticipated inflation, which is central to this modern literature, was quite alien to their analysis, which dealt with non-neutralities arising during periods of transition from one equilibrium price level to another. Moreover, though it would not be quite correct to argue that Mill was ignorant of the effects of anticipated inflation on nominal interest rates, neither he nor any other economist of the 1870s incorporated such insights as they had about this matter into the heart of their analysis. The effects of anticipated inflation on the demand for assets are, however, a sine qua non of the modern analysis in question.

If we must be careful not to attribute to Cairnes, Mill or any other Classical economist even an embryo theory about the long run super-neutrality (or non-neutrality) of money, we must also avoid the more modest suggestion that they envisaged a theory of the business cycle in which forced saving plays a key role during the upswing. They did not relate their analysis of this phenomenon to the "credit cycle". By the 1870s Classical economists had most of the ingredients necessary for the creation of a theory of the cycle which stressed fluctuations in fixed capital formation as its key "real" feature. However, even in the hands of Wicksell (1898), who greatly extended and refined the Cairnes-Mill insights into the effects of money creation on the interest rate, these remained a component of an analysis of secular price
level changes. It was only later, with Mises and Hayek in Austria, and Robbins and Robertson in England, that forced saving came to be placed in an explicitly cyclical context. Furthermore, though the effects of credit creation on the prices of storable commodities certainly played a key role in Classical analysis of the cycle, which could have been expanded into a systematic theory which stressed fluctuations in the quantities as well as prices of inventories, it was not. This development had to await the work of Hawtrey.

V. THE INTERNATIONAL DIMENSION AND THE MONETARY STANDARD

Nowadays monetary theory usually starts with the assumption of a closed economy, but this characteristic is a relatively recent innovation, stemming from two sources: Keynes' use of the closed economy assumption in the General Theory, and the growing dominance of American writers in the macroeconomics literature after the Second World War. It will already be apparent that English Classical economists took an open economy for granted: a theory of the balance of payments was an integral part of their monetary economics, and had been since the days of Cantillon and Hume, whose price-specie-flow mechanism, so called, formed the starting point for virtually all subsequent work on this matter.

According to Hume (1752) the mechanism in question operated to ensure that, under a commodity currency shared with the rest of the world, or a significant part of it, the domestic supply of money and price level would be endogenously and simultaneously determined. "Too large" a domestic supply of the precious metals in circulation would temporarily cause "too high" a domestic price level, in the well defined sense that a balance of trade
deficit and a gold outflow would occur. The money supply would therefore automatically contract until domestic prices had fallen sufficiently to restore and then maintain balance of trade equilibrium. By the 1870s, and indeed long before then, this Humean analysis had been extended to accommodate paper money and a banking system, not to mention the influence of autonomous capital movements on the balance of payments; its implications for the behaviour of the exchange rate of an inconvertible paper money had also been thoroughly explored.

The first extension of Classical monetary analysis to accommodate paper money was the work of Adam Smith, and his insights were refined and consolidated during the Bullionist Controversy, notably by Henry Thornton and David Ricardo, into a form which Mill was still expounding in the 6th (1865) edition of his Principles. Starting from an equilibrium situation, paper money issued domestically (and indeed other forms of paper and book credit too) would tend to raise domestic prices and lead to a balance of payments deficit, just as would an increase in a metallic currency. Paper was not acceptable abroad and specie was. Paper would therefore replace specie in domestic circulation without affecting the long run equilibrium domestic price level, except to the extent that the addition of paper in one country to a world-wide circulation raised world-wide prices; but, according to Mill (1865) p. 632, "This effect ...would be too trifling to require notice except for the illustration of a principle ...".

Provided that convertibility, and confidence in convertibility, were maintained, the replacement of gold with paper was, according to the Classics, beneficial because it economised on real resources in the provision of a circulating medium. In Mill's words,
"The substitution ... of paper for the precious metals, should always be carried as far as is consistent with safety; no greater amount of metallic currency being retained than is necessary to maintain, both in fact and in public belief, the convertibility of the paper." (1865) p. 633.

The extent to which price level fluctuations, as opposed to not very well articulated direct real balance effects, were stressed in the mechanisms at work as paper drove gold abroad varied from writer to writer. Adam Smith, with his notion of a fixed "channel of circulation" that tended to "overflow" when more money was poured into it, certainly ignored price level effects, and may, without doing too much violence to his text, be interpreted as relying on a real balance effect to generate a trade imbalance. In this he was later followed by Banking School writers. Ricardo, on the other hand, and the Currency School after him, focused on price level variations as an essential link in the mechanism. Cairnes and Jevons, as we have seen, had identified price level effects as critical in their empirical studies of the consequences of the mid-century gold discoveries. As to Mill, he found room for both price level and direct real balance effects in his analysis, but stressed the former.

The mechanisms which we have discussed so far involve trade flows only, and indeed, trade balance questions dominate the Classical literature on balance of payments issues. Mill's "equation of international demand" stated that

"The produce of a country exchanges for the produce of other countries, at such values as are required in order that the whole of her exports may exactly pay for the whole of her imports" (p. 592),

and thus identified trade balance equilibrium with balance of payments equilibrium. Before flows of British investment to North and South America
became a matter for discussion in the 1870s, capital movements tended to be associated with once and for all payments of subsidies to allies, or of reparations to victorious enemies, or to involve the temporary financing of trade imbalances associated with bad harvests. Hence, though capital movements were analysed in Classical Economics, they were treated as complicating factors of temporary duration.

