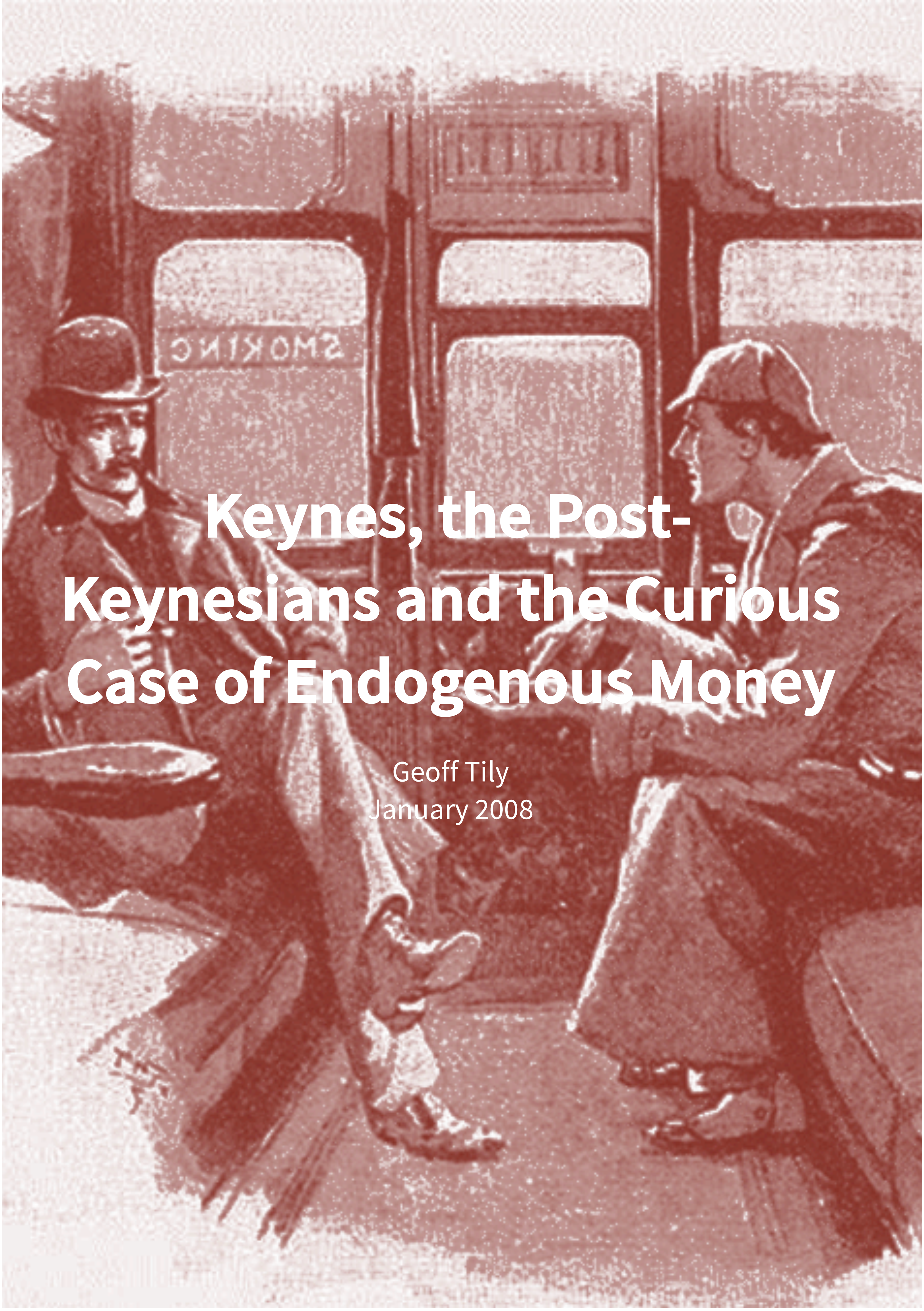

Keynes, the Post-Keynesians and the Curious Case of Endogenous Money

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Abstract

This paper examines how the notion that Keynes took money as exogenous in the *General Theory* has proved so durable in the post-Keynesian paradigm. This durability is despite post-Keynesians regarding Keynes as a monetary economist, rejecting the 'Keynesian' interpretation and basing their paradigm on the endogeneity of money. The approach is historical, through a review of the early contributions to the endogenous money literature. The key characters who attribute exogeneity to Keynes are Nicholas Kaldor, Sir John Hicks and Basil Moore. The validity of each author's argument is examined and found wanting, though, plainly, Keynes's position is not straightforward.

Key words: Keynes, post-Keynesians, monetarists, endogenous and exogenous money.

JEL classifications: B22, E12, E40, E51.

1. Introduction

Post-Keynesian economics seeks to restore and extend Keynes's economics, discard 'Keynesianism' and stress the fundamental importance of monetary considerations. Yet post-Keynesians are reluctant to attribute to Keynes, or at least the Keynes of the *General Theory*, the sort of monetary considerations that they consider so important. As far as I am aware, Chick is the only post-Keynesian to challenge seriously this view. Citing Moore, she argues:

> Although it is true that banks hardly feature at all in the *General Theory*, the following statement, however widely accepted, could be regarded as an exaggeration: 'As is well known, Keynes in the *General Theory* explicitly assumed that the money supply was exogenously determined by the monetary authorities' (Moore, 1996, p. 92). This interpretation is not supported unambiguously anywhere in the *General Theory*. (Chick, 2001, p. 8)

To support her point, she examines all of Keynes's statements about the money supply in the *General Theory*. Here, I examine, in a historical review of the endogenous money literature, how the notion that Keynes took money as exogenous emerged. I take as a fundamental proposition that Keynes was a monetary economist and the *General Theory* a monetary theory; in hindsight, Keynes's main error was to fail to detail his specific assumptions about the nature and the supply of credit (though he referred to the reader to his *Treatise*, which could not have been clearer). His theory of effective demand should be regarded as based on an endogenous supply of bank money and a monetary environment such that interest rates are not distorted when moving from a lower to a higher rate of activity (see quote on p. 21). Yet the same theory can also address conditions where the supply of money is not so straightforwardly determined, and where the authorities do apply techniques to restrict the money supply, as was the situation in the first third of the twentieth century, a fact with which Keynes was undoubtedly familiar. Indeed it is a very serious error to consider that the existence of endogenous money means that the authorities (or banks) have no control over the money supply. Again it is Chick who, with Sheila Dow, argues that in the *General Theory* Keynes took the supply of money as 'given', because his main concern was the processes after money had been created (e.g. Chick, 2001, p. 9, Dow, 1997).

