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The economics of Basil Moore: slow progress toward horizontalism

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While Basil Moore is well known for his view on endogenous money, very little is known about how he got there, and how his views might have evolved through time. This paper examines Moore's early views, pre-Horizontalists and Verticalists, and explains how Moore's views are rooted in a traditional Keynesian Tobin approach. But Moore's sabbatical at the University of Cambridge in 1970, when he met Paul Davidson and Joan Robinson, changed all that. Yet it would take him a full decade to fully embrace endogenous money.

Keywords: Basil Moore, Tobin, endogenous money

JEL codes: E12, B59, E52, E42

'But you can't let it slope upwards a little bit. It has to be horizontal, at the price chosen by the monetary authority.'

Basil J. Moore (see King 1995: 65, emphases in original)

1 INTRODUCTION

Basil Moore was born in Canada in 1933, and received his doctorate at the age of 25, in 1958, from Johns Hopkins University, under the supervision of Fritz Machlup.¹ While well known for his later views on endogenous money, very little is known about how he got there, and how his views might have evolved through time. One thing is certain: even back in the early 1960s, Moore was interested in central banking and monetary policy, and his doctoral dissertation focused on the impact of monetary policy on the profits of Canadian banks.

Moore was one of the leading experts on endogenous money and on post-Keynesian monetary policy more generally, and developed an approach he called horizontalism,²

* A first draft of this paper was presented at the Poznan Summer School, Poland, on 14 September 2018. I would like to thank the participants of that event, along with two referees for their insightful comments.

1. See Rochon (2018) for an Obituary of Basil Moore.

2. The term 'accommodationist' has also been used to describe Moore's contribution to endogenous money, but I prefer the original term of 'horizontalism' for two reasons. First, while Moore (2001) has himself used the term 'accommodationist', his original contribution (1988) was on 'horizontalism'. Second, since all post-Keynesian endogenous theory proponents are accommodationist to some degree, that term then becomes misleading.

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according to which the rate of interest is an exogenous and central-bank-administered price (see also Eichner 1987; Lavoie 2014), and where the creation of money is 'credited and demand-determined', to use his well-known expression. According to Moore, central banks 'were created to insure an elastic supply of reserves in order to maintain system liquidity and prevent financial panics' (Moore 1989b: 12),

His insights have proven to be invaluable in understanding how central banks operate. *Horizontalists and Verticalists* (henceforth *H&V*), by far his most important contribution, has cemented his contribution to post-Keynesian analysis and to the understanding of monetary policy and central banking. Indeed, Moore's classic *H&V*, published more than three decades ago, in 1988, was among the very first publications in the post-Keynes era, along with Robinson (1956), Le Bourva (1962), Kaldor (1970; 1982) and Eichner (1987), to outline a clear alternative to the orthodox approach to money and central banking, prompting Goodhart (1989: 29) to argue 'Basil Moore has an excellent understanding of how banks, the central bank, and the banking system as a whole interact and operate'. Niggle (1989: 1181) compared it favourably to Keynes's *Treatise on Money* (1930) and to *The General Theory* (1936).

Some three decades later, Bindseil/König (2013), in a symposium in the *Review of Keynesian Economics* honouring the 25th anniversary of *H&V*, echo the same sentiment. In their analysis of the impact of Moore's best-known book, they (ibid.: 384) declare: 'We have all become "Horizontalists" in the last 25 years'.³ More specifically, according to the authors,

The heritage left by his book, the intellectual deepness of his thoughts, and the clarity with which his ideas were put forward have, in our view, made *Horizontalists and Verticalists* a key contribution to monetary economics. This book has stood the test of time and is still a must-read for anyone interested in understanding the functioning of the monetary system and the relationship between the banking and financial sector and the central bank. (Ibid.: 389)

And many central bankers have since agreed (see for instance Jakab/Kumhof 2018). In fact, Bindseil (2004: 1) has been equally clear:

Today, there is little debate, at least among central bankers, about what a central bank decision on monetary policy means: it means to set the level of short term money market interest rate that the central bank aims at in its day-to-day operations during the period until the next meeting of the central bank's decision-making body.