Autonomous capital movements had first attracted serious attention in the context of Britain's payments of subsidies to her continental allies during the French Wars. Adam Smith's earlier, correct but incomplete, insight that such transfers ultimately involved a movement of goods rather than of specie, was the starting point of what was to become the orthodox Classical theory of the transfer mechanism. This mechanism involved, as a first step, international movements of money which had incipient effects on price levels and the exchanges, as well as real balance and income effects on the supply and demand for goods in the countries involved. These effects, in turn, provided incentives for goods to begin to move internationally to complete the transfer. As with the analysis of paper money and the balance of payments, different writers stressed different aspects of this general framework; and here too Mill, building particularly and explicitly upon Thornton's work, provided his readers with a comprehensive account of the transfer mechanism which paid due attention to all of the above mentioned elements.²²

Though much of Mill's writing on international monetary matters, like that of all his contemporaries, summarised inherited wisdom, he did add insights of his own to this area, notably in working out the effects, on the balance of payments, money, and prices, of increases in labour productivity
and of shifts in the pattern of world demand for various goods. He recognised
the essential similarity of these two cases arguing that, in either instance,
a tendency towards a balance of payments surplus in the country benefitting
from either change would lead to equilibrating increases in domestic money and
prices. According to Mill it was an error to suppose that

"... the value of money, in countries where it is an
imported commodity, must be entirely regulated by its
value in the countries which produce it; ... On the
contrary, any circumstance which disturbs the equation
of international demand with respect to a particular
country, not only may, but must, affect the value of
money in that country ... The opening of a new branch
of export trade from England ... and all other events
of similar tendency, would make the imports of England
(bullion and other things taken together) no longer an
equivalent for the exports; and [other] countries ...would be obliged to offer their commodities, and
bullion among the rest, on cheaper terms, in order to
re-establish the equation of demand: and thus England
would obtain money cheaper, and would acquire a
generally higher range of prices" (pp. 610-611).

Finally, it should be noted that Mill understood and clearly stated
that, under inconvertible money, exchange rate movements would replace specie
flows and domestic price level adjustments as equilibrating mechanisms. He
pointed out that

"... a depreciation of the [inconvertible] currency
does not affect the foreign trade of the country: ...
But though the trade is not affected, the exchanges
are ... In such cases, instead of saying that the
exchange is unfavourable, it would be a more correct
representation to say that the par has altered ..."
(p.635).

Like everything else in Classical monetary theory, balance of payments
analysis dealt with what we would now call full employment situations. This
characteristic to some extent justifies the claims of contemporary exponents
of the "Monetary Approach to Balance of Payments Theory" to be reviving a
longstanding analytic tradition in the area. Even so, in drawing attention to similarities between Classical analysis and the modern Monetary Approach we should not overlook some important differences.

First, for all the contributions which they made to the analysis of transfers, the Classical Economists, unlike exponents of the Monetary Approach, put trade flows rather than capital flows at the centre of their analysis. Second, they treated the velocity of circulation of money neither as a constant, nor as a stable function of a few arguments. Hence the basic propositions of the Monetary Approach about the relationship between domestic credit expansion and the balance of payments, to the extent that they have parallels in the literature of the 1870s find them in the context of "ceteris paribus" conceptual experiments, and not in discussions of the properties of real world economies. Finally, the institutional norm in Classical international monetary economics was a commodity based monetary system; and "specie convertibility" was by no means synonymous with being on the international gold standard. Hence, as we shall now see, the international institutional background of Classical balance of payments theory was somewhat removed from the key currency system under which the "Monetary Approach" evolved.

Well into the 19th century, silver was at least as widely used a monetary metal as gold. Britain, whose adherence to a de facto gold standard since the early eighteenth century had finally been sanctioned by an Act of Parliament in 1816, was something of an exceptional case, and indeed many obscurities in the 19th century British monetary literature, particularly that of the Bullionist Controversy, stem from the fact that, at times of monetary
disturbance, not just the sterling price of gold, but the gold price of silver were fluctuating; and contributors to policy debates had to deal with these complications. Such matters were much less important in the thirty years after 1820, but they arose again with a vengeance in the 1850s when the gold discoveries disturbed the relative price of gold and silver. Then, countries such as France, de jure bimetallic, but in the first half of the century de facto on a silver standard, shifted rapidly to a de facto gold standard as a longstanding relative overvaluation of silver at their mints was transformed into an over-valuation of gold. This interaction of institutions with events generated, from the 1850s onwards much discussion of the mechanics of bimetallism, discussion which has no close parallel in literature of the Monetary Approach.

Now bimetallism was not a brand new topic of debate in the 1850s and 1860s. Britain's adoption of the gold standard in the 18th century was the accidental outcome of an attempt to place her currency on a bimetallic basis at an inappropriate, fixed, relative mint price for the metals. Moreover, Gresham's Law, the proposition that, in such circumstances, a metal overvalued at the mint - "bad" money - would drive an undervalued one - "good" money - from circulation, had been understood since the 16th century. Nevertheless, the 1850s and 1860s saw much refinement of this old insight, not least at the hands of Michel Chevalier who used it to explain the "parachute effect" which had prevented a rapid inflation ensuing from the gold discoveries of the period. He saw that the value of gold was prevented from falling continuously as its quantity increased by the fact that, instead of swelling the money supplies of existing gold using countries, newly mined gold first replaced
silver in circulation in nominally bimetallic nations such as France, where the relative mint prices of gold and silver were fixed.