These fundamental insights (though not ones that were originally due to Keynes) were of course lost or dismissed by the 'Keynesian' economists, for whom 'money did not matter'. *IS-LM* depicted an economy where the money supply was exogenous and where an increase in activity would lead to a rise in interest. It is not my purpose here to detail the process by which Keynes was so bastardised (though see Tily, 2007, Chapter 4). I am concerned only to establish how the post-Keynesian treatment of matters emerged.

Post-Keynesian Economics (PKE) emerged in 1970s against the backdrop of the monetarist attack on 'Keynesianism'. It provided an alternative challenge to monetarist doctrine, underpinned by theoretical treatment of credit mechanisms and uncertainty. PKEs began to repair the absurd presentation of money in 'Keynesianism'. Yet many did not challenge the position 'Keynesians' had attributed to Keynes. Even those who sought bedrock in Keynes's economics, did not challenge the exogeneity assumption in 'Keynesian' economics. Some post-Keynesians even explicitly distanced Keynes from any notion of endogeneity. A variant of the story sees Keynes realising his 'error' of exogeneity in the *General Theory* and introducing his new 'finance' demand for money. In addition, beyond ignoring Keynes's views, those advocating endogenous money quite often tended to recognise no precedent for their approach, failing to see that precedent was in reality a good two centuries old. The discussion in this paper therefore traces early contributions to PKE, examining their portrayals of Keynes's treatment and to whom precedent for endogenous money was attributed.

The starting point is of course a matter of debate; I have chosen Kaldor (1970) and Davidson (1972a). This is not to say that earlier post-Keynesians (and others) did not have important views on these matters; but: (i) for most PKs, Kaldor's and Davidson's contributions marked the start of a more coherent and coordinated approach; and (ii) starting here seems to cover the key contributions with regard to subsequent developments of endogenous money. The existing secondary literature tends to emphasise the importance of Nicholas Kaldor and subsequently Basil Moore. Davidson's perspective is not so often discussed, nor is Sir John Hicks's, who is found to have made an important and forthright contribution to the debate that go beyond his culpability for the 'Keynesian' interpretation. For example, Harcourt (1987, p. 924), writing the entry for 'Post-Keynesian economics' the *New Palgrave*, offers the following: "As well as these major groups there are some outstanding individual figures, the most notable of whom is Kaldor. .... (His critique of Keynes's system with regard to the endogeneity of money has found a sympathetic hearer in Basil Moore in the USA)". Carvalho (1995, p. 26), writing in a summary of post-Keynesian monetary theory, put matters this way:

> According to Kaldor, Keynes was an exogenist – that is, he believed in the possibility of controlling the quantity of money because he was never able to free himself entirely from classical ideas (Kaldor, 1982). Moore (1988[a], p. 8) even charges Keynes with discussing a commodity-money economy rather than a modern credit-money economy when he proposed that one fundamental property of money was its low elasticity of production.

Cottrell (1994, pp. 596-7) writes in a similar summary:

> In most macro textbooks (as in Keynes's *General Theory*), it is presumed, at least as a first approximation, that the nominal supply of money is exogenously fixed by the central bank. I say as an approximation, because it is widely recognised that money supply is in some degree endogenous, in two

> distinct ways. First, in relation to the formula, money supply equals money multiplier times monetary base, it is recognised that the magnitude of the money multiplier is in part determined by the portfolio decisions of the private sector, so that even if the central bank were rigorously to control the monetary base, this would not yield precise control over the total supply of money (e.g. Tobin, 1963). Second, it is said that the central bank can, if it wishes, choose to control interest rates rather than money stock; and under such a regime the private sector demand for money must be passively accommodated. The endogeneity of money envisaged by post-Keynesians is more deeply rooted. According to Nicholas Kaldor and Basil Moore, the central bank simply does not have the option of exercising genuine quantitative control of the stock of money.

Of these authors, Cottrell comes closest to actually charging that Keynes held that money was exogenous;[1] Harcourt and Carvalho refer to critiques of Keynes without judgement over their validity. Here, the review of the contributions of Davidson, Kaldor, Moore and Hicks is followed by discussions of precedent and the validity of their critique of Keynes.

The use of the terminology 'endogenous money' needs to be clarified. The notion of 'endogenous/exogenous' goes wider than monetary theory, originally emerging in the context of econometric modelling and extended to economic model-building. The convention of leaving government policy unexplained ('exogenous') led to the identification of 'monetary exogeneity' with the determination of money by the central bank. The specific notion of 'money endogenity' appears to have been first used by Kaldor. Desai (1987) has examined the issue in some detail, but for present purposes, the terminology is regarded as indicating that the supply of credit, and hence bank money, is determined at least in part by the level of demand for credit by consumers and corporations. This does not mean that the conditions of the supply of money are irrelevant: a restriction on note issue, changes to permitted reserve assets or a tightening of credit conditions by banks might all influence the total amount of bank money in an economy.

All authors who have emphasised the importance of the development of credit and bank money and its importance to economic development, should be regarded as ancestors of the endogenous money view. Only the monetarists conceive of a situation where such developments are of importance only to inflation. Finally, we should remember that failings in 'Keynesian' interpretations of Keynes's monetary theory eased the triumph of that monetarist doctrine. Post-Keynesianism came too late for the battle with the monetarists; and since then the mainstream has chosen to ignore it.

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[1] And even this is rather ambiguous given his use of 'first approximation' and then the way in which the 'widely recognised' proviso may or may not be attributable to Keynes.