Yet the long journey to *H&V*, and to Moore the horizontalist we have come to know, was not an easy one, and was characterized by a rather conventional and even orthodox Keynesian beginning. This does not diminish his later contributions, of course, but it may place in context some of the more conventional aspects of his *H&V*.

In fact, I believe there are three distinct periods in Moore's academic life, starting with a mainstream Keynesian early period and ending with the post-Keynesian scholar we know today.

In this article, I will look at these three phases. In Section 2, I discuss, briefly, two of Moore's earliest contributions, before addressing, in Section 3, the transition from these more conventional contributions to his (very) early – and at times confusing – post-Keynesian journey that would eventually lead him to *H&V*: a period Moore himself has referred to as 'fumbling early attempts' (Moore 1988: xix). In Section 4, I consider

3. According to Moore (see Hein/Niechoj 2010: 9), even Wray, once an avowed structuralist, also declared 'we are all horizontalists now'.

Moore's march toward full conversion to post-Keynesian economics, with the eventual publication of *H&V*.

What this paper does not do, however, is discuss at any great length Moore's later contributions and views on endogenous money (from 1988 onwards): first, these are now well known; and second, I have discussed them elsewhere at great length (see Rochon 1999). For the same reasons, I will not be discussing the debates between horizontalists and structuralists (see Rochon 1999; but also Rochon/Rossi 2017).

2 THE EARLY YEARS: 1958–1970

Basil Moore, the post-Keynesian scholar who can in many ways be considered the father of the contemporary theory of endogenous money, had a long and distinguished career, but one that is not rooted in post-Keynesian economics. Indeed, the early period of Moore's academic life is dominated by a rather conventional and mainstream Keynesian view of economics, and of monetary theory in particular.

This early period of Moore's career is dominated by his textbook on finance (1968), as well as two short journal articles. There is no doubt that banks take a prominent place in Moore's analysis, as indicated above. For instance, in a three-page commentary entitled 'Asset management and monetary policy', which appeared in *The Journal of Finance* (1969; in the same issue as a paper by Minsky!), Moore argues that '[p]roper banking practice is to accommodate legitimate (i.e. nonspeculative) business demand for short-term credit' (ibid.: 242). He is thus aware of what he calls the 'accommodation principle' (ibid.: 242). Here, we get a glimpse of the role of banks in accommodating business demand for credit. In many ways, this is reminiscent of Keynes's assessment where credit 'is the pavement along which production travels' (Keynes 1930 [1971]: 197). This is also reminiscent of Moore's later views where he underlines the importance of the credit-worthiness (that is, legitimate) demand for bank credit (see Moore 1989: 66). Yet there is an important difference: while there is an appreciation of the role banks play in this process, Moore did not have a theory of endogenous money in mind, and lacked an appreciation of 'the nature' of money.

Endogenous money, as defended by post-Keynesians such as Rochon/Rossi (2013) and Lavoie (2014) among others, suggests the following two fundamental arguments: first, banks are never constrained in their lending activities, except by the demand for credit-worthy credit, but surely not by deposits or reserves. The balance-sheet causality must be read in reverse: bank assets determine bank liabilities. Second, the rate of interest is a price set and administrated by the central bank, at whatever level is consistent with its overall economic objectives, and they stand prepared to accommodate the needs of the banking system.

Yet neither of these assumptions appears in Moore's early work. For instance, in this particular article, Moore discusses the 'accommodation principle' where 'demand for bank loans determines bank portfolio behavior' (Moore 1969: 242), and the 'profit maximization principle' where 'commercial banks' responses to market forces determine their portfolio behavior' (ibid.: 242), which he likens to Tobin's theory of asset management under uncertainty. He begins by stating that these two models are not mutually exclusive, as long as the legitimate demand for loans is not greater than the available supply of loans by banks (ibid.: 242). In other words, banks are supply-constrained in their lending activity. In this sense, the 'accommodation principle' is a special case, and not the general case. This is consistent with what I have called elsewhere 'credit-led but supply-determined' (Rochon 1999): credit is important, but the causality is still read from liabilities to assets.