Chevalier had failed to note, in Jevons' (1863, reprinted 1884) words, that "The French currency may and does prevent gold from falling much below its old relative value to silver, but it cannot prevent both gold and silver falling in value" (p.60) (Jevons' italics). This point had previously been made by Cairnes in an essay dealing with Chevalier's ideas (1860, reprinted 1873). Like Jevons he was able to document a general rise in prices, whether measured in silver or gold, in the wake of the gold discoveries. Even so, as a matter of fact, in the 1850s and 60s the "parachute" was rather effective against specie inflation in general; Chevalier had predicted a rapid inflation once silver had been driven out of the French Monetary system, but he was wrong here too, because, as Cairnes and Jevons both saw, silver displaced by gold in Europe was absorbed by silver standard countries such as India and China without a large fall in its value. The amount of silver displaced from Europe was rather small relative to already existing stocks in the East, and, as Cairnes (1860, reprinted 1873, pp. 92-96) noted, the absence of a well developed banking system there precluded the possibility of a multiple expansion of bank credit on a silver reserve base taking place.

The stabilising effect that the existence of bimetallic arrangements no doubt had on prices in the 1850s gave a considerable impetus to proposals for reforming the monetary systems of a number of countries, not least the United States, by putting them on a bimetallic basis. The argument here, which remained popular up to the beginning of the First World War, was that a bimetallic system would provide a more stable price level than a monometallic
one based on either silver or gold alone, because the "parachute" would begin
to work whenever the value of either metal was disturbed by the discovery of
new sources of supply.

The fundamental fallacy of this position was fully exposed by Jevons in
1881 (reprinted 1884)

"... it is indispensable to remember the fact ... that
the values of gold and silver are ultimately governed,
like those of all other commodities, by the cost of
production. Unless clear reasons, then, can be shown
why silver should be more constant in its
circumstances of production than gold, there is no
ground for thinking that a bimetallic gold and silver
money will afford a more steady standard of value than
gold alone" (p.318.)

This argument did not, however, make any noticeable impact on the advocates of
bimetallism, and Irving Fisher (1911) found it desirable to reiterate it in
his discussion of what was still, in 1911, something of a live debate.25
Nevertheless, it remains the case that all analysis relevant to subsequent
debates about bimetallism was already an integral part of Classical
monetary theory by the end of the 1870s.

VI. THE THEORY OF MONETARY POLICY

Just as surely as did orthodox defenses of the status quo, proposals for
bimetallism reflected the over-riding concern with achieving price level
stability which, as we noted earlier, marked the monetary economics of the
1870s. The explicit inflationism which had characterised the proposals of the
Birmingham School in the earlier part of the 19th century, and which would
soon inform American proposals for the free coinage of silver, was at a low
ebb at this time, as was the not unrelated view that monetary measures could
be taken actively to promote a high and rising level of real economic
activity. Concern with price stability arose in two contexts for the Classical economists, one secular and the other cyclical.

As with any other policy problem, the Classical economists, being good Utilitarians, sought their solutions primarily in the design of institutions within which market mechanisms could function, rather than in the creation of principles to govern discretionary behaviour on the part of some policy authority. Nevertheless, by the 1870s, their confidence in an institutional solution to the problem of price stability was greater in a secular context than a cyclical one. The Bank Charter Act had been intended to deal with both problems in such terms, but by the 1870s, it was accepted that suitable discretionary conduct on the part of the Bank of England, within the institutional framework created by that Act, was required to deal with cyclical problems.

For any Quantity Theorist, a necessary condition for control over the general price level is control over the money supply, and Jevons' views on this matter were completely representative of Classical opinion in general. In 1875 he listed no fewer than 14 methods whereby a paper currency, by the 1870s an accepted institution, could be regulated. He conceded that, in principle, inconvertible paper could be manipulated so as to maintain price level stability, and that such a system had indeed delivered more or less desirable price level behaviour in a number of historical instances. He was far from recommending such an arrangement, though, because he feared that unpredictable fluctuations in velocity would make the business of managing inconvertible paper difficult; although he did note that such technical problems could be overcome by managing an inconvertible currency so as to stabilise the exchange rate, or the market price of the precious metals.
However, "The great temptation which it offers to overissue and consequent depreciation" (1875, p. 229) was the primary basis of Jevons' objection to inconvertible paper. Mill opposed it in similar terms.

All variations in the value of the circulating medium are mischievous: they disturb existing contracts and expectations, and the liability to such changes renders every pecuniary engagement of long date entirely precarious. (Mill 1865, p. 544)

The power which inconvertibility gave to the issuers of money to "... add to it indefinitely, lowering its value and raising prices ... is ... in whomsoever vested, ... an intolerable evil", particularly so when vested in governments, who "...always have a direct interest in lowering the value of the currency, because it is the medium in which their own debts are computed" (1865 p.544).

In order to prevent such abuses then, commodity convertibility was, for Classical Monetary Economics, a sine qua non of a sound monetary system. By the 1870s the commodity overwhelmingly favoured here was gold, despite the fact that the experiences of the 1850s and 1860s had rendered untenable the easy identification of a constant price of paper money in terms of gold with a constant purchasing power of such money over goods in general; and despite the fact that, if forced to choose, it was the latter kind of constancy that the Classical economists favoured. Without systematically arguing the reasons for their position, they particularly feared a falling value of money. Redistribution of wealth away from frugal creditors was apparently regarded as particularly reprehensible, and, although Jevons (1863, reprinted 1884, p. 96) for example, was willing to agree that a lightening of the burden of debt in the economy might be conducive to economic growth, that was not sufficient reason for him to soften his opposition to inflation.
As we have noted earlier, there was considerable doubt about how serious the wealth redistributions brought about in the 1850s and 1860s by fluctuations in the purchasing power of gold had in fact been, and about how pressing a policy problem such redistributions might present in the future. Jevons, with his proposals that government regularly compute and publish price level measures, a "tabular standard", to which private parties could voluntarily index contracts, showed much more concern about this matter than did most of his contemporaries. On the whole, despite the experience of the 1850s and 60s, maintenance of gold convertibility was regarded as an adequate institutional defense of long run stability in the purchasing power of money. Though worries about secularly falling prices were soon to come to the fore as the deflation of what was once known as the "Great Depression" gathered momentum in the 1880s, these were not evident in the literature of the 1870s.

