

# The *General Theory*, Monetary Policy, Investment and the Long Period

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If we play with dear money on the ground that it is ‘healthy’ or ‘natural’, then, I have no doubt, the inevitable slump will ensue. We must avoid it, therefore, as we would hell-fire. (CW XXI, p. 389)

## 1. Introduction

Over the first years of the twenty-first century there has been a remarkable consensus over monetary policy. A central bank, preferably independent, manipulates discount rates to keep consumer price inflation low, preferably according to a specified target. Such an approach may have emerged from, or be justified by, New Keynesian macroeconomics, but sees few rivals from within the broader neo-classical paradigm. The same policy also commands the support of less orthodox schools, in particular some (but not all) post-Keynesian economists. The latter may, however, qualify their position so that policy was right for the wrong reasons, insofar as it is justified by a theory judged to be incorrect (though it is a remarkably happy coincidence).

John Maynard Keynes is associated with this policy position, trivially through the naming of the paradigms under question, but more substantially through the nature of policy. Whether justified with output gap and natural rate analysis or through more direct appeal to demand inadequacies against certain capacity constraints, policy involves manipulating *demand*. In contrast with previous interpretations of Keynes, for both schools, demand management is based on monetary policy. This is of course a substantial *volte-face* on the part of the economics profession and policymakers as well as on their interpretation of Keynes. Previously monetary policy was held to be ineffective and demand management

exclusively focussed on fiscal policy. Now small manipulations of discount rates are imagined to set prosperity right.<sup>1</sup> (While not within the scope of this article, the orthodox school might restrict the use of fiscal policy more than the heterodox.)

The acceptance that much of Keynes's work was concerned with monetary policy is a great step forward from previous interpretations. However, the argument of this paper is that this development only scratches the surface of the leading role that Keynes perceived for monetary policy. And it leads to policy that is still, I fear, entirely and disastrously wrong.

Our perspective on Keynes has been distorted to an extreme extent by the 'Keynesian' interpretation. Keynes may have supported fiscal policy to ease recession, but his fundamental concern was using monetary policy to foster high activity and prevent recession. The most important mechanism was raising fixed capital investment by setting low interest rates across the spectrum. As Kahn put it: "... Keynes, in his *General Theory*, writes very little about public expenditure as a means of increasing employment. His main concern was that private investment should be adequately stimulated by low rates of interest" (Kahn, 1978, p. 2).

Keynes's interpretation of the role of investment was absolutely central to his understanding of the operation of a free market economy. It is perhaps as central to his scheme as real wages are to the classical. To set his theory of investment aside is to set the large part of the *General Theory* aside. In the discussion below, the *General Theory* is presented as emerging from his deconstruction of the classical interest–investment theory (section 3).

His theory of investment requires going beyond the short-period analysis that has been associated with Keynes's economics, with investment critical to a cycle process that unravels in a longer period. This cycle process indicates too a real constraint to economic expansion, but one based on yields of capital, not the labour market (section 4). Moreover this presentation of his theory demands re-visiting classical notions of equilibrium in the sort and long run, and relating them to investment rather than the labour market.

For Keynes high interest was the cause of the Economic Problem. High interest inhibited investment, but also lay behind the economic cycle. According to my own extension of Keynes's theory, debt and capital market inflation will be the consequence of excessive expansion under dear money (section 5). It is the bursting of these balance sheet inflations that leads to the collapse of investment expenditure that normally triggers economic recession.

In section 6, I trace how this investment perspective has been lost from most post-Keynesian analysis, through contributions of Shackle and Davidson in particular. In parallel, a pre-occupation with the same inflationary concerns of the neo-classics has emerged. For Keynes, inflation was a potential side-effect of growth; neo-classics now have it as inhibitor to growth. It is remarkable that post-Keynesians have been able to

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<sup>1</sup> There is, however, a good deal of back-tracking in the wake of the present financial crisis.

sign up to an agenda so opposed to Keynes's scheme. They manage to do so even in spite of their rejection of the long-run equilibrium, from where neo-classics can see inflation arise.

The so-called 'new consensus monetary policies' place most emphasis on the discount rate as the mechanism for economic management. The underlying rate of interest at which investment is financed goes far beyond the policies governing the discount rate. In section 7, matters are seen as two broad eras. In the post-war 'golden age', rates were relatively cheap and capital expenditures vigorous. This era surely vindicates Keynes's theory of investment, but nobody sees it as such. The world economy has operated under dear money since financial liberalisation in 1980. Keynes's theory should lead us to regard this consideration – above all others – as responsible for the return of the Economic Problem. If the interpretation of Keynes's cycle theory is correct, present events in financial markets potentially reflect the culmination of near to forty years of dear money and should be a matter for very grave concern,

Finally, in section 8, I turn to the actual experience of inflation in the 1970s that has so galvanised the professional economist. From a monetary perspective, it seems the both financial and political constituencies bore a good deal of responsibility for that which has been attributed to the wage-earner and to Keynes.

## **2. Monetary priors**

The discussion in this paper is concerned primarily with a theory of activity based on investment and takes two main monetary considerations as priors. First, for the great part of the discussion, the money supply is assumed to be endogenous, or more specifically, to accommodate effective demand. Second, the long-term rate of interest is exogenous. The first consideration should be uncontroversial to post-Keynesians; however, many might not attribute the notion to Keynes (see Chick, 2001 and Tily, 2007a, available on request). I have explored the second consideration in Tily (2006). The exogeneity of interest was the key monetary conclusion of the *General Theory*. The theory of liquidity preference also moved emphasis away from the short-term rate of interest to the long. In parallel, Keynes came made his celebrated escape from the unique long-run equilibrium of classical economics.

## **3. Keynes's theory in the short period and the long**

Keynes inherited two long–short distinctions from Marshall: first, a theoretical notion of a run, in particular the notion of a long run:

This is the real drift of that much quoted, and much-misunderstood doctrine of Adam Smith and other economists that the normal, or “natural,” value of a commodity is that which economic forces tend to bring about in the long run. It is the average value which economic forces would bring about if the general conditions of life were stationary for a run of time long enough to enable them all to work out their full effect. (Marshall, 1920 [1890], Book V, Chapter 111, para. 23)<sup>2</sup>

Most would understand the classical long run in these terms even today. Second, Marshall delineated between short-period analysis, which was based on the assumption of fixed capital stock (but not fixed production of capital goods), and long-period analysis, when the capital stock could change:

as regards short periods ... [t]he supply of specialised skill and ability, of suitable machinery and other material capital, and of the appropriate organization has not time to be fully adapted to demand; but the producers have to adjust their supply to the demand as best as they can with the appliances already at their disposal. (Marshall, 1920 [1890], Book V, Chapter V, para. 33)

In long periods on the other hand all investments of capital and effort in providing that material plant and organization of a business . . . have time to be adjusted to the incomes which are expected to be earned by them. (*ibid.*, para. 7)

While Keynes adopted the analytical technique, much of his writing was pre-occupied with classical notions of the long and short runs. Unfortunately he tended to use period when Marshall and most of today’s economists would use run. It is difficult and dangerous to use these notions to describe aspects of Keynes’s theory and its evolution, but I fear it is terribly important. Moreso because subsequent interpretations have in most cases served to muddy the waters greatly.

The commonest notion is that with the *General Theory* Keynes escaped from the classical and theoretical long run and derived a theory of the short-run behaviour of the economy. In its worst variant: he realised an economy could operate in a short-run that was not equivalent to the classical long run. This is nonsense for many reasons, but most obviously because, from the first time that Keynes put pen to paper, his policy concern was always concerned with the ‘short run’. Moreover a short–long distinction can be found as long ago as 1752 in Hume (1955, [1752]). Marshall’s characterisation of short and long has already been discussed (Keynes gave him precedence). In 1929, Keynes supervised Kahn's PhD dissertation on the ‘Economics of the Short Period’ (published only in 1989). The reality was that most (all?) economists accepted a distinction between the operation of an economy as defined by the long run and the reality of its day-to-day operation.

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<sup>2</sup> Keynes would later examine what Marshall meant: *CW XXIX*, pp. 54-5: see footnote 6.

Keynes's economics began with *Indian Currency and Finance*. In this and his subsequent contributions up to and including the *Treatise on Money*, the concern with the short run is implicit. He discusses economies where monetary policies are inappropriate and causing economic damage; most categorically in *The Economic Consequences of Mr Churchill*. The greatly abused 'in the long run we are all dead' belongs to this period of his thought (to 1923 to be precise). His early policies of credit control through the discount rate, and management of foreign exchanges, were aimed at preventing short-run malfunction. A properly managed economy could operate according to or close to its long-run equilibrium; at this stage, Keynes accepted the validity and optimality of this classical state of affairs. His policies of these early years correspond very closely to those now known as the New Consensus, and were even justified in a similar manner (to the post-Keynesian variant at least). (However, today any domestic monetary autonomy is merely facilitated through floating exchanges.)

His *Treatise* was his first substantial attempt at a theory of the relationship between short-run malfunction and the long-run ideal. His central mechanism was based on a development of the classical theory of interest. He argued that saving and investment could diverge: this would then lead to a divergence between 'market' and 'natural' rates of interest. Keynes appeared to take the latter as a - if not the - manifestation of the underlying long-run equilibrium of classical economics. As is well known, the attempt was a failure. His policy interest was however firmly fixed on the long-term rate of interest, rather than the discount rate, as a - if not the - governing factor in the economic situation.<sup>3</sup>

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<sup>3</sup> This can be seen in the closing chapters of the *Treatise* itself (a., published in October 1931, but the key passage on the rate of interest explicitly referenced as written in 1930), in correspondence with Robert Brand during the course of the drafting of the Macmillan Report (b., dated 7 April 1931) and, in an explanation of the cycle, in extracts from his Harris Foundation lectures (c., delivered in June 1931).

a. I am writing these concluding lines in the midst of the world-wide slump of 1930 ...