2. Post-Keynesians and Sir John Hicks and endogenous money

2.1 Kaldor's 'New Monetarism'

Nicholas Kaldor delivered his 'New Monetarism' lecture at University College London on Thursday 12 March 1970.[2] It was subsequently published in *Lloyds Bank Review*. According to Kaldor, the centrepiece of Friedman's case against 'Keynesianism', was the 'stable demand for money', so that money was not sensitive to the rate of interest (unlike in the derivation of the standard 'Keynesian' *LM* curve), but only to nominal income (with money seemingly defined as bank money).

> Kaldor's challenge to Friedman's results was that money was endogenous:
>
> Friedman's main contention is that the velocity of circulation, in terms of conventional money, has been relatively stable.[3] That may well be, but only because, in the historical periods observed, the supply of money was unstable. In other words, in one way or another, an increased demand for money evoked an increase in supply. The money supply "accommodated itself" to the needs of trade: rising in response to an expansion, and vice versa. In technical terms, this may have been the result of the objective of "financial stabilization", of maintaining the structure of interest rates at some desired level, or the so-called "even keel policy", of ensuring an orderly market for government debt.
>
> More fundamentally (and semi-consciously rather than in full awareness) it may have sprung from the realization of the monetary authorities, be it the Federal Reserve or the Bank of England, that they are in the position of a constitutional monarch: with very wide reserve powers on paper, the maintenance and continuance of which are greatly dependent on the degree of restraint and moderation shown in their exercise. The Bank of England, by virtue of successive Acts of Parliament, has a monopoly of the note issue, at least in England and Wales. But the real power conferred by these Acts depended, and still depends, on maintaining the central rôle of the note issue in the general monetary and credit system; and this, in turn, was not a matter of legal powers, but of the avoidance of policies which would have lead to the erosion of this role.

* * *

[2] Though regarded by many as the key paper, Kaldor's earlier work was also important.
[3] This follows from the quantity equation: if M = PY, V must be constant.

> The explanation, in other words, for all the empirical findings on the "stable money function" is that the "money supply" is "endogenous", not "exogenous". (Kaldor, 1970, pp. 8-9)

Kaldor does not develop his case beyond these statements. While he offers no precedent, his text suggests that he is arguing a familiar position: "This, of course, is the crux of the issue, and it is vehemently denied by the monetarist school" (*ibid.*, p. 9).[4]

Keynes himself is neither associated nor disassociated with the notion that money is exogenous. More generally, Kaldor adhered to a view where changes in the money supply reflected changes in money income which followed from changes in demand.

2.2 Paul Davidson's 'Money and the Real World'

In March 1972, the paper that preceded Davidson's famous book was published in the *Economic Journal*. Endogenous money is not mentioned. Instead Davidson's theory is 'monetary' through the existence of uncertainty.

> It is only in a world of uncertainty and disappointment that money comes into its own as a necessary mechanism for deferring decisions; money has its niche only when we feel queasy about undertaking any actions which will commit our claims on resources on to a path which can only be altered, if future events require this, at very high costs (if at all). (Davidson, 1972a, p.104)

Davidson feared that money might be diverted from productive activity through such mechanisms and consequently might restrain activity. There are aspects of exogeneity in this argument, but the paper by no means neglects the existence of credit. To my taste this is done in a rather convoluted manner, with emphasis on 'money contracts':

> In a world of uncertainty where production takes time, the existence of money contracts permits the sharing of the burdens of uncertainties between the contracting parties whenever resources are to be committed to produce a flow of goods for a delivery date in the future. (Davidson, 1972a, p.107)

There is no cross-reference to Kaldor (1970).[5] Keynes is prominent throughout the discussion as "… the first important economist bluntly to accuse the neo-classical view of the nature of money as foolish" (Davidson, 1972a, p. 102).[6] But while this

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[4] I do not seek to address the adequacy of Kaldor's representation of the broader monetarist versus Keynesian debate, or his interpretation of the Radcliffe Committee view; the interested reader is referred to Chick (1973), which also tackles the endogeneity of money.

[5] And a footnote suggests that Kaldor was not involved in the work "The Author is extremely grateful for the many helpful comments of Sidney Weintraub, Basil J. Moore, Jan Kregel and Miles Fleming on earlier drafts of this paper" (Davidson, 1972, p. 101, n. 1).

[6] Historically this is very inaccurate – see section 3.

permits Keynes the status of monetary economist, this is done through his identification of uncertainty and the importance of money contracts. There is no mention of Keynes's understanding or interpretation of credit and bank money.

2.3 Davidson *versus* the monetarists

Only six months later, Davidson made his contribution to the *Journal of Political Economy* symposium on monetarism. In 'A Keynesian view of Friedman's Theoretical Framework for Monetary Analysis', he justly argued that Friedman "should not have attacked a straw-man version of the Keynesian system which others have, in the name of Keynes, erected, nor should he have ignored several important chapters in Keynes's *General Theory*" (Davidson, 1972b, p. 865).

As in his previous paper, he went on to emphasise the changed role of money in an uncertain world. And he stated that "Certainly, both Friedman's framework – which explicitly states that the supply of money depends 'critically' on banking factors … – and Keynes's model are developed to deal primarily with bank-money economies …" (*ibid.*, p. 866, n. 3). But he argued that Keynes specified a simple demand-for-money function, "which relate[d] the quantity of money demanded to income" as a "safe first approximation", and then that "Ohlin (1937) was quick to point out the deficiencies of such a demand function for money" (*ibid.*, p. 875). Davidson then argued that Keynes conceded his error to Bertil Ohlin and in response developed his finance motive. Davidson appears to be charging Keynes with exogeneity, but it is unclear whether he regarded the finance motive as an acceptable and sufficient treatment of endogeneity.