Even Jevons' doubts about gold convertibility only extended to its sufficiency as a guarantee of a sound monetary system. Its necessity (or at least great desirability) was as strongly accepted by him as by anyone, and he expressed considerable satisfaction about the "unmistakable tendency to the adoption of gold as the measure of value, and the sole principal medium of exchange" among the "principal nations" (1875, p.144) that was then underway. Indeed, Jevons devoted a good deal of energy towards helping this process along. He actively supported proposals for establishing a common European gold currency based upon the French 25 franc piece, proposals which he defended with reference to the promotion of efficiency in international transactions, and which were linked to a scheme for decimalising the British currency. His support for a "tabular standard" should be seen in the context of these other proposals, and as reflecting a desire to make a gold
based monetary system more efficient, not a wish to replace it.

The Classical economists of the 1870s, concerned as they were with promoting price level stability, defended the Bank Charter Act, and were just as opposed to "free banking" in the sense of an unregulated competitive note issue, as had been the Act's architects. However, they took an altogether narrower and more modest view of its importance than had their predecessors. 28 Bagehot's (1873) judgement that the Act was "... only a subordinate matter in the Money Market ... the phenomena connected with it... magnified into greater relative importance than they at all deserve" (pp. 1-2) would have deeply disappointed its creators. Their aim had been nothing less than to eliminate financial crises by putting a stop to the fluctuations of the "money supply" (that is bank notes) originating in bank lending, without at the same time violating laissez-faire principles in the organisation of credit markets. These fluctuations were, as we have seen, blamed for generating the "credit cycle" in general and financial crises in particular.

The intellectual basis of the Bank Charter Act was flawed. Not only did it attribute altogether too great an importance to the note issue per se in the monetary system; it also envisaged no unique role for the Banking Department of the Bank of England in the financial system. The separation of the Issue Department from the Banking Department of the Bank was intended to confer upon the latter the status of just another, albeit large, deposit bank with no special responsibilities beyond those to its shareholders. The hundred per cent marginal gold reserve requirement against notes, on the other hand, left no room for discretionary activity at all to the Issue Department, and removing as it did any real possibility that a financial crisis would make
notes inconvertible, was intended to render it unnecessary that the Bank play a lender of last resort role in the monetary system.

The Banking School had accepted none of this. They had insisted that the dichotomy between bank notes and deposits upon which the Act rested was a false one, and had argued that the need to maintain the convertibility of bank liabilities in general, and not just of the note issue, imposed what amounted to lender of last resort obligations upon the Bank of England. They had lost the debate in 1844, and the Bank of England which had supported the 1844 Act had eagerly embraced its new status. As one of its directors, Mr. Hankey (quoted by Bagehot 1873, p. 84) put it,

"The more the conduct of the affairs of the Bank is made to assimilate to the conduct of every other well-managed Bank in the United Kingdom, the better for the Bank, and the better for the community at large."

However, the 1850s and 1860s saw the slow but sure re-establishment of the Banking School view as the predominant one of this issue; and the publication of Bagehot's *Lombard Street* in 1873 completed the edifice of Classical monetary economics with a theory of Central Banking. This theory had roots which can be traced to the work of Henry Thornton, but it had largely been re-created in the wake of the temporary victory of Currency School doctrines in 1844 by adherents of the Banking School, notably James Wilson, Bagehot's father-in-law and predecessor as editor of the *Economist*. 29

The key empirical insight of this theory of central banking was that the gold stock of the Bank of England, held against its note issue, was in fact the ultimate, indeed the only, specie reserve of the entire British financial system. Country (i.e., outside of London) banks held reserves against their deposits mainly in the form of the highly liquid deposit liabilities not only of London Banks but also of bill brokers located in London. London Banks held
reserves of their own on deposit with the Banking Department of the Bank of England and also with the bill brokers who in their turn held, albeit very slender, reserves of Bank of England liabilities. The Banking Department of the Bank, in its turn, held Bank of England notes as its reserve. Though gold coin was of course held as till cash at all layers of the system, no significant reserves of specie, the only internationally acceptable money, were held anywhere outside of the Issue Department of the Bank.

Bagehot did not regard this system as "natural", in the sense that it was the inevitable outcome of free market forces. No more than any other Classical monetary economist did he understand that there existed economies of scale in the holding of a centralised reserve. Recognition of this all important point was to come with Edgeworth's "Mathematical Theory of Banking" (1887), though certain passages of Jevons (1875), notably on pp. 297-305, suggest that he had some insight into the issues involved. In Bagehot's view, however, market forces alone would have produced a competitive free banking system, with each institution holding its own specie reserves. He attributed the crucial role of the Bank of England to historical circumstances and traditional practices which had their origins in monopoly privileges granted to that institution in earlier times, and not to any tendencies inherent in the very nature of banking.

Nevertheless, the author of the British Constitution was a great respecter of tradition, and had no wish whatsoever to change the status of the Bank. "... I do not suggest that we should return to a natural or many-reserve system of banking. I should only incur useless ridicule if I did suggest it" (p.34). On the contrary, Bagehot wanted the Bank to recognise its special position at the base of the economy's credit pyramid and to accept the
obligations imposed upon it by this position. In particular he urged its directors to conduct their business with the aim of preserving the safety and viability of the financial system as a whole. As he put it, accurately if dramatically,

"... all our credit system depends on the Bank of England for its security. On the wisdom of the directors of that one Joint Stock Company, it depends whether England shall be solvent or insolvent" (p.17) (Bagehot's italics).