Thus I am lured on to the rash course of giving an opinion on contemporary events which are too near to be visible distinctly; namely, my view of the root causes of what has happened, which is as follows. The most striking change in the investment factors of the post-war world compared with the pre-war world is to be found in the high level of the market-rate of interest. (CW VI, p. 377)

b. This memorandum brings home to me what I was beginning to forget, namely that I have nowhere introduced into my draft chapters in any clear or emphatic form what I believe to be the fundamental explanation of the present position. My fundamental explanation is, of course, that the rate of interest is too high, - meaning by the 'rate of interest' the complex of interest rates for all kinds of borrowing, long and short, safe and risky. A good many of Brand's factors I should accept as part of the explanation *why* interest rates are high, e.g. effects of the War, post-war instability, reparations, return to gold, mal-distribution of gold, want of confidence in debtor countries etc., etc.

Next comes the question of how far central banks can remedy this. In ordinary times the equilibrium rate of interest does not change quickly, so long as slump and boom conditions can be prevented from developing; and I see no insuperable difficulty in central banks controlling the position ... The drastic reduction of the whole complex of market-rates of interest presents central banks with a problem which I do not expect them to solve unless they are prepared to employ drastic and even direct methods of influencing long-term investments which, I agree with Brand, they had better leave alone in more normal times. ...

But I should not be surprised if five years were to pass by before hard experience teaches us to get hold of the right end of the stick. (CW XX, pp. 272-3)

Moreover, the working through of the *Treatise* was a critical and fast catalyst to the *General Theory*. In my view, the key step was the abandoning of the saving–investment equilibrium and hence the notion of a natural rate of interest.<sup>4</sup> With this went the unique long-run equilibrium of classical economics.

The first evidence of this fundamental shift is in extracts from his November 1932 lectures, published in the *Collected Writings*:<sup>5,6</sup>

... For the root of the objection which I find to the theory under discussion, if it is propounded as a long-period theory, lies in the fact that, on one hand, it cannot be held that the position towards which the economic system is tending or the position at which it would be at rest or the *optimum* position ... whichever of these tendencies we have in view, is entirely independent of the policy of the monetary authority; whilst, on the other hand, it cannot be maintained that there is a unique policy which, in the long run, the monetary authority is bound to pursue.

Thus, I conclude that this theory is not really dealing with a generalised doctrine of the long period, but is concerned rather, *with a special case*; i.e. with a long-period position corresponding, in some or all of the senses of this term, to a *particular* assumed policy on the part of the monetary authority.

On my view, there is no unique long-period position of equilibrium equally valid regardless of the character of the policy of the monetary authority. On the contrary there are a number of such positions corresponding to different policies. Moreover there is no reason to suppose that positions of long-period equilibrium have an inherent tendency or likelihood to be positions of optimum output. A long-period position of optimum output is a special case corresponding to a special kind of policy on the part of the monetary authority. This conclusion will be developed in subsequent chapters. [Moggridge then notes: ‘although the

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c. We are today in the middle of the greatest economic catastrophe -the greatest catastrophe due almost entirely to economic causes - of the modern world. ... I see no reason to be in the slightest degree doubtful about the initiating causes of the slump. ... The leading characteristic *was an extraordinary willingness to borrow money for the purposes of new real investment at very high rates of interest* - rates of interest which were extravagantly high on pre-war standards, rates of interest which have never in the history of the world been earned, I should say, over a period of years over the average of enterprise as a whole. This was a phenomenon which was apparent not, indeed, over the whole world but over a very large part of it. (CW XIII, pp. 343-5, my emphasis)

<sup>4</sup> In Chapter 6 of Tily (2007b), I argued that this followed his identification of the saving–investment identity.

<sup>5</sup> Prefaced with: “[t]yped and handwritten fragment from which Keynes appears to have lectured, 14 November 1932”.

<sup>6</sup> Here he examined what Marshall meant by long period (rather, *run*): “ ... The first suggestion conveyed by the term ‘long-period’ is that it relates to a position period towards which forces spring up to influence the short-period position whenever the latter has diverged from it. The second suggestion conveyed is that the long-period position differs from short-period positions in being a stable position capable *cet par.* of being sustained, whilst short-period positions are *cet. par.* unstable and cannot be sustained. The third suggestion is that the long-period equilibrium is, in some sense, an *optimum* or ideal position from the point of view of production, i.e. a position in which forces of production are disposed and utilised to their best possible advantage” (CW XXIX, p. 54).

pagination is consecutive, some words are missing at this point'] (CW XXIX, pp. 54-51)<sup>7</sup>

Keynes here refers to 'period' rather than 'run', but it is quite clear that he is talking about the classical long run. Crucially, he links his understanding of the possible long-period positions to the actions of the 'monetary authorities'; moreover he does not appear to be dismissing the validity of some kind of notion of a long run. In my book, I argue that he replaced the classical notion of an unique long run equilibrium with an alternative conception of a multiple long-run equilibrium.<sup>8</sup>

Nevertheless, this position is certainly not obvious in the *General Theory*. The *General Theory* itself is dominated by the notion of aggregate demand, with unemployment equilibrium caused by inadequate demand. Most 'Keynesians' chose to exploit this notion in support of fiscal policy.<sup>9</sup> But, throughout the *General Theory*, Keynes also had in mind a specific mechanism and model, which did not ordinarily feature government expenditure.

Again, this mechanism had its origins in the classical theory of interest, about which much of the action in the *Treatise* had revolved. As he emphasised in discussions prior to publication:

[t]here is, I am convinced, a fatal flaw in that part of the orthodox reasoning which deals with the theory of what determines the level of effective demand and the volume of aggregate employment; the flaw being largely due to the failure of the classical doctrine to develop a satisfactory theory of the rate of interest. (*The Listener*, 21 November 1934, CWXIII, p. 489)

In the *General Theory*, the classical theory was deconstructed into two (normally) independent parts: first, the theory of liquidity preference and second, the theory of investment demand.<sup>10</sup>

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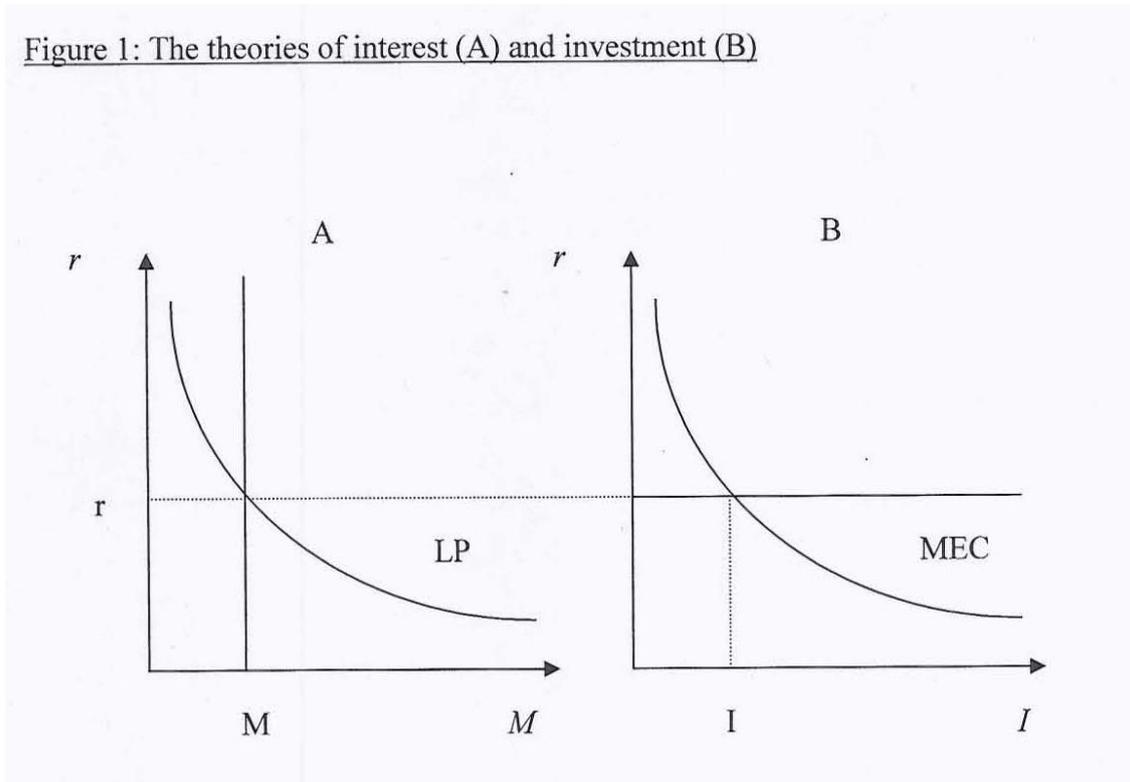
<sup>7</sup> The same passage can also be seen from the student perspective under a very important title: Rymes (1989, p. 73) reproduces a 'Sixth Lecture: 14 November 1932', 'Monetary and Neutral Economy and Long and Short Periods'.

<sup>8</sup> I mistakenly thought Keynes used this term, given he seems not to have, I have no idea where it came from!

<sup>9</sup> Keynes obviously addressed public spending issues in his book, particularly at the end of his discussion of the multiplier (eg. pp. 106, 116-22 and 127-31), but, in general he discussed it as in a role supplementary to monetary policy (pp. 164, 320, 325, 335, 349, 351, 376-7 and 380).

<sup>10</sup> Keynes scarcely used diagrams in any of his work; I consider this a great mistake, doubly so because the only one he did use in the *General Theory* was so terribly misleading.