Certainly Davidson's interpretation of the finance motive is not straightforward, claiming that it enables "planned" expenditures to be taken into account, seemingly within a 'Keynesian' simultaneous-equation framework (*ibid.*, p. 876). However, he goes on to outline a "Keynesian view about the supply of money" (*ibid.*, p. 877), one dimension of which sees "an increased desire to buy more reproducible goods per period – finance motive – induces individuals, firms, governments, or foreigners to enter into additional debt contracts with the banking system" (*ibid.*), leading to an "endogenous change in the money supply" (*ibid.*, p, 878). Hence Davidson lined himself up with Kaldor on endogenous money, but perhaps also accepted that Keynes did have endogenous money, though only through the finance motive.

2.4 Sir John Hicks

Hicks, of course, bears a great deal of responsibility for the immense influence of *IS-LM* and hence the long-standing notion that Keynes took money as exogenous. Yet, in the late 1970s, Hicks himself began to take a far more sophisticated approach to the role of money in the economic process. His 1977 book *Economic Perspectives: Further Essays on Money and Growth* is important to this discussion. In a seemingly previously unpublished essay he set out a brief history of practical monetary developments alongside the evolution of certain economic theories. He arrived at a point (at the turn of the twentieth century) where bank money rather than commodity money was "*the* money" (Hicks, 1977, p. 59) to which the quantity theory should be applied:

> … if the Quantity theory was to be maintained, it was to the Quantity of bank money that it must apply. That is a step which was very generally taken (as by modern monetarists it is still taken); it is nevertheless a serious step, which makes a difference. (*ibid.*)
>
> Hicks argued that money was not exogenous:
>
> But the supply of bank money is not so clearly exogenous. It can indeed be affected by changes in banking policy; but with given policy (as represented, more or less, by given lending rates) the supply of bank money is determined by the market. It is provided by the banks, to the extent that the market requires, so it is *not* an exogenous variable. (*ibid.*, pp. 59-60)

He then accorded priority to Knut Wicksell: "So we come to Wicksell, who was the first to attempt a theory of this new type" (*ibid.*, p. 61). To complete the job, he attributed exogeneity to Keynes: "In Keynes's model there is a developed financial system; so it should be nearer the Wicksell model than to the other. Nevertheless he does treat the supply of money (which is evidently taken to be bank money) as exogenous" (*ibid.*, p. 61). I can find no justification for this claim in what follows in Hicks's paper, though perhaps he implicitly harks back to his own *IS-LM* formulation of matters, which he regarded as accepted by Keynes.

2.5 Enter Basil Moore

Moore's paper, 'The Endogenous Money Stock' (1979), set out the theoretical and empirical justification that brought endogenous money to the *Journal of Post Keynesian Economics*. But at this stage he did not attribute exogenous money to Keynes.

> He opened the paper with the following quote from Keynes:
>
> The banking system has no direct control over the prices of individual commodities or over the rates of money earnings of the factors of production. Nor has it, in reality, any *direct* control over the quantity of money; for it is a characteristic of modern systems that the central bank is ready to buy for money at a stipulated rate of discount any quantities of securities of approved types. (Keynes, 1972, vol. 6 [*CW* VI], p. 189)

And he ended the paper with a quote from Keynes:

> As Keynes reminded us at the beginning of the *Treatise*, money in the real world is neither created like manna from heaven nor dropped by helicopter, but "comes into existence along with debts, which are contracts for deferred

payments, and price-lists, which are offers of contracts for sales or purchase" (1930, vol. 5 [*CW* V], p. 3).

So while he did not explicitly state that Keynes regarded money as endogenous, the use of these quotations suggests that Moore was strongly identifying Keynes with the views that he is putting forward.

2.6 Kaldor charges Keynes

Kaldor returned to the issue at the start of the 1980s. In July 1980 he submitted a long paper to the Treasury and Civil Service Select Committee (TCSC); then in 1981 he delivered two 'Radcliffe Lectures'. The two items were collected in his 1982 book *The Scourge of Monetarism*.

Kaldor's TCSC paper was a response to an invitation to give evidence "for purposes of their inquiry into monetary policy" (Kaldor, 1986 [1982], p. 39). The context was a discussion of the postulates of monetarism as the justification for the government's policies at the time. Kaldor first set out his argument that money is endogenous:

> [Monetarists] assume that there is *no* important difference between the functioning of a commodity-money economy and a credit-money economy. ...
>
> …
>
> ... the 'money supply' in a credit-money economy is *en*dogenous, not exogenous – it varies in direct response to changes in the public 'demand' to hold cash and bank deposits and not independently of that demand. (*ibid.*, pp. 45-7)

He then examined the implication of pursuing monetarist policy in this light. Towards the end of the discussion he stated, for the first time, Hicks's charge against Keynes. Despite the length of the paper, the charge was made in a throwaway manner and is hardly forthright:

> 71. Keynes himself never really questioned the assumption that the *supply of money*, however defined, is exogenously determined by the monetary authorities. At least his equations (whether those in *Treatise on Money* published in 1930, or in the *General Theory* of 1936) are not consistent with any other interpretation. (*ibid*., p. 73)

It is supported only by a footnote:

> The equation $M = L_1(Y) + L_2(r)$ which appears in Keynes's *The General Theory of Employment, Interest and Money* (London, 1936, p. 199), but which could more simply be written $M = L(Y,r)$, assumes M as exogenously given. (*ibid*., n. 47, p. 73)

In contrast, a year later, in the 'Radcliffe lectures', Keynes's position is used as a central component of Kaldor's endogenous money attack on monetarism.[7] Kaldor told his audience of his 'discovery' of endogenous money set against the background of the work of the Radcliffe Committee and the monetarist attack on 'Keynesianism'.