These views are consistent with what Tobin (1963) called the ‘New View’: ‘neither individually nor collectively do commercial banks possess a widow’s cruse’ (ibid.: 412).

The main publication during this period is Moore’s book, *An Introduction to the Theory of Finance*, which appeared in 1968 (translated into Japanese, Italian and Spanish) and is an attempt to understand the complex world of financial assets and financial institutions. He devotes four chapters specifically to banking and monetary policy. Yet the book is profoundly conventional, and the views described above form the basis of the views in this book. In fact, Moore defines himself in the book as a ‘Keynesian’, which explains his criticism of Friedman, meaning changes in monetary policy carry short-term consequences on real variables. He contrasts this to neoclassical theory where changes in monetary policy are neutral (Moore 1968: 220–222).

With respect to commercial banks, Moore makes clear that they are mere ‘financial intermediaries’ (ibid.: 158) which only lend the deposits that have been entrusted to them (a ‘loan to the bank’); and that banks bring lenders and borrowers together (ibid.: 161). Moreover, central banks can control the monetary base as well as influence bank-lending in a number of ways, including curtailing reserves (ibid.: 201 and 240) through open-market operations (ibid.: 244–246).

Overall, Moore’s views are deeply rooted in Tobin’s Keynesian economics, an interpretation supported by Culham/King (2013: 393), who argued: ‘There is no hint of endogenous money in his book on *The Theory of Finance*, where he cites as influences Lloyd Metzler and Don Patinkin, with James Tobin as a “final intellectual godfather” (Moore 1968: vii), or in his *Economic Journal* paper on optimal monetary policy (Moore 1972)’. Moore’s own assessment (see Hein/Niechoj 2010: 8) was that this early book was indeed ‘very much influenced by James Tobin’s portfolio theory’.

3 THE YEARS OF AWAKENING: 1970–1977

Things started to change in 1970, a year that began with his sabbatical as a ‘Senior Visitor’ at the University of Cambridge, which Moore described as ‘the sun coming out’ (Hein/Niechoj 2010: 8). In King (1995: 64), Moore claims that ‘that’s when I first publicly tied my flag to the endogenous money pole’.

However, as I will argue here, this is not exactly how things unfolded. While there is plenty of evidence to suggest Moore’s horizontalist roots are developing, to be clear, Moore’s roots are still in their infancy. Moore was unwilling or unable to fully embrace endogenous money, or at the same time recognize that money may be endogenous.

In fact, we can say this is the beginning of Moore’s ‘long struggle of escape’, and Moore himself described this period as his ‘most formative period’ (see King 1995: 64). While at Cambridge, he immersed himself in reading Keynes, including *The Treatise on Money* (1930) where ‘the idea of endogenous money is explicitly there’ (Moore, in King 1995: 65).

Nevertheless, there are still some ambiguities in his approach to money during this period, which I will try to explain below. This said, it is clear that while his full conversion to horizontalism would take almost a decade, the influence of his Cambridge sabbatical was profound. But it would be a gradual conversion, one where ‘the picture began to increasingly unfold’ (King 1995: 65).

One fundamental characteristic of Moore’s approach to monetary matters, then as later in his career, is his steadfast opposition to Friedman and the quantity theory of money (QTM). As Moore explains (see King 1995: 64–65), he was ‘always uncomfortable’ and ‘always critical’ of Friedman. Yet Moore believed that placing banks at the heart of his analysis and making them ‘special’ somehow weakened the core proposition of

the QTM. This started to change, however, with his Cambridge sabbatical when he met and had meaningful exchanges with Joan Robinson,⁴ Paul Davidson, and, to a lesser degree, Nicolas Kaldor – individuals in whom he saw a more critical and grounded rejection of Friedman's views. In his own words: 'I was primarily trying to criticize Milton Friedman's Monetarism. Friedman was the enemy' (in Hein/Niechoj 2010: 8). As for Kaldor, while Moore had limited contact with him (King 1995: 64), Kaldor's horizontal approach, which was taking root (see Kaldor 1970), influenced him very much, as did Kaldor's reading of the QTM in reverse. This was key to Moore's conversion. As he says, once you recognize the reverse causation, 'the rest became very simple' (see Hein/Niechoj 2010: 8).