Figure 1: The theories of interest (A) and investment (B)



The rate of interest was set according to the schedule of liquidity preference ( $LP$ ) and the supply of money (Figure 1.A), that rate then determined the rate of investment according to the schedule of the marginal efficiency of capital (via a notional supply schedule of finance, perfectly elastic at the prevailing rate of interest) (Figure 1.B). Neither the  $LP$  and  $MEC$  schedules is fixed, as in the 'Keynesian' bastardisation, but shift according to changing expectations. Nonetheless, on a given  $MEC$ , there was a different level of investment for each (exogenous) rate of interest, as in the November 1932 lecture.

Keynes re-iterated the points made at the November 1932 lecture, but in very a low-key manner: first, in his Appendix to Chapter 14, on the classical theory of interest, and second, in a discussion of his treatment of the natural rate in the *Treatise*:

. . . [T]o every banking policy there corresponds a different long-period level of employment; so that there are a number of positions of long-period equilibrium corresponding to different conceivable interest policies on the part of the monetary authority. (CW VII, p. 191)

I had, however, overlooked the fact that in any given society there is ... a *different* natural rate of interest for each hypothetical level of employment. (CWVII, p. 242)

But there was much to do unravelling the outcome of his new deconstructed theory of investment in the context of the broader theory of economic activity that emerged between the *Treatise* and the *General Theory*. As is well known, this outcome followed from the multiplier, his theory of consumption and the principle of effective demand. The analysis is necessarily short-period, in an analytical sense. Increased demand would go to employment or prices according to the conditions of supply, with capital fixed.

Keynes does not appear to have been greatly pre-occupied with how such a short-period outcome might relate to his notion of multiple-long-period equilibrium, beyond a brief discussion of how a “state of expectation” held for a “sufficient length of time” could lead to a “steady level of employment” which “may be called the long-period employment corresponding to that state of expectation” (CW VII, p. 48). Nonetheless he continued to see the main action in the system revolving round longer-period expectations, interest and investment. Furthermore, in Chapter 22, ‘Notes on the Trade Cycle’, Keynes turned to a longer-period *analysis*.

#### **4. The Trade Cycle in the *General Theory***

Keynes’s cycle theory is based on an exploration of investment outcomes. So just as his short-period theory held capital constant, his long-period theory examined the consequences of capital changing. According to my own development of this theory, the concern of short-period analysis is consumer price inflation, the concern of longer-period analysis is with asset and debt inflations. The cycle theory appears, too, to provide the potential link between short-period outcomes and some kind of longer-period equilibrium. Yet Keynes did not discuss it in this way, nor did he regard the analysis as longer period. Indeed, while he regarded his analysis as only scratching the surface of the issue of the cycle, it is striking that much might be superfluous to the main theme, and the key points stated too briefly and without sufficient emphasis.

Keynes placed primary emphasis on movements in investment caused by the ‘animal spirits’ of businessmen, portrayed theoretically as shifts to the schedule of the MEC:

But I suggest that the essential character of the trade cycle and, especially, the regularity of time-sequence and of duration which justifies us in calling it a *cycle*, is mainly due to the way in which the marginal efficiency of capital fluctuates. The trade cycle is best regarded, I think, as being occasioned by a cyclical change in the marginal efficiency of capital, though complicated and often aggravated by associated changes in other significant short-period variables of the economic system. (CW VII, p. 313)

I suggest that a more typical, and often the predominant, explanation of the crisis is, not primarily a rise in the rate of interest, but a sudden collapse in the marginal efficiency of capital. (*ibid.*, p. 315)

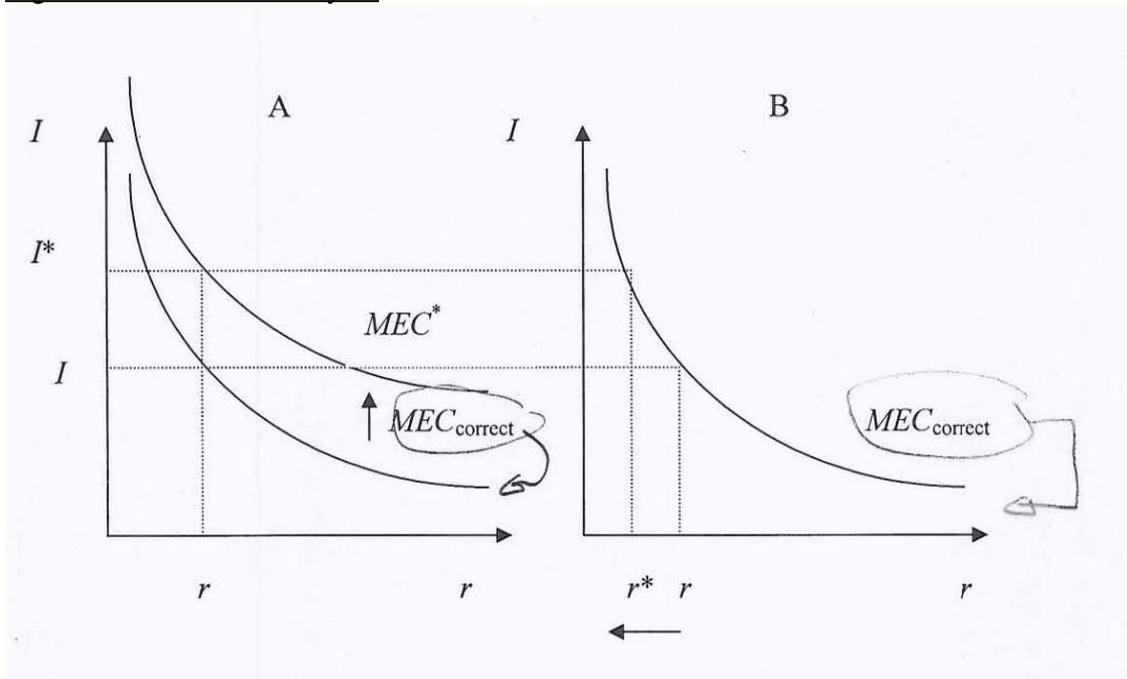
These passages, however, have no role for the rate of interest: this is introduced shortly afterwards. Without emphasis, Keynes argued *that for each rate of interest there is an amount of investment that is in some sense 'correct'*. This proposition is made most explicitly in the following elaboration of the business cycle process:

[i]t is an essential characteristic of the boom that investments which will in fact yield, say, 2 per cent in conditions of full employment are made in the expectation of a yield of, say, 6 per cent, and are valued accordingly. When the disillusion comes, this expectation is replaced by a contrary 'error of pessimism', with the result that the investments, which would in fact yield 2 per cent in conditions of full employment, are expected to yield less than nothing. ...

The boom which is destined to end in a slump is caused, therefore, by the combination of a rate of interest, which in *a correct state of expectation* would be too high for full employment, with a misguided state of expectation which, so long as it lasts, prevents this rate of interest from being in fact deterrent. A boom is a situation in which over-optimism triumphs over a rate of interest which, in a cooler light, would be seen to be excessive. (*CW VII*, pp. 321-2, my emphasis)

Here Keynes compared 'excessive' expectations of the yield of investment with this 'correct state of expectation' as a baseline. In terms of the MEC, Keynes appears to be arguing that there is a 'correct' MEC schedule against which other schedules, assessed in uncertain circumstance and influenced by various degrees of optimism, can be compared. Key aspects of this process are illustrated on Figure 2.

Figure 2: The economic cycle



On 2.A, the rate of interest,  $r$ , corresponds to a volume of investment,  $I$ , measured on  $MEC_{correct}$ , a notional 'correct' MEC schedule. The expansion phase of the business cycle is then illustrated by a shift to  $MEC^*$ , the schedule reflecting firms' excessively optimistic assessments of the yields on investment, leading to investment demand of  $I^*$ .

Eventually investment implemented under such conditions will go into reverse: the MEC shifts to the left. This leads to the contraction in investment that defines the 'recession' or 'depression' phase of the economic cycle. Keynes's description goes little further. Instead he turns to his terribly straightforward solution:

...[t]he remedy for the boom is not a higher rate of interest but a lower rate of interest. For that may enable the so-called boom to last. The right remedy for cycle is not to be found in abolishing booms and thus keeping us permanently in a semi-slump; but in abolishing slumps and thus keeping us permanently in a quasi-boom. (CW VII, p. 322)

The cheap-money solution to the economic cycle achieves a high level of investment by *reducing the rate of interest* rather than through shifts to the MEC that he regarded as only temporary. This alternative is illustrated in Figure 2.B, where the higher level of investment (the 'so-called boom'),  $I^*$ , is achieved with a reduction in the rate of interest from  $r$  to  $r^*$ .

Two immediate shortcomings come to mind: first, what causes the MEC to shift into reverse?; and second, why shouldn't the process occur at a lower rate of interest? I have attempted to answer these questions in my book.<sup>11</sup>

## 5. Revenue and debt

In order to answer the first question, the perspective is changed from demand to a monetary or financial perspective. More specifically, focus turns from the expectations that dominate when investment is put into place, to 'outturn' as revenue streams come in. This perspective reveals that additional factors are at work in the determination of company behaviour that go beyond investment and production decisions. Revenue flows will either validate or invalidate original expectations.<sup>12</sup> The key processes concern how companies and banks handle the failure of revenues to match expectations.