To maintain the nation's solvency, the Banking Department was advised to hold an adequate reserve against its liabilities, the presumption here being that such a reserve would be larger than that dictated by simple commercial considerations. The quantification of this recommendation was not attempted, however. Rather Bagehot's view was that

"At every moment there is a certain minimum which I will call the 'apprehension minimum' below which the reserve cannot fall without great risk of diffused fear; and by this I do not mean absolute panic, but only a vague fright and timorousness which spreads itself instantly, and as if by magic, over the public mind ... There is no 'royal road' to the amount of the apprehension minimum: no abstract argument, and no mathematical computation will teach it to us ... Credit is an opinion generated by circumstances and varying with those circumstances" (pp.156-57).

Moreover, though a self-interested bank would normally reduce its loans at times when creditors were converting their deposits into notes and specie, the Bank of England was advised to lend freely at such times to all solvent borrowers.

"A panic, in a word, is a species of neuralgia, and according to the rules of science you must not starve it. The holders of the cash reserve must be ready not only to keep it for their own liabilities, but to advance it most freely for the liabilities of others" (p.25).
Because an internal drain of specie was liable to coincide with an external drain, the need "to treat two opposite maladies at once" dictated that a "rapid rise in the rate of interest" should accompany the "large and ready loans" (p.27) needed to cope with the former. This interest rate rise would generate short-term capital inflows and ensure that the external drain associated with an adverse trade balance would be offset, hence preserving the specie reserves necessary to prevent the internal drain degenerating into a panic.

According to Bagehot, that is to say, it was the Bank's duty so to manage its affairs as to mitigate, to the best of its ability, the credit cycle, and in particular to prevent its upper turning point being marked by financial panic. It was to be persuaded to act appropriately, however, not legislated into doing so. The Classical economists were clear that the regulation of the currency was the responsibility of government, and provided an important exception to laissez-faire principles. Jevons spoke for all of them when he asserted that "... there is nothing less fit to be left to the action of competition than money ..." (1875) p.65. However, they did not extend this exception to deposit banking or to credit markets. Glasner (1985) has argued that they viewed the financial system much as they viewed any competitive industry and that regulation of the activities of individual firms was not for them an appropriate activity for government. If we except the note issue from this claim, and the context of the above quotation from Jevons suggests that the word "money" should be read in the sense of "currency" in this case, Glasner is surely correct.

If individual banks made bad loans, or otherwise overextended themselves, competitive forces would cause them to fail, and it was no business of government to prevent that. However, panics could lead to the failure of solvent firms, and the fragility of the financial system was a matter of general concern. The Banking department of the Bank of England,
being a privately owned firm, was not to be regulated, but its directors were expected to recognise their public responsibilities and act accordingly. As Jevons (1875), in a passage another part of which explicitly refers to Bagehot, put it

"The present state of things in England is not to be cured by any legislation. The only measure that can restore stability to the London market, or prevent it from becoming more and more sensitive, is to secure by some means the existence of more satisfactory cash reserves, either in actual coin, or in Bank of England notes, representing deposits of coin in the Bank vaults" (p.322).

The English Classical Theory of Central Banking was not a fully fledged theory of discretionary counter-cyclical policy. To the extent that the cycle was a product of competition in credit markets it was not to be interfered with. This theory did, however, require disinterested and voluntary discretionary intervention in markets in order to prevent the upper turning point of the cycle leading to a dislocation of the monetary system, discretionary intervention, moreover, by a privately owned profit making institution. Such a theory will hardly appear convincing to an economist of the 1980s, but in the 1870s the system did seem, at last, to be working, and indeed to be working better with the passage of time. That, for Bagehot, as for most of his contemporaries, was more than sufficient reason for not tampering with it.

VII. CONCLUDING COMMENTS

It was asserted at the outset of this essay that, by the 1870s, Classical Monetary Economics had evolved into a coherent body of theoretical and policy related analysis. More than enough has surely been said in the preceding pages to justify this claim, but it will be useful to end this paper by drawing attention to the factors, not present or not fully developed in
Classical Monetary Economics, which were later to become of central importance to the sub-discipline.

From the point of view of pure economic analysis, the most striking absentee from the Classical economics of the 1870s is the notion that monetary theory requires an individual choice theoretic basis to establish its results. In part this reflects the fact that, although the 1870s was the decade in which the so called "Marginalist Revolution" began, individual choice theory did not really become important in economics until the 1880s and 90s. Before then, though the analysis of individual choice and its social consequences was by no means absent from economic theory, and indeed as Hollander has argued with great persuasiveness and persistence, a concern with allocative questions was a good deal more pervasive in Classical Economics than much of the standard secondary literature would lead one to believe, the analysis of individual choice per se was not central to the discipline.32

However, the absence of a well worked out choice theoretic basis for economics in general is only part of the story here. Jevons, though a pioneer of the marginal revolution, never thought of money as an object of individual choice. For him, as for his predecessors and the vast majority of his contemporaries, money was a social phenomenon which existed to facilitate the workings of market mechanisms. Of the early marginalists only Walras (eg. 1886) and Marshall (eg. 1887) tried to apply their general choice theoretic approach to the special case of money in a way that looked forward to later supply and demand formulations of monetary theory.33 It is now a commonplace that the Quantity Theory may either be developed and stated in terms of expenditure and output flows using the concept of velocity, or cast in terms of factors affecting the supply and demand for a stock of money, and that these two ways of doing things are logically equivalent to one another.
This commonplace was not understood in the 1870s, and the rich array of insights into the workings of the monetary mechanism that casting its analysis in choice theoretic terms yields, insights which we now take completely for granted, were not there in the 1870s.