Kaldor argued that the practical conclusions of the Radcliffe Report[8] depended on a theoretical argument that gave a crucial role to the velocity of money:

> But the key to their [the Radcliffe Committee's] attitude is found in the next paragraph.
>
> > The fact that spending is not limited by the amount of money in existence is sometimes argued by reference to the velocity of circulation of money. It is possible for example to demonstrate statistically that during the last few years the volume of spending has greatly increased while the supply of money has hardly changed; the velocity of circulation of money has increased. We have not made more use of this concept because we cannot find any reason for supposing, or any experience in monetary history indicating, that there is any limit to the velocity of circulation; it is a statistical concept that tells us nothing directly of the motivation that influences the level of total demand.[9]
>
> They add in a footnote 'that the more efficient the financial structure, the more can the velocity of circulation be stretched without serious inconvenience being caused'.
>
> I wonder whether the members of the Committee were fully aware that in one sentence, or part of a sentence, they repudiated in one fell swoop the quantity theory of money in all its versions, from Cantillon and Hume, through Ricardo, Marshall, and Walras, Irving Fisher and Milton Friedman (to mention only the most prominent) with their army of camp followers, right down to Mrs Thatcher.
>
> For it is the essence of the quantity theory of money that the demand for money, whether expressed as an amount of real purchasing power, a potential

[7] Kaldor gave the following background: "[In these lectures,] intended to commemorate the late Lord Radcliffe, who was the first Chancellor of this University [Warwick], it is particularly fitting that I should take as my starting-point for an analysis of the current state of monetary theory the Report of the Committee on the Working of the Monetary System of which Lord Radcliffe was the Chairman and (to my knowledge) also the principal author" (Kaldor, 1986, p. 3). (Chick tells me that the principal author was R. S. Sayers.)
[8] "We envisage the use of monetary measures as not in ordinary times playing other than a subordinate part in guiding the development of the economy. ...[W]e cannot recommend any substantial changes in the rules under which banks operate; we do not regard the capital issues control as useful in ordinary times; and we believe there are narrow limits to the usefulness of hire purchase controls" (Radcliffe Report, 1959, paras. 511 and 514 [quoted in ibid., p. 6]).
[9] [Radcliffe Report, para. 391]

> basket of goods over which an individual wishes to keep command in the form of money, or as a proportion of money income or money turnover, is *stable.* This in turn implies that the velocity of circulation of money is stable, since the velocity of circulation is nothing else but the reciprocal of the demand for money expressed as a proportion of income or turnover – the two concepts are definitionally identical. Thus the quantity theory stands or falls with the proposition that the velocity of circulation of money is stable and invariant, or at least largely invariant, to changes in the quantity of money. If this were not so – if the velocity were a purely statistical relationship, as the Radcliffe Committee suggests, depending on what the relation of the quantity of money to the levels of incomes happened to be – there could be no direct or causal influence exerted by changes in the quantity of money on expenditure or on the level of prices. (*ibid*. p. 9)

The difference between the Radcliffe and monetarist views on the importance of money is therefore seen to rest on whether the velocity of money is stable or not. In his second lecture, Kaldor attributed the 'Radcliffe position' on velocity to Keynes:

> Now Keynes's intellectual development, spread over several decades, consisted of a long struggle to escape from this [quantity] theory; he succeeded in doing so in stages – which meant that he never abandoned it altogether [no it doesn't!]. The first stage was the realization that labour is different from commodities: the labour market is different from commodity markets, in that an excess supply will not cause a reduction in wages, nor does an excess demand necessarily lead to a rise in wages, at least not immediately. Hence his opposition to the return to the Gold Standard at pre-war parity: the domestic price level is tied to the level of wages which are not adjusted downwards so as to keep supply and demand in equilibrium.
>
> The second stage came with the realization or recognition that effective demand for commodities in the aggregate is not determined by monetary factors but by autonomous demand financed by loan expenditures and the multiplier which depended on the propensity to save out of income. This meant that investment and savings, which are always brought into equality *ex post* do so through the adjustment of incomes and not, as the traditional theory had it, through movements in the rate of interest in the market for loans.
>
> This left the rate of interest 'in the air', as Keynes himself put it (because it could no longer be held that the rate of interest is the 'price' which equates savings with investment), until he thought of the idea of liquidity preference – that people's demand for money will be the greater the lower the rate of interest – which provided the mechanism through which monetary variables accommodate themselves to the 'real factors', the underlying relationships which generate the equilibrium level of effective demand.

> Unfortunately, the way he presented this solution was a *modification* of the quantity theory of money, not its *abandonment.* For he wrote:[10]
>
> $$M = L(Y, r)$$
> $$\text{or } M = k(r)\, Y$$
>
> where $L(Y, r)$ represents the demand for money as a function of both the level of income Y and the rate of interest, r, while $k(r)$ represents the demand for money expressed as a *proportion* of income, and (according to Keynes) is an inverse function of the rate of interest. Or, to put the same thing in Fisher's terminology:
>
> $$D \equiv Y \equiv MV(r) \text{ (instead of } Y = MV)$$
>
> This implies that *all* the adjustments of monetary to real factors are through changes in the velocity of circulation – since the quantity of money, M, is still shown as an independent variable, determined by the monetary authorities.
>
> It was perhaps this form of presentation which led the Radcliffe Committee to the rather extreme-sounding statements about the variability of the velocity of circulation quoted in the first of these lectures. And it led young Milton Friedman into believing that the empirical validity of the Keynesian theory depended on the *absence* of any correlation between M and Y. Clearly if V adjusts to variations of Y, M and Y could not be closely related. Much to his surprise, he found the opposite – a strong correlation between M and Y. He worked and worked and re-worked the historical series on money and income on all the data he could get hold of, and then extended it in time, … (*ibid*., pp. 20-1)

Here Kaldor squares Keynes's alleged assumption of exogenous money with his theory that output was determined by demand through changes to the velocity of money. Furthermore Kaldor implicitly uses this allegation to justify the monetarist challenge; in the introduction to the 1986 edition of *The Scourge of Monetarism* he does so explicitly:

> As I argue in this book, Keynes unwittingly contributed to Friedman's revival of monetarism by his liquidity preference equation, $M=L(Y, r)$ where the *demand* for money was assumed to vary with the rate of interest, whereas the *supply* of money, M, was taken as an exogenous constant. (*ibid*., p. xvii)

The argument is multifaceted and surely contentious, ultimately portraying an interpretation of Keynes's position as his true position with no references to any sources of the argument.

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[10] Kaldor cites *GT*, p. 189, which is wrong (should be 199); furthermore he has adopted his own simplification without saying so.