Moore's transition away from conventional thinking was in some ways more the result of luck than design, thereby raising the question: did Moore become a post-Keynesian by accident? While it is true that his office in Cambridge was in between those of Joan Robinson and Paul Davidson (who was using Richard Kahn's office), Moore was not drawn to Cambridge for any particular or *a priori* intellectual reason other than the fact that he was always an admirer of England and its institutions,⁵ and that he had a friend there (Alister Sutherland), whose office he occupied during his sabbatical. But there was no overall agenda to work with Cambridge economists or their approach to economics.

Nevertheless, the timing was perfect, as Davidson was in Cambridge at the time of writing his *Money and the Real World* (1972). There was an instant friendship between the two, and it is this friendship, more than anything else, that started Moore's conversion to post-Keynesian economics. According to Moore, 'The reason why I became a post-Keynesian was that I became a good friend of Paul's [Davidson] and was influenced by his views' (Hein/Niechoj 2010: 8). They had numerous conversations about money, banking and finance; and while at Cambridge, Moore also attended seminars by Robinson and Kaldor, among others.

According to Davidson, 'I believe our numerous discussions in Cambridge plus lectures by Kaldor and Joan Robinson that we attended finally converted Basil to a more Post Keynesian approach and led him to the concept of endogenous money'.⁶ This assessment was confirmed by Moore (see Hein/Niechoj 2010: 8): 'Paul is one of the people I most enjoy talking economics with. At that time he was writing his book *Money and the Real World* and we talked a lot about monetary and financial theory'.

Furthermore, in *H&V*, Moore claims that '[m]y greatest intellectual debt is to Paul Davidson' (Moore 1988: xix); and in *Money and the Real World*, Davidson thanks Basil 'for the many splendid discussions and comments on various aspects of money and portfolio theory' (Davidson 1972: xv).⁷

Moore's 'years of awakening' are noticeable in a few noteworthy publications, including his 1972 *Economic Journal* article, referred to above by Culham/King (2013), as well as an article – or rather a three-page note – in *The Review of Economic Studies* (1974),

4. Rochon (1999) and Lavoie (2014) have both argued that Robinson (1956) had a full understanding of the monetary circuit and the essence of Keynes's 'monetary economy'. In this sense, can we assume Moore had these discussions with her? In a private email, Davidson tells me Robinson would not have conversations with colleagues, but requested copies of their work be left on her desk, and she would return them with detailed notes. Davidson believes Moore did this on occasion, but is unaware of the nature of those notes.

5. This version was told to Rochon in a private email by Moore's wife, Sibs Moore.

6. Stated in a private email to Rochon, 18 April 2018.

7. Culham/King (2013: 393), however, cast doubt on Davidson's early influence on Moore, since Davidson was more interested in the instability of the money-demand curve and a shifting LM curve than in endogenous money. The bigger influence could have been Moore's reading of *The Treatise on Money*, while at Cambridge (see King 1995: 65).

an article in the *Canadian Journal of Economics* (1973a), and a rather ambitious introductory textbook (1973b), *An Introduction to Modern Economic Theory*. Let us consider these in turn.

With respect to Moore (1972), it was an interesting attempt at introducing some aspects of endogenous money for the first time, and in the article, Moore cites approvingly Kaldor (1939; 1970) and Cramp (1970).⁸

According to Moore (1972: 116): 'If the level of interest rates is the control instrument, a monetary policy that reduces the variance of income over time requires procyclical movements of interest rates, implying that the money stock becomes an endogenous function of current disturbance'. In this article, there is even a section entitled 'Endogenous money supply' (ibid.: 123). In this sense, Culham/King's (2013: 393) assertion that '[t]here is no hint of endogenous money in ... his *Economic Journal* paper on optimal monetary policy (Moore 1972)' seems mistaken. There is clearly the notion of endogenous money in Moore's 1972 paper. The confusion, however, may come from the fact that Moore seems to think that allowing money to be endogenous is a policy choice of central banks, as exemplified by the following quotes:

Whether the money stock or interest rates are the optimum control instrument depends in general on the structure of the system, the relative magnitude and covariances of disturbances in different sectors, and the relative costs of stochastic movements in the money stock and in interest rate. (Ibid.: 116, emphasis added)

The degree to which the money supply is endogenous may be represented by incorporating a variety of simple feedback mechanisms into the model. Once a policy rule is stipulated, the money supply becomes an endogenous policy variable. (Ibid.: 123, emphasis added)

If as appears probable the costs of stochastic jumps in interest rates are considered larger than those of stochastic swings in the money stock, *the authorities will be driven to choose interest rates as the primary control instrument.* (Ibid.: 136, emphasis added)

So while there is clearly a discussion of endogenous money in this early article, what is evident is that there is still some hesitation to fully embrace the concept, as money's endogeneity appears to be at the discretion of the central bank: money's endogeneity still seems to be a choice for central banks. Moore's hesitation confirms his acceptance of what Rochon/Rossi (2013) call the evolutionary approach to endogenous money: for Moore, money is not endogenous by nature, but rather because the central bank allows it to be. This is a theme which Moore will carry with him all the way to *H&V*, as discussed below.

Nevertheless, this paper is important in recognizing Moore's transition – or conversion – from accepting the exogeneity of money to the possibility that money *could be* endogenous. Moore, however, may not have fully recognized this. According to him, 'I don't actually know about my conversion on money. I can't remember any sort of "Eureka" sensation – you know, this is really the way money causality goes. ... When did I first start seeing things this way? I just don't know' (quoted in King 1995: 64–65).

Moore's own confusion, however, can be explained by arguing that while his Cambridge sabbatical had an immediate impact on his overall views, his acceptance specifically of

8. Interestingly enough, the paper was published in the same issue of the journal as Davidson (1972) on 'Money and the real world'. In a private email to Rochon, however, Davidson believes the simultaneous publication was a coincidence. Davidson recalls, however, that his own paper was submitted sometime in 1971. If this is correct, and Moore submitted the paper roughly at the same time, it suggests Moore's paper was written perhaps while still at Cambridge or shortly after his sabbatical, indicating indeed a quick conversion to an appreciation of endogenous money.

money endogeneity was rather gradual – a combination perhaps of being unwilling to fully let go of old ideas, and to embrace new ones. Moore recognizes this conflict and refers to his ‘early attempts’ in developing a theory of endogenous money. For instance, in the preface of *H&V* (Moore 1988: xix), Moore thanks Charles Goodhart, ‘my favourite real-world central banker for his encouragement of my fumbling early attempts to develop the notion of monetary endogeneity while a Visiting Scholar at the Bank of England in 1978–79’.⁹

While Moore dates his ‘fumbling early attempts’ to 1978–1979, elsewhere he claimed by that date that he had ‘clearly come round’: ‘I wrote a piece for Eichner’s little book in 1978. So by then I’d clearly come round’ (King 1995: 65). Moore (2001: 11) also claimed that he started writing *H&V* only after he had ‘thoroughly persuaded [him]self of the correctness of the endogenous money hypothesis’. Leaving aside when precisely he had ‘come round’, perhaps in 1978, it is undeniable that the ideas had begun to spring up as early as 1972.¹⁰

This said, Moore’s ‘conversion’ during this period goes beyond money, into theories of saving, investment and growth. Two papers in this period stand out (Moore 1974 and Moore 1975).

In ‘The Pasinetti paradox revisited’ (Moore 1974), a paper published in *The Review of Economic Studies* in April 1974, Moore discusses Pasinetti’s growth models with differentiated saving rates and social classes, where ‘The profit rate and the profit share depend only on the saving preferences of capitalists, while the saving preferences of all others [*sic*] groups (workers) are irrelevant’ (ibid.: 297). While the brief three-page note was a summary of the model and its adjustment mechanism, Moore nevertheless concludes: ‘to the extent that wealth ownership is highly concentrated, the rate of growth of total wealth in the short run will in fact be closely related to the saving behaviour and returns ... of those who own most of the chips’ (ibid.: 299).