At the start of an upswing there will be greatly increased investment. If the expansion follows a period of subdued activity with capacity idle (as is likely), the increased utilisation of this capacity is also likely to lead to rapid acceleration in profits. There will also be effects in the financial markets that may be critical to the development of the cycle. In particular, capital market inflation (CMI)<sup>13</sup> will be a consequence of any credit-fuelled excessive expansion. The identity between saving and investment means that all new investment financed by credit will create an equal amount of saving. By definition, in an excessive expansion, the pace of credit creation and, therefore, saving creation will be at least at the pace of investment. These newly created savings will seek the high returns apparently offered by financial investments. As a consequence, prices will be pushed up on various financial instruments, most obviously equities, but equally

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<sup>11</sup> I should note that some of this discussion was written as the investment boom of the late 1990s began to unravel; some of the ideas are therefore drawn from the concurrent facts of experience. My wider notion that investment collapse was imminent, came before that collapse.

<sup>12</sup> Strictly, what might be called 'validation by revenue' processes can only be judged over the full duration of an investment. The outturn of the stream of revenues for any marginal investment will then either have met or failed to have met the cost of the finance for putting that investment into place. In practice, however, it is unlikely that businesses can wait until the end of the investment repayment process to appreciate that revenues will not meet costs. Firms' cash flow calculations for the duration of an investment will have assumed a certain profile of returns over time. The extent to which excessive investment is revealed at an early stage will depend on this profile. At the extreme, if all returns are expected in the final period then firms will not know until this period. For most projects it might be reasonable to assume that returns are likely to be linear (with perhaps a positive gradient) across the investment. In these cases, the excessive nature of the investment will be revealed from fairly early on, and firms may encounter cash flow problems according to a similar timing. In the aggregate, it is likely that these types of projects will dominate. To reflect this, 'outturn' will not be used in the strict sense of the stream of revenues over the whole life of the investment, but more loosely to reflect a position where an investment has been put into place and is generating revenue. Jumping ahead, it may be that in some cases banks are willing to re-finance loans for as long as they believe that a company's shortfall in revenues is due to incorrectly profiled revenues rather than a miscalculation of total revenues. In the limit, this would mean that re-financing would take place until very late in the life of any investment.

<sup>13</sup> Toporowski (1999) coined this phrase.

corporate bonds. The likely consequence is that the prices of financial instruments will grow at the pace of investment during the expansion. Indeed, as assets must equal liabilities, a theoretical aggregate measure of capital market inflation should grow at exactly this pace.<sup>14</sup> In turn, CMI will widely (but erroneously) be interpreted as indicating investors factoring in the excessive growth in economic activity as permanent. CMI will, thus, serve further to affirm the validity and sustainability of the state of affairs to investors and policymakers alike and no doubt will encourage even greater optimism.

As euphoria about the situation spreads, additional increases in optimism may lead the MEC to shift even further to the right. This period of accelerating investment will continue until there is either some reining-in of expectations or until firms' revenues begin to display evidence of the excessive expectations. At this point, firms will begin to have difficulty meeting the scheduled repayments on loans or debt instruments. Keynes's theory as depicted here is categorical about the aggregate amount of investment that will eventually face such problems. On Figure 2, investment projects represented by the difference at the rate of interest,  $r$ , between investment demand and the correct investment,  $I^*-I$ , will, by definition, be such that revenues fail to meet expectations.

Essentially, the investments represented by  $I^*-I$  are excessive and are, from this perspective, 'bad' investments. In this way, the excessive expansion is unsustainable from the moment that investment demand exceeds the correct level, but this will take sometime to be recognised. If it is assumed that firms have no idle resources, then, as revenues fail to meet expectations, they will be faced with two choices: cost savings or additional borrowing. A number of cost-saving options will exist, most obviously cutting back future investment plans, seeking alternative sources of raw materials, raising prices or reducing quality. More painfully, firms could cut jobs.

However, for many firms, the easiest option will be further borrowing – effectively a type of distress borrowing – to finance the inevitable shortfall between expectations and actual revenue. This type of borrowing, which will henceforth be called *debt financing*, should be seen as distinct from borrowing to finance investment in the first place. In a monetary economy the process of debt financing can continue for a very long time. But, as a consequence of both the debt financing and the high borrowing to finance the excessive investment in the first place, an economy in an excessive-expansion phase will be underpinned by a steadily increasing level of corporate debt – a *debt inflation*. The sources of debt financing will vary, but the generic types are the generation of new credit and portfolio reallocation. New credit creation may be further subdivided between that which goes directly to companies and that which goes indirectly to companies through other financial institutions. An example of the latter will be banks granting loans to various 'funds', which then purchase newly issued corporate debt instruments. In the former case, then new credit goes directly from a bank to a firm, the operation is 'merely' a balance sheet operation. Existing bank assets are paradoxically 'protected' by increased extension of debt-financing loans, for the failure of a client company is not in the bank's interest. Continuing support of troubled companies, no matter how apparently irrational,

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<sup>14</sup> Such measures do not exist; though an indication could be derived by looking at the growth of total assets and liabilities by sector.

is behaviour that is endemic in the banking system. In addition, credit creation for debt financing will also contribute to CMI in exactly the way discussed earlier.

Debt financing will keep workers in jobs which would not exist if the economy was operating according to the correct MEC. Other money will come to companies through a reallocation of existing stocks of wealth, with households (or financial corporations on their behalf) shifting from safer investments (including money) to equity and corporate bonds and from other operations such as debt-equity exchanges and rights issues. At the same time other developments in the course of an excessive expansion will also work towards generating increased demand for corporate borrowing instruments. For example, excessive expansion combined with 'sound' budgetary principles is likely to mean that the government will move into surplus. As a consequence it will issue fewer securities, and investors whose portfolios demand a certain proportion of long-term debt instruments will be directed towards the corporate sector just as firms' demand for debt financing is increasing.

Particularly important considerations follow from wider profit opportunities created for financial institutions. These organisations will make substantial earnings through their role in arranging various issues such as initial public offerings, corporate bonds and debt-equity exchanges, as well as through their role in merger and acquisition activity which will also be an important feature of the credit cycle. Later in the excessive expansion, debt restructuring packages and innovative financial instruments will be offered in exchange for higher interest payments. It is the good fortune for many financial institutions that commission will be earned whether or not any of these transactions make any sense from the points of view of the parties brought together or of the economy as a whole.

A particularly important aspect of this type of finance is hedge fund operations, where high risk is taken-on for very high reward. From 2000 there has also been widespread use of credit-default swaps and the securitisation of debt, whereby financial organisations hoped are able to sell on the risk of credit default. Essentially any such debt-financing operations transfer the liabilities of the corporate sector into assets of other sectors – in particular the banking, financial and household sectors. Ultimately, because the primary origin of the instruments was debt financing, a large amount of the assets created are assets that reflect bad debts and are worthless. Because the predicament has been caused by excessive expectations, debt financing merely serves to put off the inevitable consequence of a level of investment greater than that permitted by the yield on capital. Whether firms are taking out bank loans or issuing corporate debt, eventually they will not be able to meet the interest payments and they will begin to default. The debt is by definition debt that firms will not – not ever - be able to repay out of current investment projects.<sup>15</sup>

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<sup>15</sup> The processes discussed here are closely related to those that Hyman Minsky outlined in his 'financial instability hypothesis'. Minsky analyses an investment expansion based on excessive optimism and proposes a sustainability criterion based on revenues such that 'the profit flows must be sufficient to validate debts' (Minsky, 1985, p. 37). He sets out three financial 'postures' on the part of firms as 'hedge', 'speculative' and 'Ponzi' finance. The latter is most closely related to the discussion here. '3. *Ponzi*'

On the face of it, however, the expansion will appear sustainable. Firms, optimistic for the restoration of financial health in the future, will find that their debt financing is taken-up and that banks are willing to issue debt financing loans. Fundamental to this depiction of the economic cycle is that an excessive expansion can last for a long time – experience suggests for as many as 20 years – but cannot be sustained indefinitely.<sup>16</sup>

The boom can be prolonged for precisely as long as demand exists to take up corporate debt financing. The practical limitation to this process is, therefore, investors' belief that new debt issued is sustainable – that is firms' future revenues will ensure that they are able to meet their obligations on that debt. However, sooner or later investors will realise that the additional debts they are being asked to take up, and those that they already hold, are bad debts. At this point there will be a deterioration or collapse of financial confidence. Evidence suggests that towards the end of a boom, the long-term interest rate on corporate debt will increase, and spreads between corporate debt and government debt will widen, reflecting an increased perception of risk on investors' part. The precise transmission is unclear. In financial markets there will be two key events. Capital markets will begin to deflate, that is stock exchanges and bond markets will crash. There will be a credit crunch to the corporate sector – it may even be that this event triggers the capital market deflation (CMD), particularly if banks have a crucial role in debt financing. Keynes considered that these events happened with some force:

It is of the nature of organised investment markets, under the influence of purchasers largely ignorant of what they are buying and of speculators who are more concerned with forecasting the next shift of market sentiment than with a reasonable estimate of the future yield of capital-assets, that, when disillusion falls upon an over-optimistic and over-bought market, it should fall with sudden and even catastrophic force. (CW VII, pp. 315-16)

The 'real' events will happen in parallel. From the point at which firms can no longer re-finance debt, they will have to seek the only alternative ways to meet their costs: investment cuts (probably first, with implications for employment in the investment goods industries) and then direct employment cuts. The effect of CMD on firms' balance sheets may also be important here. A sharp deterioration in the balance sheet is, in itself, likely to force cutbacks in investment. It may be that this is the primary transmission mechanism of the failing confidence, but this can only be a matter for conjecture.

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*finance*. The cash flows from assets in the near term fall short of cash payment commitments and the net income portion of the receipts falls short of the interest portion of the payments. A Ponzi finance unit must increase its outstanding debt in order to meet its financial obligations' (Minsky, 1985, p. 43). The economy described in the main text is one where Ponzi finance becomes endemic. However, the transmission mechanism in Minsky's model differs: he sees real collapse brought about by the effects of rises in the rate of interest to tackle an inevitable inflation (which must have been the pre-occupation as he wrote).