Kaldor did not attribute precedent in his TCSC paper, but he cited Hicks:

> 13. For a convincing demonstration of why the 'money supply' is endogenous in a credit money economy (in contrast to a commodity-money economy) see J. R. Hicks, 'Monetary Experience and the Theory of Money', *in Economic Perspectives* (Oxford, 1977) (*ibid.,* Kaldor, 1986, p. 47)

In the second Radcliffe lecture, Kaldor chooses to present endogenous money, or at least the role of endogenous money in refuting monetarist claims, as his own.

> When I first heard of Friedman's empirical findings, in the early 1950s, I received the news with some incredulity, until it suddenly dawned on me that Friedman's results must be read in *reverse;* the causation must run from *Y* to *M,* and not from *M* to *Y*. *And the longer I thought about it the more convinced I became that a theory of the value of money based on a commodity-money economy it [sic] is not applicable to a credit-money economy*.[11] In the one case money has an independent supply function, based on production cost, while in the other case new money comes into existence in consequence of, or as an aspect of, the extension of bank credit. If, as a result, more money comes into existence than the public, at the given or expected level of incomes or expenditures, wishes to hold, the excess will be automatically *extinguished* – either through debt repayment or its conversion into interest-bearing assets – in a way in which gold could not be made to disappear from existence merely because particular persons find that they have too much of it. (*ibid*., p. 22, my emphasis)

2.7 Moore changes his tune

In a 1984 paper - this time headed with a quotation from Hicks[12] – Moore aligned himself with Kaldor:

> Keynes' intellectual development may be viewed as a long struggle to escape from this theory. He succeeded in doing so imperfectly, and only in stages. The first stage was the realization that the labor market is different from commodity markets, in that wages do not adjust automatically to changes in demand so as to eliminate an excess supply of labor. Hence his opposition to the return to the Gold Standard at prewar parity after World War I. Keynes held that the domestic price level was tied to the level of domestic wages, which do not readily adjust downward so as to keep supply and demand in equilibrium.

[11] Compare with Keynes: "The confusion lay in the futile attempt to ignore the existence of bank money and consequently the inter-relationships of money and bank credit, and to make representative money behave exactly as though it was commodity money" (CW V, p. 15).

[12] "Monetary theory is less abstract than most economic theory; it cannot avoid a relation to reality, which in other economic theory is sometimes missing. – Sir John Hicks, Critical Essays in Monetary Theory" (Moore, 1984, p. 1).

The second stage came with his realization that effective aggregate demand for commodities is determined not by monetary factors but by autonomous investment and government expenditures, combined with the multiplier, which depended on the stable propensity to save out of income. This meant that saving and investment were brought into equality *ex post* through the adjustment of the level of nominal income, and not, as the traditional theory had it, through movements in the rate of interest. This left the rate of interest "in the air," as Keynes himself put it, until he developed the idea of liquidity preference.

This solution represented a *modification* of the Quantity Theory, but not its *abandonment.* Keynes wrote[13] $= L(Y, r)$ or $M = k(r)Y$, where $L(Y, r)$ represents the demand for money as a function of both the level of income and the interest rate, while $k(r)$ represents the demand for money expressed as a proportion of income, which is inversely related to the rate of interest. The demand for money will be greater the lower the rate of interest, so that it was the money market and not saving and investment which was equilibrated through interest-rate adjustment.

Keynes' formulation seemed to imply, both to him and to others, that all the adjustments of monetary to autonomous demand factors came through changes in the velocity of circulation. It was this which led economists in the immediate postwar period to downplay the importance of monetary policy. Perhaps the best illustration of this phase is the now extreme-sounding statements of the Radcliffe committee about the variability of velocity:

> We cannot find any reason for supporting, or any experience in monetary history indicating that there is any limit to the velocity of circulation; it is a statistical concept that tells us nothing directly of the motivation that influences the level of total demand (Radcliffe, 1959, Para. 391).

This formulation also persuaded Friedman that the empirical validity of the Keynesian theory depended on the *absence* of any close correlation between M and Y. If variations in Y result primarily in adjustments of V, then Y and M should not be closely correlated. Friedman's emphatic reassertion of the Quantity Theory of Money was based essentially on the close empirical correlation he found to exist between income and variously defined monetary aggregates, a relationship he found, to the profession's astonishment, more stable than Keynes' multiplier (Friedman and Meiselman, 1963). Friedman interpreted this empirical stability of velocity as implying the existence of a

[13] Moore omits M.

stable demand function for money (Friedman and Schwartz, 1982, Ch. 2). (Moore, 1984, pp. 3-4)

The argument is nearly an exact copy of that published two years before by Kaldor (and four years after the TCSC evidence). Moore did not cite Kaldor as the author of the argument.

In addition, for the first time, Moore attributed precedent for the endogenous money perspective. As in Hicks, Wicksell is accorded this honour: "This was originally developed by Wicksell, in his model of a pure credit economy" (*ibid*., p.7).

For good measure, the charge against Keynes was repeated.[14]

> In Keynes's system there is a developed financial system. As a result it should be nearer the Wicksell model than the Quantity Theory. Nevertheless in the *General Theory* Keynes treats the supply of money, which is taken to be credit money, as exogenous. In order to reconcile his income-expenditure determination of the level of money income with the Quantity Theory explanation, Keynes took the route of stressing the variability of the velocity. (Moore, 1984, p. 8)

In a paper contributed to Hamouda and Smithin (Moore, 1988b), he both elaborated the charge and justified it in an entirely different manner:

> Throughout this chapter [17], Keynes enumerated a multitude of reasons why the rate of interest does not adjust automatically to restore monetary equilibrium at full employment. Money is unique in having a high liquidity premium and low carrying costs. Money has zero or negligible elasticities of production, employment and substitution by the private sector. These arguments were all designed to show why, for money alone, its marginal efficiency need not fall in response to an increase in demand:
>
>> The money rate of interest, by setting the pace for all the other commodity-rates of interest, holds back investment in the production of these other commodities without being capable of stimulating investment for the production of money, which by hypothesis cannot be produced. … Unemployment develops, that is to say, because people want the moon; men cannot be employed when the object of desire (i.e. money) is something which cannot be produced and the demand for which cannot readily be choked off. *(ibid.,*[GT] p. 235)

[14] In the course of this discussion Moore cites a passage from the Scourge of Monetarism, indicating that he was well aware of its existence and that he had read it.