Classical Monetary Economics' treatment of the cycle too is incomplete by modern standards. For us the cycle is the "business cycle"; its salient characteristics are persistent fluctuations in real variables such as output, investment, employment, and so on. For the Classics it was the "credit cycle" and principally involved fluctuations in the volume of bank lending, the money supply, interest rates and prices in commodity markets. As much as anything, perhaps, this emphasis in Classical Economics reflected the fact that fluctuations in well organised financial markets were readily observable and hence attracted attention, whereas the more pervasive economy wide fluctuations which we nowadays stress were less easily discerned by observers in the 1870s.

However, this gap also reflects slowness on the part of economists to put two and two together. Jevons and his Manchester Statistical Society associates did know that the cycle had an important real dimension; transitional effects of monetary changes on real variables through forced savings mechanisms were understood by Cairnes and Mill. Every Classical economist who had read Hume knew that the rising prices which accompanied the upswing of the cycle might involve a temporary increase in output; Mill certainly did, and he also knew that, at the downturn of the cycle, a general excess demand for cash would involve a general glut of commodities.

Sufficient ingredients to construct a monetary theory of real economic fluctuations were available by the 1870s, but their interconnectedness was not
appreciated. Jevons associated real fluctuations with sunspot activity, and came to be regarded as something of a crank; Mill and Cairnes treated forced saving as a phenomenon of the transition between different equilibrium values of the price level, and divorced its analysis from that of the cycle; and neither Mill nor anyone else investigated the possibility that a glut of currently existing commodities might have implications for the production of new goods. All of these interconnections, and more, would in due course be recognised and developed, but they had not been in the 1870s.

On the policy front too, Classical analysis was very different from that which was to follow. In the 1870s, specie convertibility was regarded as a sine qua non of sound monetary management. By 1923 Keynes, whose authority on such matters later approached that of Mill in an earlier time, was arguing that the gold standard was outmoded, and eventually (for good or ill is not the issue here) helped to persuade the majority of his professional colleagues and successors of the justice of this position. As to short run policy directed at the cycle, its proper design came to look very different to that advocated by Bagehot, as economists' perceptions of the nature of the cycle, and the desirability of stabilising it, evolved over time.

Moreover, though the Classical Theory of central banking was fully articulated by Bagehot, neither he nor anyone else provided a theoretical basis for the existence of a central bank other than the accident of history. For him the "natural system—that which would have sprung up had government let Banking alone—[was] that of many banks of equal, or not altogether unequal in size" (p. 32), "The American banking system . . . of many reserves . . ." (p. 161). The underlying economies of scale in reserve holding that were leading the American system to concentrate its reserves in New York, and
which were one of the factors that would lead to the creation of the Federal Reserve System, was not recognised.

In short, though coherent and well established as an orthodoxy by the 1870s, English Classical Monetary Economics was a very different body of doctrine to any that is nowadays popular, superficial and often semantic resemblances notwithstanding. How the sub-discipline changed, and why, will form the topic of subsequent essays in this study.
FOOTNOTES

1 I say this despite the fact that comments about agents keeping money by them to answer occasional needs occur quite frequently in Classical economics, not least in the Wealth of Nations (see Laidler, 1981). For an example drawn from the period under discussion in this paper, see the quotation from Mill, fn. 3 below. Viner (1937, p. 249) links such comments to the later cash balance approach. However it requires the benefit of a good deal of hindsight to make such a connection. Among English Classical writers, only Henry Thornton (1802) seems to me to warrant the attribution of understanding of the linkages between velocity and asset holding that are commonplace in twentieth century treatments of the Quantity Theory, and are the sine qua non of the cash balance approach.

2 The work of Robert W. Clower and his associates (see eg. Clower 1985) is an important exception here. In its insistence that monetary theory should deal with the processes of exchange in the economy, his work is very much in the Classical tradition, as Clower and Leijonhufvud (1975) explicitly acknowledge.

3 In discussing the functions of money in his Principles (1865) Mill did note that "The thing which people would select to keep by them for making purchases, must be one which, besides being divisible and generally desired, does not deteriorate by keeping" (p.484), but to say that durability is a desirable quality of the means of exchange is not the same thing as attributing to money a store of value function in its own right. Jevons' (1875 p.15) comment that "It is worthy of enquiry whether money does not also
serve a fourth distinct purpose—that of embodying value in a convenient form for conveyance to distant places" comes a little closer to modern views, but still stops far short of them. Even this step was one too far for the American economist F. A. Walker (1878, pp. 11-13), who explicitly argued that anything held as a store of value had ipso facto ceased to function as money. The exception referred to in the text is Mill's analysis of the possibility of a "general glut of commodities" discussed below pp. 20-22.

Jevons begins *Money and the Mechanism of Exchange* with a graphic account of the difficulties attendant on the absence of money, in describing the case of the unfortunate Mademoiselle Zélie, a singer, who, having given a concert in the Society Islands received "In exchange for an air from Norma and a few other songs ... 3 pigs, 23 turkeys, 44 chickens, 5000 coconuts, besides considerable quantities of bananas, lemons, and oranges, this being her agreed fee of a third part of the receipts" (1875), p. 1. The notion that the inconveniences of barter were so great that the economy could not function in the absence of a monetary system had been a central feature of classical economics from the beginning.

Thus Jevons cites the British currency after 1797, and the "present notes of the Bank of France" (he was writing in the aftermath of the Franco-Prussian war) as examples of "undisguised paper money" (p. 234). He also notes that

"It is a common recourse for insurrectionary or belligerant governments in want of funds to issue documents promising to pay cash [i.e. commodity money] after their successful establishment ... there are few instances in which such bills have eventually been paid" (p. 233).

Here he cites the example of the Confederate States of America. See Jevons (1875), (pp. 232-237).
I here summarise some of the principle themes of Jevons' (1863, reprinted 1884) essay. For a more detailed account, see Laidler (1982).