He returns to a discussion of growth models in 1975, in a paper published in *The American Economic Review* (see Moore 1975), in which he thanks Paul Davidson and Joan Robinson, and refers to Kaldor (1956; 1966), Kregel (1971), Robinson (1971), and even to Kalecki. (Although Kalecki does not appear in the references, Moore refers to his aphorism that ‘[w]orkers spend what they get, capitalists get what they spend’.) The paper, as he says, was conceived while he was a ‘Senior Visitor to the Economics Faculty at Cambridge’ (Moore 1975: 872).

Yet, in discussing these various growth models, Moore is trying to say that both the neoclassical growth model and the Kaldor/Cambridge growth model are valid: ‘The logic of the present argument in a sense supports both views. The neoclassical conclusions of the control of the rate of accumulation by saver preferences is validated in principle, albeit through a quite different mechanism’ (ibid.: 881). He had reached a similar conclusion in Moore (1973a: 543):

The logic of the present argument thus leads back to the neo-classical conclusions of the control of the rate of capital accumulation by saver preferences, albeit through a quite different mechanism. ... The mechanism by which this control of the rate of capital accumulation by wealth owners operates though the valuation ratio. ... A fall in the valuation ratio raises the cost of finance reducing the amount of investment undertaken by firms acting in the interests of their owners.

9. Interestingly enough, Goodhart (1989) would later accuse Moore of being ‘too horizontal’.

10. To add to the confusion, in conversation in South Africa in 2017, Moore told me that he was ‘close’ to endogenous money as far back as 1968, with his book *An Introduction to the Theory of Finance*. I don’t think this is correct, and may be the result, as stated above, of seeing banks as ‘special’ in the credit lending process.

By this time, Moore is if anything halfway toward his conversion not only to endogenous money but to post-Keynesian economics altogether. However, these intermittent years clearly show Moore's own 'long struggle of escape'.

Let us now turn to a discussion of his *An Introduction to Modern Economic Theory*, published in 1973 (Moore 1973b). At best, this book can be described as confusing when it comes to a discussion of money and monetary policy; in other words, the vestiges of orthodox thought abound.

Written as a textbook for undergraduate students, Moore covers the usual topics in both micro- and macroeconomics. From the start, he sets a very conventional tone, acknowledging the problems caused by scarcity. Indeed, in the opening chapter, he refers to the 'fundamental fact of scarcity' and describes economics as 'human needs and the limited means of satisfying them' (ibid.: 5). His analysis can be set within what Schumpeter called 'real analysis'. For instance, his 'circular flow of income and output' figure (ibid.: 12, fig. 1-2) does not contain banks or a central bank. Moore goes even further by accepting the barter origins of money (ibid.: 378).

In terms of monetary theory or policy, again the analysis is rather conventional, prompting King (1995: 64) to correctly argue the book is 'very largely an orthodox Keynesian text'.

Regarding money and monetary policy specifically, Moore accepts the exogenous nature of the money supply as determined by the central bank and the various tools at its disposal, and the money-multiplier model where banks can only lend their deposits and where the rate of interest is set by loanable funds. There are zero glimpses in this analysis of the 'horizontalist Moore', which would come to dominate and frame the post-Keynesian debates on endogenous money the following decade. In fact, if anything, Moore was a verticalist, as exemplified by the drawing of the money-supply curve as vertical (see Moore 1973b: 345, for instance).

More specifically, Moore argues that '[c]entral banks have a variety of techniques to control the volume of commercial bank intermediation. The most important is *open market operations* Changes in bank cash reserves due to open market operations induce equal proportionate changes in the volume of commercial bank loans and deposits' (ibid.: 395, emphasis in original). With a reduction of required reserve ratios, the volume of bank intermediation would expand.

Moreover, a 'monetary change' is shown to be a shift of the vertical money-supply curve (see ibid.: 360 and 369); and Moore accepts the concept of the liquidity trap: 'If the economy were operating in the Keynesian range, the effect of an increase in the money stock on both interest rates and income would be slight. Increases in the stock of money would be largely hoarded' (ibid.: 369).