> Keynes was forced into these somewhat unconvincing and metaphorical arguments about the exogeneity of own rates of return on money by his failure to emphasize in the *General Theory* the crucial difference between a commodity money and a credit money economy. His fundamental logical mistake was his willingness to regard 'the quantity of money as determined by the action of the central bank' (*ibid*., p. 247). His famous properties of money, enumerated above, refer only to commodity or fiat money. Zero elasticities of production or substitution by the private sector obviously do not apply to credit money. Had he instead incorporated into the *General Theory* his earlier insights in the *Treatise*, that central banks set the level of interest rates, rather than the quantity of the money supply, so that the supply of credit money becomes endogenously demand determined, he would have been able to reach his central conclusion that interest rates are a monetary and not a real phenomenon, so that the return on money is exogenous and 'rules the roost', much more simply and persuasively. One year later in his 1937 discussion of the 'Finance Motive', Keynes was pushed by his critics to recognize the endogeneity of credit money via the overdraft system. (Moore, 1988, p. *)

This time he was basing his charge, perhaps more plausibly, on a reference from the *General Theory* which appears to imply the supply of money is under the control of the authorities and hence (according to Moore) exogenous.[15] The charge is also changed: Moore now acknowledges that Keynes's treatment was more appropriate in his *Treatise on Money*. But he provided no explanation for Keynes's alleged shift of position in the *General Theory*, which is surely demanded given its importance (indeed I am unaware of the existence of any such work).

> Moore repeated this argument in 1996 (the quotation used by Chick):
>
> As is well known Keynes in the *General Theory* explicitly assumed that the money supply was exogenously determined by the monetary authorities. This was in sharp contrast to the position that he had developed at length in the *Treatise*, where he had maintained that central banks control the level of interest rates rather than the supply of money (Moore, 1984). (Moore 1996, p. 92)

Note also that Moore now claims the position on Keynes that he and Kaldor have asserted has become 'well known' – which I suppose is true enough. Even in 2006, Moore continues to perpetuate/perpetrate this line (though relegating it to an endnote): "In the heat of the debate Keynes appears to have completely forgotten his endogenous credit money model of the *Treatise*, ..." (Moore, 2006, p. 504, n. 45).

[15] As discussed in section 1.3, the authorities having some control does not necessarily make money exogenous – this is surely to mis-understand post-Keynesian economics.

3. Discussion: claims for precedence on endogenous money

The perspective on precedent might usefully be brought together. There are really two distinct arguments. The opening contributions of Kaldor (1970) and Moore (1979) discussed endogeneity as if it were reasonably well known (which it was); with Moore even hinting at precedent being Keynes's. Davidson did not discuss precedent, but there is perhaps the implication that it lies with Keynes. Hicks (1977) attributed precedent for endogenous money to Wicksell.

In 1981 Kaldor referred to Hicks (1977), but did not examine precedent. But by 1982, Kaldor is according himself some precedent (though, as noted, his words are pretty much straight from Keynes). Moore (1984) effectively repeats Kaldor's argument, without mentioning his name. He then joined Hicks in attributing precedent to Wicksell.

I do not intend to revisit the history of endogenous money and/or credit: there are many subtleties. Suffice to say that Schumpeter examined matters comprehensively in 1954, identifying John Law (1671-1729), Henry Thornton (1760-1815) and Henry Dunning MacLeod (1821-1902), all of whom long preceded Wicksell.

4. Discussion: the charge against Keynes

There are really two distinct demonstrations of the claim that Keynes took money as exogenous. The first one is based on velocity and the second is based on Keynes's (alleged) assumptions about money in the context of his theory of liquidity preference.

As seen, Kaldor (reproduced by Moore) argued that Keynes reconciled exogenous money and demand-led activity with changes to the velocity of money. He claimed too that this was the position adopted by the Radcliffe Committee.[16] And, furthermore, that this was the position Friedman was able to refute with such ease. Thus Keynes is accorded responsibility for his own demise.

This particular velocity argument cannot be found in the *General Theory* (though see below). Instead, it can be found in Kaldor's submission to the Radcliffe Committee, where it is not attributed to Keynes. The opening paragraphs of his evidence ran as follows (omitting the footnotes):

[16] E.g. Cottrell (1994, p. 590) '"Money doesn't matter' in the Radcliffe sense".

20. MEMORANDUM OF EVIDENCE SUBMITTED BY MR. NICHOLAS KALDOR

MONETARY POLICY, ECONOMIC STABILITY AND GROWTH

1. The present memorandum deals almost exclusively with basic issues concerning the role of monetary and credit policy in the maintenance of stability in prices and incomes, rather than with questions concerning the technique of monetary management. My excuse for putting forth a paper devoted to elementary propositions is the prevalence of confused thinking in this particular field even among eminent authorities. Yet without a basic understanding of the processes through which changes in the amount of money in circulation influence the level of expenditure and the general level of prices, it is impossible to arrive at any sound judgement concerning the merits of particular methods of monetary management.