For an account of Cairnes work on tracing through the sequence of events whereby Australian gold discoveries raised prices throughout the world, see Bordo (1975). Cairnes own account is to be found in (1873).

Thus Mill (1865), p.524, says

"I apprehend that bank notes, bills, or cheques, as such, do not act on prices at all. What does act on prices is Credit, in whatever shape given, and whether it gives rise to any transferable instruments capable of passing into circulation or not."

Only a few pages later (p.531) he tells his readers that "It appears ... that bank notes are a more powerful instrument for raising prices than bills, and bills than book credits" and a little later still (p.537) he points out that

"... there is a fourth form of credit transactions, by cheques on bankers, and transfers in a banker's books, which is exactly parallel in every respect to bank notes, giving equal facilities to an extension of credit, and capable of acting on prices quite as powerfully".

If it is borne in mind that to Mill, the "supply of money" referred to a rate of flow of money expenditures, the essentially semantic nature of the confusion evident here is more easily appreciated. On this, see pp. 19-23 below.

Thus, among the factors affecting the "rapidity of circulation" Jevons listed "Railways and rapid steamboats ... telegraphs ... and the acceleration of the mails", (1875 p.337). Jevons did note in the same passage that the propensity of people to hoard coin would also affect velocity, but linked variations here to the type of banking institutions in place, and to
the "thrifty" or "improvident" nature of the population. Hence there is no
trace of an embryo theory of the speculative demand for money in his work.
Mill dealt with the problems raised by hoarding for the quantity theory by
excluding the quantity of hoarded coin and notes from the money supply: "The
supply of money, in short, is all the money in circulation at the time" Mill
(1865), p.490 (Mill's italics).

On the matter of the cycle, of course, Jevons was by no means an
orthodox classical economist. Not only does his 1863 work on the "Value of
Gold..." contain a striking discussion of the role of fixed investment
fluctuations in the cycle, which he did not follow up in his later work, but
he was also later to be the great populariser, though not originator, of the
"sunspot theory". This was by no means as ridiculous an idea as it is
sometimes made out to be, though Jevons' enthusiasm for it was, perhaps,
excessive. (On all this see Laidler (1982), pp. 340-345.) Though Jevons did
on various occasions pay attention to real factors in the cycle, among them
fixed investment, agricultural output, and the volume of textile exports,
prices and financial phenomena nevertheless loomed very large in his
analysis. In this his work contrasts sharply with that of Marx (1867) for
whom fluctuations in output and employment were of the very essence of the
cycle. Marx barely discussed price fluctuations and financial factors.

The preceding few pages draw heavily, and obviously, on the work of
Viner (1937) and Fetter (1965). For accounts of the Bullionist controversy
and the Currency School—Banking School debate by this writer, see Laidler
(1985) and (1973) respectively.

Malthus' denial of Say's Law is to be understood as applying to the
stability of the economy's long run growth path, and not to any short-run
processes. Thus, Keynes's (1936) claim to the contrary notwithstanding, his analysis of this issue did not foreshadow The General Theory. It is in the context of Malthus' views, and others like them, that Mill's defence of Say's Law in the Classical system must be read. On this, see Corry (1959).

13 See Marshall (1887) (reprinted in Pigou (ed.) 1925), pp. 184-192.) Many standard interpretations of Mill's views on Say's law do not acknowledge the presence even of this limited analysis of a "general glut" in his Principles..., presumably because it occurs in his discussion of monetary issues, and is not referred to in that section of the book dealing with capital accumulation where the celebrated assertion that "... demand for commodities is not demand for labour ..." occurs. For a discussion of this issue, see Hollander (1985).

14 I have already commented above on the lack of clarity in Classical Economics about the stock-flow distinction. In putting Mill's supply-and-demand for money notions into more up-to-date terminology, I have taken the liberty of introducing anachronistic clarity about this point. The passages from pp. 494-5 of Mill, quoted above, p. 12 suggest that, in doing so, I am not doing any great violence to Mill's views, for he does there explicitly introduce the idea of velocity into his discussion of the mechanism linking money, transactions and prices. However, Hegeland (1951, pp. 68-69) does, quite correctly, draw attention to Mill's uncertain grasp of the fact that the notion of velocity has a time dimension to it.

15 Hollander (1985, pp. 540-541) discusses the influence of Cairnes on Mill on this issue, and also the extent to which Mill arrived at the relevant results on his own account.
Such effects as these would not, according to Classical Economics, accompany just any type of money creation. On the contrary, issues of inconvertible government paper money were associated with the deficit finance of government consumption, and Mill, for one, argued quite explicitly that, in this case, the economy's interest rate would be raised by the government bidding away for its own use resources that would otherwise have been saved and therefore invested by the private sector. On this, see Mill (1865, pp.656) and Hollander (1985).

A passage, quoted in part earlier, about the effects of monetary expansion on the rate of interest, also tells us that "... Considered as an addition to loans [an operation which adds to the currency] tends to lower interest, more than in its character of depreciation it tends to raise it ..." Mill (1865, p.646) (my italics). This is not the only place that Mill refers to what was later to become known as the "Fisher effect". Note that Thornton had drawn attention to the effects of anticipated inflation on the nominal interest rate in a parliamentary speech of 1811. However his Paper Credit (1802) referred to no such matter nor does the Bullion Report (1811) (Cannan 1919) of which he was a part author. The above-mentioned speech was delivered in defense of that report, however. It is reprinted in the Hayek edition of Paper Credit.

And in the case of the Austrians, it was Wicksell's (1898) elaboration, of the factors driving the market interest rate away from its natural rate during the celebrated cumulative process, which formed the link between Mill's work and theirs. Wicksell's analysis of these matters, like that of his Classical predecessors, was in the context of secular price level changes and not the cycle.
For a full account of Hawtrey's analysis of the inventory cycle, see Deutscher (1984).