<sup>16</sup> The evidence of experience suggests that policymakers will help to prolong the situation by socialising debt or by bailing out defaulting companies and failing financial organisations, as well as by indulging in extensive public works programmes.

In terms of Keynes's theoretical analysis, there will be two key phenomena. As these financial developments occur, the MEC will be shifting towards a less optimistic position. Firms will know that their revenues from investments made during the expansion phase are failing to meet the expectations that led them to borrow in the first place. They will re-adjust the MEC to a more realistic position. At the same time the failure of confidence in financial markets will cause liquidity preference and risk premia to increase, leading to a sharp rise in the rate of interest. The combination of these effects will cause sharply reduced effective investment demand and hence reduced output and reduced employment.

In sum, the financial perspective characterises the economic cycle in two phases: an expansion that is accompanied by the corporate sector in steadily increasing indebtedness, and a contraction or recession that is the bursting of this debt inflation. The 'force' that brings an economy operating outside its correct level of investment back to reality is debt. The degree of indebtedness is then a measure of the excess of the expansion and will equally prevent the automatic recovery in the way predicted by classical economics.

The cause of the economic cycle is a rate of interest that is too high for a level of investment consistent with full employment, compounded by a monetary system that finances excessive investment for a prolonged period. Older terminology might be usefully resurrected: the economic cycle is caused by money which is *easy* – that is, readily available – but *dear*. As discussed, for Keynes, cheap money was the solution to the economic cycle.

However, as in my second question (at the end of section 4), while a cheap-money policy allows an economy to operate according to a higher level of investment, it does not immediately follow that that investment should be more stable than the equilibrium in the dear-money case. From a theoretical perspective, in a cheap-money economy it is not possible to rule out substantial shifts in the MEC leading again to debt inflations and financial collapse. Keynes did not address this issue in the *General Theory*. It might be plausible to argue that such conditions are more unlikely in the cheap-money than the dear money case. In particular, excessive expectations might be less likely in an economy already operating to high performance and one where expectations were not distorted through routine policy manipulation of the short-term interest rate. Similarly, the consequences of excessive expectations might not be so severe in a cheap-money economy because the cost of any associated debt would be less. However, the role of uncertainty and expectation in the economic process mean that no watertight conclusions can be drawn. What is certain, though, is that dear money does not prevent easy money, and dear-money policy will be likely to provoke excessive expansion followed by recession. Rejecting cheap money on the grounds that it may make money easy neglects this point that dear money does not prevent easy money and, at the very worst, amounts "...to refus[ing] to be cured because that will make it possible to become sick again' (Lerner, 1964, p. 222). We should also defer to experience, see section 7.

## 6. Keynes and equilibrium: development and misinterpretation

For me, it is attractive to see aspects of multiple-long-run equilibrium in the story above. But matters concern the yield on investment and the rate of interest, rather than the real-wage adjustment or non-adjustment of the classical model. Keynes's theory first broke the link between investment, saving and the rate of interest. But it broke too the additional classical notion that in a market economy the rate of interest adjusts to accommodate any changes in the yield on investment (sometimes known as the rate of profit). Instead Keynes revealed that the rate of interest is a monetary phenomenon, which sets an upper bound to investment profits according to their (projected) yields. Nothing in the system ensures that the upper bound is in any sense optimal, in particular that it will correspond to full employment. In this way, the rate of interest defines an unemployment equilibrium for the system.

There is therefore something *real* going on here. Keynes is of the view that the yield on investment is somehow a constraint to the expansion of the economic system. As will be touched on below, he develops the reasoning for this no further (though perhaps he was content with pre-existing classical notions).

The trade cycle discussion indicates that this upper bound (or equilibrium) is not binding in terms of the day-to-day operation of a free market economy. Under the influence of optimistic animal spirits, investment can exceed the upper bound. But the upper bound does exert an underlying force on the system. In particular dear money sets a too high threshold for the yield on investment for anything like full employment. The system may well expand at an excessive rate; the fundamentals – fairly low unemployment, relatively high growth and low inflation – may appear sound, but Keynes's theory predicts that it is a temporary state of affairs, liable to abrupt reversal.

Yet even among those who generally know better, subsequent interpretation has left such theoretical niceties well behind. Keynes's theory of investment has lost the central position in discussions of Keynes's scheme and his trade cycle theory has never generated much interest. Moreover his analysis has been tightly restricted to the short period, with most post-Keynesians seeing no role for any long-period equilibrium, and the worst (neo-classical) interpretations simply restoring the classical long-run equilibrium based on real wages.

As usual much of this we 'owe' to the 'Keynesian' model, with its narrow pre-occupation with public works and its method of simultaneous equations. But right from the start, post-Keynesian economists have, too, not been entirely helpful. That said, it is quite possible that later mis-interpretations of their arguments are mainly at fault.

Harrod opened the account with his charge that the *General Theory* was 'static', and his consequent development of a 'dynamic' theory. But this terminology seems to me extremely misleading. His condensed account of matters was published in 1938 in the

*Economic Journal* (following a very prolonged dialogue with Keynes as editor). Here Harrod defined 'dynamic' as follows: "I prefer to define dynamic as referring to propositions in which a rate of growth appears as an unknown variable" (Harrod, 1939, p. 17).

His concern was a theory of economic growth that took into account wider considerations of capital, technology and population. Yet the impression that Keynes's theory was timeless was created and has stuck. The timeless charge certainly fits the 'Keynesian' model, but, as the discussion of the cycle indicates, Keynes's theory was most certainly concerned with processes evolving over time (as of course did the formation of any expectations).

In her 1937 interpretation, *Introduction to the Theory of Unemployment*, Joan Robinson set out a faithful account of the *General Theory* with interest rate policy prominent. Even at this stage she already revealed a good degree of scepticism over the authorities' willingness to implement policies in line with Keynes's conclusions (eg. p. 63). However, in Chapter XII, 'Changes in employment: The Trade Cycle', she departed from the treatment shown above. Her cycle was defined by animal spirits and various other endogenous factors, such as an accelerator process followed by slowing profits as accumulation builds, and then slowing investment. The role of the rate of interest appeared to be as a factor that stabilised investment, falling as output fell following a reduced demand for money.<sup>17</sup>

After Keynes's death Robinson developed her own response to Harrod's charge, now expressed as a need to explore the 'long period'. This long-standing pre-occupation began in 1951 with her *Economica* paper 'The Generalisation of the General Theory'.<sup>18</sup> In later discussion (the Preface to the second edition of her *Introduction to the Theory of Employment*, 1969) she argued:

He [Keynes] did not think much about long-period problems. When he did throw out some ideas on the subject, he suggested that, with peace and the cessation of the growth of population, a country such as ours, by maintaining investment at the full-employment rate, could complete all the accumulation that would be useful to society within a generation. (Since neither precondition has been fulfilled we cannot calculate how far out he was.) (pp. xii.-xiii)<sup>19</sup>

Her own motivations could be summarised as follows. First, Keynes was writing for a different situation, when capacity was not an issue. Second, Keynes's theories of a longer period, such as they were, assumed that a benevolent authority would keep in place full

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<sup>17</sup> She appears to attribute the cycle theory to Kalecki, having noted more generally: "Mr. Kalecki's discovery of the General Theory was a classic example of the coincidences of science" (Robinson, 1969 [1937], p. \*\*\*). In this instance the cycle theory Kalecki 'discovered' was different.

<sup>18</sup> It was later published alongside 'The Rate of Interest' in her book, *The Rate of Interest and Other Essays* (1952).

<sup>19</sup> Keynes's views are found in *CW VII*, pp. 220-1, and followed classical lines. His later policy advice about a falling rate of interest was based on an expectation that the yield on capital would fall into the future; his protracted discussions with Harrod over his dynamic theories also casts light on Keynes's views.

employment policies.<sup>20</sup> Third, there was a need for a sound theory of growth to rival the emergence of classical growth theories that had begun with Solow.

So Robinson set about building a long-period theory that examined the dynamics of future economic growth under a not entirely benevolent monetary authority, clarifying the relations between investment and consumption, and examining how a changing population and technical change would impact. This theory extends and is complementary to the *General Theory*, not opposed to it. Yet hers and Harrod's charges were clumsily made, with unhelpful use of terms (perhaps this partly originated in an inadequate understanding of Keynes's view of the trade cycle).

While Keynes's theory of investment has been challenged by a large number of economists, George Shackle's contributions merit emphasis because of his close association with the post-Keynesian paradigm. He championed uncertainty and rejected *IS-LM*, but he consistently rejected the rate of interest as a solution to the economic problem.

Those who read the letter, rather than the spirit, of the *General Theory*, and even perhaps Lord Keynes himself in the initial stages of his writing, have been tempted to mistake the central position which the rate of interest appears to occupy in the logic and aesthetic of his system for its importance in the real world. Inquiries such as those made (by personal interview and questionnaire) by the Oxford Economists' Research Group [footnote: *Oxford Economic Papers*, Nos. 1 and 3] in the years before the present war have shown strong evidence that, so far as investment in industrial equipment is concerned, the rate of interest is less potent than orthodox theory, and some interpretations of the Keynesian theory, suggest. The demon who really opens or closes the throttle of economic activity is not the rate of interest, but the marginal efficiency of capital, with everything that this schedule rests upon, that is to say, all the factors which shape expectations, and the "utter doubt, precariousness, hope, and fear" (Shackle, 1943, p. 261)<sup>21</sup>

As the quotation indicates, initially Shackle did not reject the MEC; indeed for him investment was a phenomenon of pure uncertainty. But with the rate of interest ruled out as of no importance, the central theoretical pillar of Keynes's theoretical construct –

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<sup>20</sup> In Robinson (1951) she gave great emphasis to her view of the implausibility of a full employment monetary policy. While acknowledging the legitimacy of a full employment value of the rate of interest under certain conditions, she was sceptical about the existence of the "wise and powerful monetary authorities" needed to implement such policies. She also noted constraints from foreign exchange pre-occupations, so that "mere monetary management cannot pursue full employment" (Robinson, 1951, p. 76).