I. The Modus Operandi of Monetary Policy

The Supply of Money and the Level of Expenditure

2. It cannot be emphasised too strongly that there is no direct relationship in a modem community between the amount of money in circulation (whatever definition of "money supply" is adopted in this connection) and the amount of money spent on goods and services per unit of time. To proceed from the one to the other it is necessary to postulate that changes in the supply of money leave the frequency with which money changes hands (the so-called "velocity of circulation of money") unaffected, or at least that any consequential change in the velocity of circulation is limited to some predictable fraction of the primary change in the supply of money. There are no valid grounds however for any such supposition. The velocity of circulation of money (or what comes to the same thing, the ratio which cash balances bear to the volume of turnover of money payments, per unit of time) is not determined by factors that are independent either of the supply of money or the volume of money payments; it simply reflects the relationship between these two magnitudes. In some communities the velocity of circulation is low, in others it is high, in some it is rising and in others it is falling, without any systematic connection between such differences or movements and the degree of inflationary pressure, the rate of increase in monetary turnover, etc. Such differences can only be explained in terms of historical developments rather than psychological propensities or of institutional factors, while the movements in the ratio can only be accounted for by the varying incidence of the policies pursued by the monetary authorities. In countries where the authorities pursue a restrictive policy, the ratio tends to fall, and vice versa. Thus in the U.K. there has been a spectacular rise in the velocity of circulation, particularly since 1955 which fully compensated for the failure of the money supply to expand pari passu with the rise in prices and in money incomes. The "money supply" has been kept constant (indeed it has been slightly falling) while the annual percentage rise in the money value of the national product has been as great or greater than in previous years when the money supply was rising. It

> could not seriously be maintained that this change in the velocity of circulation was in any sense an independent phenomenon which happened to coincide in time with the change in monetary policy. It was simply a reflection of this policy: if the supply of money had not been restricted, the increase in the velocity of circulation would not have taken place and it is a matter of doubt, to say the least, whether the course of prices and incomes would have been any different. At any rate the impact effect of any change in the money supply is not on the level of payments at all, but on the velocity of circulation. [italics are Keynes's emphasis, underline is mine]

So, in fact, Kaldor himself made the 'extreme-sounding' (see p. 19 above) argument that Friedman was able to exploit with such ease.

Keynes does not at any point in the *General Theory* argue that the role of the velocity of money is to adjust the supply of money relative to the demand for money. In direct contradiction, he argued that, as far as the short run is concerned, "we can treat *V* as nearly enough constant" (*CW* VII, p. 201). Instead, the velocity of money was re-interpreted in the light of his emphasis on the role of money as an asset: "... the income-velocity of money merely measures what proportion of their incomes the public chooses to hold in cash, so that an increased income-velocity of money may be a symptom of a decreased liquidity-preference" (*CW* VII, p. 194). In my opinion, Keynes addressed the velocity for completeness, given its importance in the classical theories. It played no significant role in the *General Theory*.

The second approach confuses Keynes's treatment of money in the wider context of his theory of liquidity preference with his treatment of credit. Keynes repeatedly drew attention to this type of confusion in the debates after the publication of the *General Theory*: "For it [loanable funds] is concerned with changes in the *demand for bank borrowing*, whereas I am concerned with changes in the *demand for money*; and those who desire to hold money only overlap partially and temporarily with those who desire to be in debt to the banks" (*CW* XIV, p. 207).

The main emphasis of his theory of liquidity preference was on the role of money as a store of value. I have argued elsewhere that the primary aim of that theory was to show that the long-term rate of interest could be set by the monetary authorities; and the wider theory showed that it should be set at a cheap rate in order to foster high private capital investment (Tily, 2006). Within that context the key supply of money is the supply of Treasury Bills, which is clearly an exogenous supply, set by the fiscal authorities. Keynes deliberately did not dwell on credit considerations, but referred the interested reader to the *Treatise*. Again, my view is that he generally assumed that the supply of credit responded to aggregate demand.

> ... the transition from a lower to a higher scale of activity involves an increased demand for liquid resources which cannot be met without a rise in the rate of interest, unless the banks are ready to lend more cash or the rest of the public

> to release more cash at the existing rate of interest. ... This means that, in general, the banks hold the key position in the transition from a lower to a higher scale of activity. (*CW* XIV, p. 222)

Clearly there were confusions and I am unconvinced that the finance motive was a necessary or even helpful development, given the existence of the transactions motive. However, as I have argued elsewhere, there has surely been excessive emphasis on these credit considerations once the fundamental notion that Keynes saw the causality was from interest to activity to money income, rather than the reverse, is recognised.

Nonetheless, even given a fuller treatment of credit money, there would still be very significant aspects of exogeneity to the supply of credit in a bank-money economy. In order for the supply of credit to respond endogenously to demand, the supply of cash from central banks to member banks needs to respond endogenously and there needs to be sufficient eligible assets. Both of these factors are under the control of the monetary authorities. Zero elasticities of production might not apply to credit, as Moore argues, but they do apply to the production of cash and to the issue of Treasury bills.

In the cases of not only asset money but also credit money it is therefore the various financial authorities who have control. Keynes was therefore justified in his assertion on page 247 of the *General Theory* that one of "our ultimate independent variables" is "the quantity of money as determined by the action of the central bank".

5. Conclusion

Keynes was a monetary economist. In destroying the monetary nature of the *General Theory*, the 'Keynesian' economists destroyed the theory as a whole.

Peculiarly, the monetarist challenge offered an opportunity to restore the *General Theory*. But while Davidson began to associate Keynes with a more substantial theory of a monetary economy in the context of uncertainty, others began to deny that association. The original perpetrators of what, for me, amounts to a deception were Hicks and Kaldor, both of whom had been involved in the development of the original 'Keynesian' model. Their contributions afforded them kudos for the development of an endogenous money model that they had originally denied Keynes.[17] With the death

[17] Hicks even sought to redeem his apparent position through *IS-LM*. In 1980 he declared that the model in his famous article did not have money as exogenous:

> For I may allow myself to point out that it was already observed in "Mr. Keynes and the Classics" that we do not need to suppose that the curve is drawn up on the assumption of a given stock of money. It is sufficient to suppose that there is (as I said)
>
>> a given monetary system – that up to a point, but only up to a point, the monetary authorities will prefer to create new money rather than allow interest rates to rise. Such a generalised (LM) curve will then slope upwards only gradually – the elasticity of the curve depending on the elasticity of the monetary system (in the ordinary monetary sense).

of Hicks and Kaldor, Moore has – knowingly or unknowingly – been the resolute standard bearer of the deception. The undoubted influence of these contributions has served greatly to undermine fuller understanding of the *General Theory* and its ability to influence wider macroeconomic debate.

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(Hicks 1980-1, p. 150)
Yet every textbook version proceeded to take money as exogenous; I am unaware of Hicks criticising them as they were published.

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