With respect to the impact of reserves, Moore notes that '[a] reduction in the required reserve ratio provides commercial banks with excess reserves, which will be lent out to expand their assets and liabilities' (ibid.: 396); and he adds: 'Both banks and nonbanks lend only the currency entrusted to them by their depositors and creditors' (ibid.: 385). Moore is therefore embracing the conventional money-multiplier model. It is difficult to see how banks are any different from non-banks.

Moreover, we are far from Moore's statement in *H&V* that the multiplier is equal to 1:

Changes in the stock of money ... relative to the demand for money determine changes in the level of interest rates These rates in turn affect the cost of finance and so the level of investment Changes in investment through the multiplier effect relationship generate larger changes in the level of income and output. (Ibid.: 360).

These passages contrast with not only the horizontalist Moore but also with Moore's thinking at the time, as shown in the preceding discussion. In other words, the book appears to be clearly

a step backwards. A saving grace, perhaps, is that Moore is trying to argue that there is a difference between theory and the real world. For instance, he claims that profit maximization is only in theory, while in practice firms behave differently and are subject to uncertainty (ibid.: 105). He recognizes managers may have different objectives than firms (separation of ownership and control, ibid.: 126); that under uncertainty, profit maximization breaks down, replaced with 'share price maximization' (ibid.: 128); and while acknowledging 'general equilibrium in a market system is brought about by changes in market prices', he also recognizes that 'real-world economies never reach a position of general equilibrium' (ibid.: 252).

There are also a few passages worth quoting where we see hints of some critical reflection: 'But this regular association between changes in money and income does not prove that the direction of causality runs from money to income. Increases in the money stock, even though under the control of the central bank, respond to increases in the demand for money and credit' (ibid.: 412).

Moreover, Moore argues that central banks respond to activities in markets because they want to keep interest rates stable, otherwise it could be problematic. Such increases in interest rates are due to an increase in spending and the increase in the demand for credit. So central banks will accommodate: the vertical money-supply curve shifts right to keep interest rates stable. This is not endogenous money by any means, but there is an idea of an accommodating central bank.

But this reaction by central banks is a policy choice: 'The central bank has the choice of accommodating the demand and permitting the stock of money to increase, or of doing nothing' (ibid.: 412), which is reminiscent of a similar passage in Moore (1972). And if the central bank does not respond, there is a banking crisis: rates increase too much, firms go bankrupt, unable to pay back their past loans, and are unable to get new ones.

So, for Moore, money seems to become endogenous because of the fear of crises: 'in view of these alternatives, it is not surprising that increases in the money stock became endogenous' (ibid.: 412). It is, in a sense, an 'evolutionary' explanation of endogenous money (Rochon/Rossi 2013).

Yet these are only a few passages in an otherwise conventional book with exogenous money and a vertical supply curve. As King (1995: 64) indicates, it is a fairly orthodox Keynesian book with 'a few signs of some Post Keynesian heresy'.

How, then, can we reconcile these conventional passages with Moore's views in 1972? One possible explanation is that, while the book was published in 1973, it was mostly written in 1969 before Moore's visit to Cambridge, as he acknowledges: 'The Textbook was written before I went to Cambridge' (see King 1995: 64). In this sense one can assume that, being all but complete prior to his Cambridge sabbatical, Moore might have made some very last-minute amendments to his 1973 textbook that reflected his change of heart since it had been written, but only succeeded in getting a few passages into the book. The alternative was to rewrite the entire book, which may not have been a possibility.

4 THE POST-KEYNESIAN ERA (1978–1988)

As suggested above, Moore's early career placed banks at the centre of an economic process, but he lacked a full understanding of endogenous money. As Moore was introduced to post-Keynesian ideas, starting in 1970, he saw these as possible scenarios, often as a policy choice: the central bank could choose to let the money supply adapt endogenously.