<sup>21</sup> The assertion that Keynes moved away from cheap money is not evidenced, is unfounded and is wrong. I find this alarming. Another good example of Shackle's rejection of the role of interest is in his 1961 survey of interest rate theories, published in the *Economic Journal*; he concluded: "It seems likely that the interest rate, or the system of rates, will continue to receive from theoreticians the homage due to a ceremonial monarch, without in fact counting for more than such a monarch in the real affairs of western nations" (Shackle, 1961, p. 252):

providing the foundation for policy, leading to equilibrium properties and providing some constraint to expansion, was gone.

Shackle, as the rest of the economics profession, was content to rely on the, at very best, half-baked analysis of the Oxford Economic Research Group.<sup>22</sup> The evidence of experience following the actual implementation of cheap money seems to have been regarded as of no interest whatsoever; I return to this in section 7.<sup>23</sup> Later he went further: he removed the MEC from his theoretical scheme and developed instead a supply and demand representation of the ‘inducement to invest’, utilising a ‘demand price of equipment rather than the marginal efficiency of capital’ (Shackle, 1965, p. 88; and pp. 80-9).

Paul Davidson’s *Money and the Real World* then canonised this theory of investment as follows:

Despite the fact that Keynes utilised the concept of the marginal efficiency of capital (which was defined as equal to the rate of discount), it is obvious that Keynes always viewed the production of investment goods in a monetary economy as depending on the comparison of the demand price with the flow-supply price. (Davidson, 1972, p. 70)<sup>24</sup>

Davidson’s supply–demand investment theory does not reject a role for the rate of interest, but refers only to the discount rate rather than the long-term rate and any impact is more indirect, seemingly affecting the demand for investment goods:

For example, changes in the market rate of interest may affect the demand for capital not only via altering the rate of discount used in capitalising the expected yield, but also by creating new expectations about (a) future sales ... and (b) future interest rates ... (Davidson, 1972, p. 73)

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<sup>22</sup> The ‘Oxford Economics Research Group’ (OERG) was established by Hubert Henderson, Keynes’s bitter rival. In its new journal, *Oxford Economic Papers*, Henderson (1938) strongly advocated the view that reductions in the rate of interest would not increase investment. His own agenda was supported by empirical work by James Meade and P. W. S. Andrews (1939). Chick (1983, p. 130) explained the difficulty of empirical verification of Keynes’s theory of investment, as well as addressing other criticism, in particular observing that the supply price of capital was incorporated in the MEC. It is also worth noting that the OERG research environment was hardly rigorous: the results were based on discussions with representatives of large companies, taking place over dinner at college.

<sup>23</sup> In a review of *The Years of High Theory*, Joan Robinson (1968, p. 186) berated Shackle: “For Shackle, ‘economics is about choice’. When Keynes has proved that rational choice is impossible in an uncertain world, he has destroyed the very basis of economic theory (p. 247). But Keynes, after all, produced a great effect upon affairs – or, if we like to maintain that post-Keynesian near-full employment would have happened anyway, at least he has made it possible to understand affairs. This is not intellectual nihilism. ... The theologians nowadays are trying to push economics back from exploring the questions that he opened up”.

<sup>24</sup> Shackle (1973) gave the work a glowing review in the *Economic Journal*.

Davidson was also pre-occupied with inflation. Ultimately he has the central bank able to foster activity with the discount rate and the supply of money. But, and citing Keynes from the *Treatise* (Vol. II, p. 351):

‘If,’ however, ‘there are strong social or political forces causing spontaneous changes in the money-rates of efficiency-wages, the control of the price-level may pass beyond the power of the banking system’, ... Hence, unless rules of the game are established via the political process to prevent rapid changes in money earnings per unit of effort over time, (an incomes policy), modern economies will fluctuate between the Scylla of inflation and the Charybdis of unemployment. (Davidson, 1972, p. 245)

At around the same time, Kaldor took a striking position, seemingly opposed to Davidson. The title of his ‘The Irrelevance of Equilibrium Economics’, says it all. With any equilibrium constraint thrown off, Kaldor’s vision was of unconstrained growth:

But if we take an inclusive view, neither labour nor capital can limit either the level, or the rate of growth, of production over a longer period. Capital accumulation can always be speeded up-or rather it automatically gets speeded up, with a faster growth of production. (Kaldor, 1972, p. 1251)

(Kaldor published his paper in 1972, a striking contribution to the notion of ‘Keynesians’ as ‘inflationists’, given world developments at the time.)

Following these contributions, much of the modern post-Keynesian literature almost entirely ignores the relation between interest and investment. In a recent symposium, Rochon categorically dismisses Keynes’s investment theory from ‘modern’ post-Keynesian discourse:

Now we can reject Keynes’s logic on the interest rate–investment link and his contentious use of a marginal efficiency of capital schedule, but we can still promote the necessity of low interest rates for other reasons, such as for income distribution. (Rochon, 2007, p. 7) <sup>25</sup>

Mark Hayes, however, is far truer to Keynes’s position:

... in considering long-term accumulation ... Keynes places his main emphasis on the indirect influence of the possibility of unforeseen changes in the state of long-term expectation upon the money-rate of interest through liquidity-preference, rather than on the direct effect of actual changes,... in the state of long-term expectation on the prospective yield. (Hayes, 2006, p. 151)

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<sup>25</sup> Rochon provides no references, nor does he deal with the arguments of those post-Keynesians who do not agree with this position. (eg Dow REF)

Moreover his (very brief) discussion of Keynes's "so-called 'real business cycle'" summarises matters as follows: "... the fluctuations in the marginal efficiency of capital would represent disequilibrium oscillations about a long-term long-period equilibrium position in which the return on investment equals the (normal) rate of interest" (*ibid.*, p. 199).

But his discussion of interest rate policy is rather mixed. He features the long-term rate of interest, but does not appear to see it as fully under the authorities' control: "Thus the rate of interest has a life of its own, based on our well-founded distrust of forecasts of the long-term future and on the security offered by money, as the store of value least affected by changes in such forecasts" (*ibid.*, p. 155). And he focuses on manipulation of the rate of interest, rather than cheap money *per se*, as the tool for managing the cycle:

Given his diagnosis, Keynes is pessimistic about the prospects for managing the trade cycle in a market economy by monetary policy alone. The rate of fluctuation in the marginal efficiency of capital is too great to be offset by changes in the rate of interest; ... (*ibid.*, p. 199)

He also rather overstates Keynes's critique of Robertson's arguments concerning raising the rate of interest to check an inflationary expansion. But Hayes himself is concerned with inflation and sees it as a barrier to full employment (eg. p. 200 and pp. 208-12).

Finally, he sees cheap money policy as tried and failed: "It can be fairly argued, I think, that Keynes's remedies of a low interest rate policy, ... [has] been implemented and extended, as far as [it] can be in a free society, without eliminating Keynesian involuntary unemployment" (*ibid.*, p. 151). As the next section will show, this most certainly is not the case.<sup>26</sup>

Wider post-Keynesian discourse appears to seek to *invent* a monetary policy, that applies post-Keynesian methods of uncertainty and credit, rather than going back to Keynes's economics. There is a tacit acceptance of the 'Keynesian' position on Keynes's policy, and a failure or even refusal to recognise or accept that Keynes had important views on monetary policy of his own. Rochon (2007) has a debate between two rival camps: those who favour an 'activist' approach, involving the use of nominal interest rates as a tool of aggregate demand fine-tuning, and those who prefer to 'park' the interest rate according to a specific rule, and manage demand with fiscal policy.

Certainly these arguments are better than those of the 'Keynesians'. But, in my view, they scratch the surface of Keynes's monetary theory. With too much emphasis on the discount rate, they fail to acknowledge the broader and more profound distinction between dear and cheap money; I believe this leads to a gross misinterpretation of the present economic order of the world.

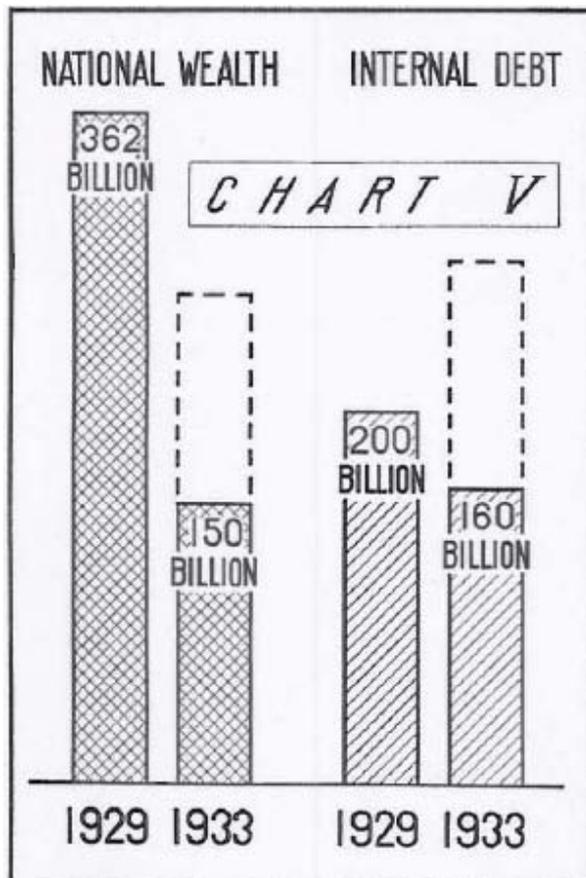
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<sup>26</sup> Yet Hayes vaguely acknowledges that Keynes's policies were not truly tested: "The breakdown, first of the 'cheap money' policy which died with Keynes and much later, of demand management as the basis of full employment, has led to the resurgence and current dominance of Classical ideas in the academy, ..." (*ibid.*, p. 204)