In Smith's analysis, which confined itself to considering the replacement of metallic money with banknotes, specie would flow abroad in exchange for wage goods. These could be added to the stock of circulating capital, and so generate an increase in the domestic labour force and output level. Smith's analysis is the starting point of Ricardo's (1816) proposal for "An Economical and Secure Currency" which was to consist of paper convertible on demand into gold ingots held by the Bank of England. In discussing this matter Mill cited Adam Smith's comparison of "... the substitution of paper in the room of the precious metals, to the construction of a highway through the air ..." with approval, and a little inaccuracy, since Smith referred to a wagonway, a primitive form of railroad, not a highway.

On this matter, see Laidler (1981). The reader's attention is drawn to the fact that I refer to the real-balance effects in Classical Economics as "not very well articulated". To analyse them properly a clear notion of a demand for money is needed, and, Classical Economics, with the exception of the analysis of "gluts" referred to above, (pp. 18-20) did not use such a device. Becker and Baumol (1952) provide an excellent guide to the role of the real balance effect in Classical Theory. Before the 1880s, they find few satisfactory accounts of it, Mill's above mentioned analysis being the principle exception.

On the transfer mechanism, see Mill (1865, pp.627-28). For a comprehensive account of the evolution of the Classical analysis of the transfer problem, see Fetter (1968).
23 For a clearcut and well documented statement of this claim, see Frenkel and Johnson (1976).

24 Thus, the Bullionist controversy saw much debate about the state of the British exchange rate on Amsterdam and Hamburg, where a silver standard was in place.

25 Fisher (1911) unfairly attributed to Jevons a belief in the stabilising effects of bimetallism on the price level. (See Laidler 1982 p. 346). In a recent paper, Ro)nick and Weber (1986) have suggested that Gresham’s Law is invalid. The empirical evidence with which they support this extraordinary suggestion is drawn from times at which the mint prices of the two metals were not fixed, as they themselves admit (p. 192). However, they then go on to argue (p. 193) that no mint with finite resources could effectively hold its price for two metals away from the market price indefinitely, failing to note that it is precisely this, correct, prediction of Gresham’s Law which lay at the heart of 19th century and early 20th century discussions of bimetallism. Since they fail to cite Mill, Jevons, or even Fisher on these issues, it is perhaps not surprising that they are unaware of this fact, or of the crucial historical experiences associated with the mid-nineteenth century gold discoveries which did so much to provoke discussions of these matters by contemporary observers.

26 Much of the difficulty here stems from the fact, already noted, that, although Cairnes and Jevons were able to document significant commodity price increases in the wake of the gold discoveries, productivity changes apparently did much to prevent these increases coming through in what we would nowadays call a “consumer price index”. Cairnes and Jevons, true to their Classical heritage, seemed to regard the purchasing power of gold over primary
commodities as the correct measure of its "value", presumably because the labour input needed to produce them had not changed significantly during the period they studied. Even Jevons did not entertain the idea that the purchasing power of money over utility might be a relevant measure of its value. On this issue, see Laidler (1982).

27 On this issue, see Jevons (1868), reprinted (1884).

28 Though the suppression of a competitive note issue, along with the maintenance of competition in deposit banking made sense in terms of Currency School doctrine, which attached undue significance to notes per se, it is hard to defend those writers such as Jevons who supported the Bank of England's note issue monopoly while simultaneously recognising the importance of competitively provided deposits in the circulating medium. As White (1984) has argued, though a unit of account is clearly a public good, a means of exchange is not, and the example of Scottish banking, of which Jevons was, of course well aware, shows that competition among note issuing banks could be an effective a means of ensuring their soundness just as it was among deposit banks.

29 The story summarised here is, of course, told in considerable detail in Fetter (1965).

30 In this Bagehot differed from earlier Banking School writers. Thus, Tooke (1840) proposed that the Bank of England should usually hold a reserve of 10 million pounds and never let it fall below 5 million pounds. (See Laidler, 1973.)

31 The severity of crises after 1844 was exacerbated by the difficulty faced by the Issue department of the Bank in making notes freely available to the Banking Department. See Mill (1865), p.673
"... it appears to me, that notwithstanding the beneficial
operation of the Act of 1844 in the first stages of one kind of
commercial crisis (that produced by overspeculation), it on the
whole materially aggravates the severity of commercial revulsions".

In practice the provisions of the Act limiting the note issue were suspended
in 1847, 1857, and 1866, so that the ridiculous outcome of the Banking
Department being unable to meet its obligations when the Issue Department
still held large specie reserves was avoided. It is worth noting that just
such consequences from the operation of the Act had been predicted by its
opponents at the time of its passage, notably by Tooke. (See Laidler, 1973.)

32There is no better evidence in favour of this, surely, than that the
time of value in general, and the concept of utility in particular, do not
appear in John Stuart Mill's Principles until Book 3. The standard text of a
discipline which put individual choice at the centre of things could hardly
have delayed introducing the concepts fundamental to such an approach until
three-quarters of the way through its length, nor would it have found it
possible to discuss production, distribution, exchange and money, before it
got around to discussing utility and value. This is not to say that value,
considered as a market, as opposed to individual phenomenon, does not play a
role in the Classical Theory of distribution. It obviously does.

33By this I mean that they developed the idea of a demand for money
relationship based on the idea of individual choice. Patinkin (1965), Notes D
and E, discusses this aspect of the early development of the marginal utility
approach to monetary theory. Menger's analysis of money as a social
institution was, like everything else in his work, based on an individualist
methodology, and in this sense did have a choice theoretic foundation.
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