But by the time Moore finished his position as a visiting scholar at the Bank of England, he claimed to have 'clearly come round' (see King 1995: 65). In late 1978, he published his

now famous contribution in *Challenge* magazine, reprinted in Eichner's (1979) *Guide to Post-Keynesian Economics*, as well as a paper in the *Journal of Post Keynesian Economics* on 'The endogenous money stock' (1979a). These are the first papers on money and monetary policy written since his 1972 paper.

There are several passages in Moore (1978) to suggest this conversion was indeed complete – themes that would dominate the years leading up to *H&V*. Moore has now come to accept two key elements of endogenous money: (i) banks are never constrained in their lending activities, except perhaps by creditworthy borrowers; and (ii) central banks must accommodate banks.

Regarding the first element, banks are always special, but now Moore sees the causality running from assets to liabilities: this is key to his conversion as it rejects the orthodox money-multiplier model. In other words, loans create deposits: 'bank lending is the proximate and predominant source of monetary change' (Moore 1979a: 68) – a theme he returned to often: 'In all modern capitalist economies the total volume of bank deposits is effectively determined by the demand for bank credit. ...Both the [monetary] base and money stock are endogenous' (Moore 1989: 66).

Regarding the second argument, Moore no longer argues that central banks can choose to control the money supply or the rate of interest: that policy choice, present in 1972 and 1973, is absent: central banks now no longer have the luxury of choosing. It is for this reason that Moore now ranks 'the supportive responsibilities of the central banks above its control duties' (Moore 1978: 47): failure to let the money supply adapt would result in instability. 'The endogeneity of the money stock [results] from the need of the central bank to validate the rate of growth of money wages' (ibid.: 44). He continues: 'the historical fact [is] that the purpose of central banks has been to accommodate the stock of money to changes in the needs of trade' (ibid.: 47).

But [central banks'] overwhelming short-term commitment – in fact their very *raison-d'être* – is to a healthy and stable financial system. It is this which induces them to make the reserves available to support all reasonable demands for credit, since the alternative would be financial chaos, spiralling interest rates, and a wave of bankrupt firms. (Ibid.: 51).

This theme is a core principle of *H&V*: 'Central banks do not have it in their power to nonaccommodate, that is, to constrain the supply of credit money quantitatively. All central banks can do is set the price and terms at which they supply fiat money on demand to the financial system' (Moore 1988: xii).

Moore can finally offer a complete rejection of Friedman and *manna from heaven*: he moved from an emphasis on the asset side only, to one where the causality now goes from assets to liabilities.

5 CONCLUSION

Moore's foray into endogenous money sparked a decade-plus-long debate among post-Keynesians, to which Moore responded with a series of articles (1983; 1984; 1985a; 1985b), which eventually culminated in his book, *Horizontalists and Verticalists* (1988), which furthered these debates and intensified some of the divisions among post-Keynesians – the so-called horizontalist and structuralist debates.

This article did not look at these debates, nor did it propose any detailed reading of Moore's *H&V*. Instead, it concentrated on the *early* Moore, so to speak, and his contributions in the late 1960s and early-to-late 1970s. I argued that before 1970, Moore was a conventional Keynesian, whose views on money and banks were wholly in line with

Tobin's New View. Yet his sabbatical at Cambridge began a process of deep rethinking, and his friendship with Paul Davidson was a trigger in his gradual conversion to endogenous money. While the impact was certainly instantaneous, it would take Moore almost a decade to 'come around' to a fully horizontalist position.

In the end, his contributions to post-Keynesian economics and to monetary policy in particular cannot be overemphasized. There can be no doubt that 'we are all horizontalists now' and that '[c]entral bankers have by now largely buried "verticalism", at least when it comes to monetary policy implementation' (Bindseil/König 2013: 385). Gradual or not, Moore's horizontalism had a profound impact on post-Keynesian economics, and perhaps, indeed, on monetary policy.¹¹

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11. In a private conversation, Basil once told me that the idea of the Taylor rule was really all in his book, and that John Taylor had got the idea from having taken his classes. I found no evidence of this to be true, but it does raise the issue of Moore's ongoing tergiversations on the topic.

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