## 7. Application

Keynes's explanation for the cause of the Great Depression – particularly in the US (footnote \*) – is wholly compatible with his characterisation of matters in the *General Theory*. We know too that bad debt was extensive, not least through common knowledge of widespread bank failings. Irving Fisher's (1933) debt-deflation theory also exemplifies the role of indebtedness during the Great Depression. The paper includes estimates debt set against wealth (Figure 3).<sup>27</sup>

Figure 3: Fisher's balance sheet

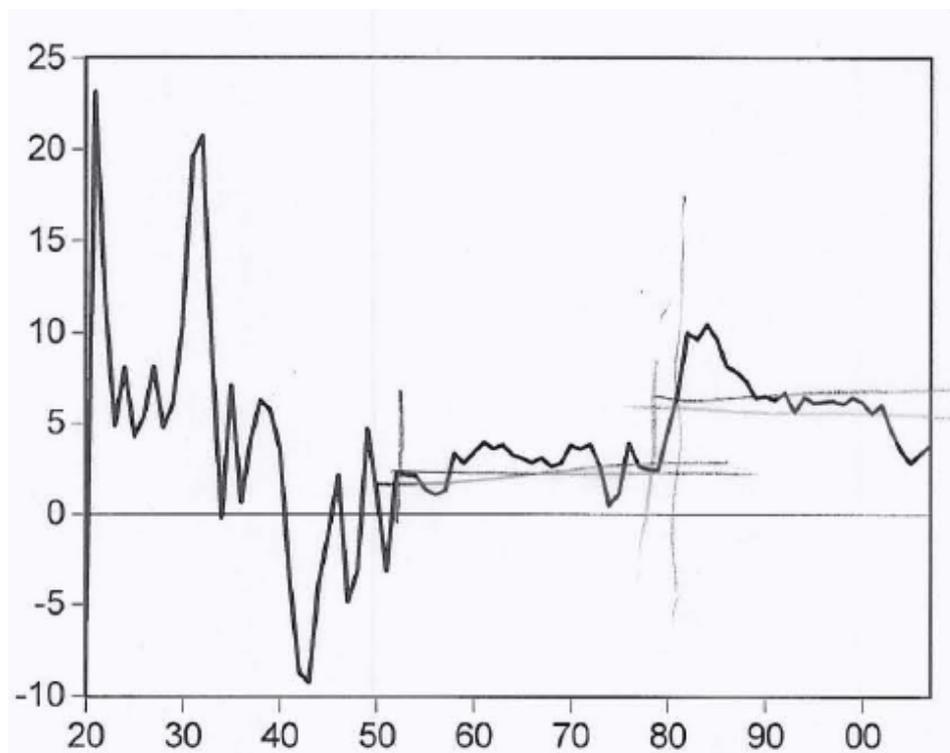


<sup>27</sup> This was a terribly impressive achievement given National Accounts had only just begun to emerge.

Fisher's estimate of internal debt in 1929 is 193 per cent of the corresponding estimate of GDP, a figure that will be seen to be of note.

As argued, for Keynes the high interest rates of the 1920s were the cause of the Great Depression. We are now in a position to examine the trajectory of interest rates through the whole of the twentieth century to the present. Figure 4 has been constructed from statistics of the interest rate on BAA corporate bonds and long-run figures for the gross domestic product deflator.<sup>28</sup>

Figure 4: Long-term interest rates in the US, adjusted for inflation



It seems reasonable to argue that these rates are a guide (if not lower bound) to the interest rates facing firms across the world. Plainly Keynes's view of the high rates in the 1920s is confirmed. Since Keynes's death, financial liberalisation from 1970-80 casts a clear dividing line between an age of cheap money and a modern era of dear money, with, crudely, a doubling in interest.<sup>29</sup>

<sup>28</sup> More specifically: interest rates on Moody's BAA corporate bonds from the Federal Reserve website; deflators to 1929 from Friedman (1982) and afterwards from the BEA website.

<sup>29</sup> The full story is more subtle, especially the very low interest rates in the 1970s (falling negative on government bonds) and the fall of rates at the start of the 21st century. These latter reductions appear to be related to responses to the crises starting with the Southeast-Asia collapse through to the stock exchange

According to this interpretation of the General Theory, the role of cheap money in the golden age merits evaluation. As is well known, over much of the world unemployment was low and growth high (and the income distribution improved). Fixed capital investment was strong and industrial activity vigorous; the expansion was certainly not due to government expenditure alone. Moreover, as Keynes argued, under cheap money, cyclical forces were subdued, and financial crises were remarkable by their absence. The era surely vindicated Keynes's genius, and has been too easily neglected by those who recognise but reject Keynes's monetary policies.

The same analysis should lead to grave concerns about the re-emergence of dear money in 1980. Until 2000, the stability of these high interest rates has been remarkable. This stability is in spite of changes in vogue for monetary policy, most notably the switch from monetarism to in the so-called new consensus (and also, for some countries, fixing exchange rates).

The performance of the world economy has fallen substantially below that of the golden age. Since 1980, unemployment has increased, growth slowed, and financial instability and the economic cycle have returned. Moreover the period has been characterised - particularly for the US and UK - by almost relentless debt and asset inflations.

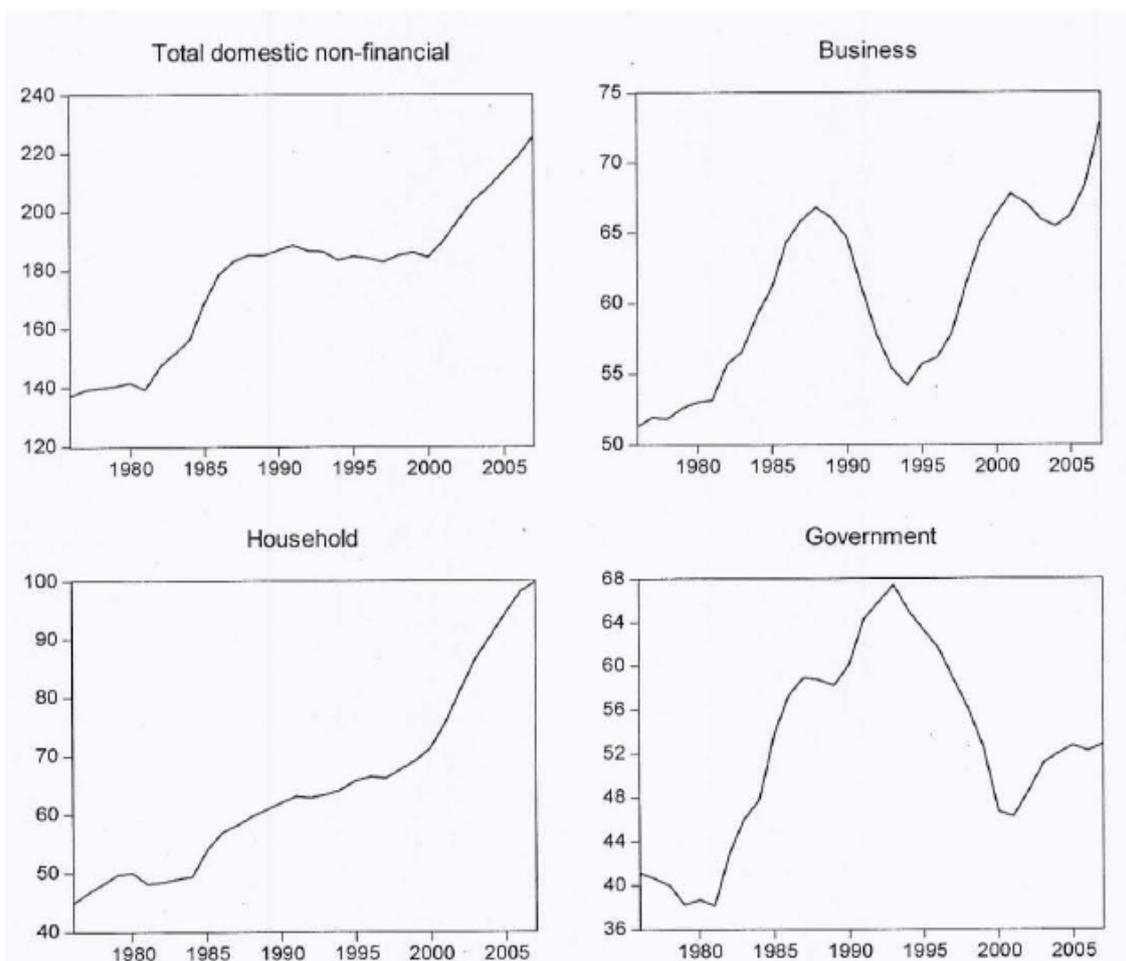
In the light of the theory above, these should be regarded as symptomatic of excessive expansions. Since 1980, the corporate sector in aggregate has invested at rates of interest that - as in the 1920s - simply cannot be afforded. And, over time, an increased burden of debt has been the consequence. Figure 5 shows debt measures for the US, according to domestic non-financial sectors.<sup>30</sup>

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crash and subsequent investment falls in the United States in 2001. Central banks around the world reduced discount rates; assets perceived as safer (including highly-rated corporate bonds) became more desirable, leading to increases in price and reductions in interest rates. However, lower interest rates were regarded mainly as an aberration rather than an ongoing condition for future activity. Policymakers and commentators fostered expectations of higher not lower rates into the future, and these higher rates have already become a reality.

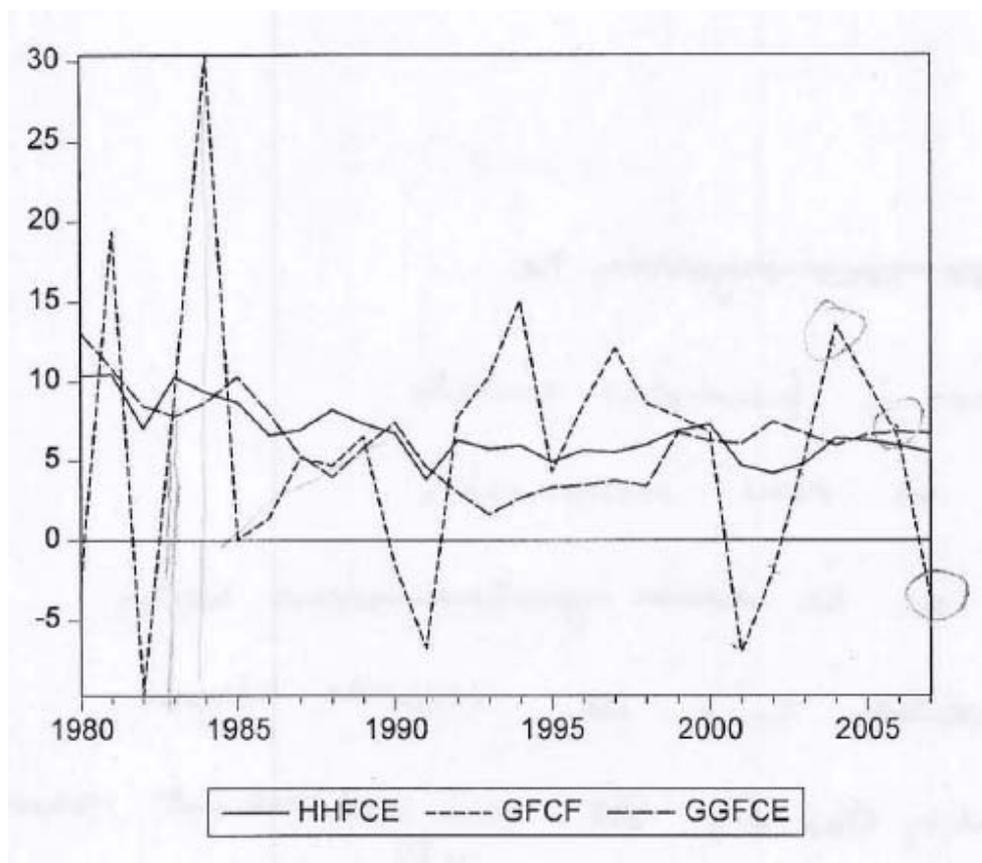
<sup>30</sup> Taken from the 'Z tables', table D3 on the Federal Reserve website.

Figure 5: US debt as a share of GDP



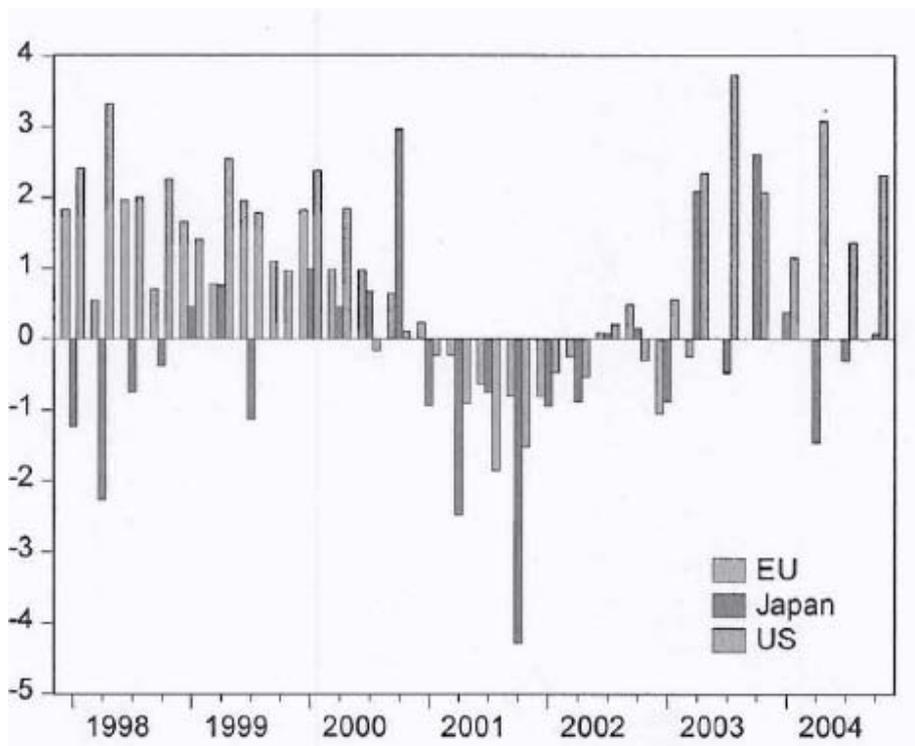
Of note is the total debt at 220% of GDP, not out of line with the figures for the US as it entered the Great Depression that Fisher had published.

Figure 6: Demand growth in the US, per cent



Expansion of investment has not continued unimpeded (Figure 6). Activity was severely curtailed in the wake of Volker's brutal interest rate increases (the official data appear terribly erratic in the early 1980s). The, only modest, expansion of the late 1980s gave way to severe recession. Then the more vigorous expansion of the late 1990s came to an abrupt end as capital markets collapsed at the end of the twentieth century. Figure 7 shows how this event was a global phenomenon, with changes remarkably coincident.

Figure 7: GFCF growth, quarter on previous quarter



These movements are mimicked precisely in the US business debt figures above. The government and household debt figures show supplementary sources of demand. The Volker shock was of course counteracted by a substantial expansion in government expenditure, as was the recession of the early 1990s. Only during the subsequent expansion of the 1990s, was the scale of government operations retracted. Household indebtedness has steadily increased over the whole period.

But the events of most contemporary interest and importance are those since 2000. Household indebtedness has increased very sharply; to an extent presumably with no precedent, and government intervention has again become important.<sup>31</sup> In the meantime, corporate investment has also picked up (Figure 6), corporate indebtedness has not diminished, rather it has expanded, again, to an unprecedented extent.

My fear is that these expansions, let alone associated extreme behaviour in the financial markets, have merely served to delay – and exacerbate – a long-overdue recession. The extreme indebtedness is the most telling and dangerous symptom of close to forty years of dear money.

<sup>31</sup> The debt figures do not include Bush's fiscal stimulus: \$170 billion would add 1.2% to debt as a share of GDP.

The ongoing financial market collapse reflects the end of a prolonged ‘game’ of ‘old maid’ with bad debt. The increasingly common references to the Great Depression do not seem inappropriate given the unprecedented duration of the modern era of dear money. Yet the authorities continue to regard matters as a liquidity crisis; in reality the crisis is one of solvency.

## **8. Inflation**

As the financial crisis unfolds, the Federal Reserve has entirely disregarded any dangers of consumer price inflation. Indeed, since 1990, the upswing has been achieved without any material inflationary conditions emerging, just as in the 1920s (and even in spite of oil prices).

Nor is there any reason to have expected otherwise. Keynes’s theory explains how an economy can be in equilibrium below full employment. An expansion from such a position will lead to higher employment, and any associated inflation should first, not be substantial, and second, should not be of concern to a post-Keynesian. Models based on the NAIRU and the classical labour market are even worse in their pretence that all inflation is what Keynes labelled ‘true inflation’, relevant only when full employment was reached (CW VII, pp. 118–19).

Moreover, the ‘achievement’ of low inflation has not prevented the most severe debt and capital market inflations of the post-war era. Indeed some hardly unorthodox sources have even argued that the low inflation has exacerbated the situation:

Somewhat paradoxically, it might be argued that the new challenges faced by central banks today result in part from the confluence of three unquestionably welcome developments: the globalisation of the real economy; liberalised financial markets; and the newly established anti-inflation credentials. In this view, globalisation provides the underlying disinflationary force, financial liberalisation the weaker financial constraints on self-reinforcing credit-asset price processes, and the anti-inflation credibility the anchoring of expectations that can help to delay the translation of excess demand pressures into higher inflation ... (BIS, 2005, p. 76)

This is quite possible, discount rate cuts may have acted on ‘animal spirits’, exacerbated excessive expansions and hence our present predicament. If the authorities choose dear money they should choose to live with higher unemployment equilibrium; however, perhaps preventing excessive expansion under dear money is an impossibility.

If there is a consumer price spectre, it is ultimately likely to be a deflationary one. Once contractionary forces have begun to bite, any cutbacks in employment, costs, wages, raw materials and investment will all lead to reduced aggregate demand and hence excess

supply. Through the laws of supply and demand, this will cause downward pressure on prices. As capacity becomes seriously excessive, prices may start to fall. At this point, the 'debt deflation' considerations advanced by Fisher (1933) become relevant. In particular, the real rate of interest will begin to rise, and the debt burden will increase relative to the costs of the other factors of production.<sup>32</sup>

Lastly, there is a need to counter this seemingly unassailable view that Keynes's policies are necessarily inflationary. As discussed, Keynes's theory allows for some inflation as a side effect of growth. But during the golden age there were also monetary factors at work that would have exacerbated the situation, in a manner that Keynes could never have conceived. Perhaps study of these considerations has been ruled out because according to 'Keynesians' money did not matter, but it should now.

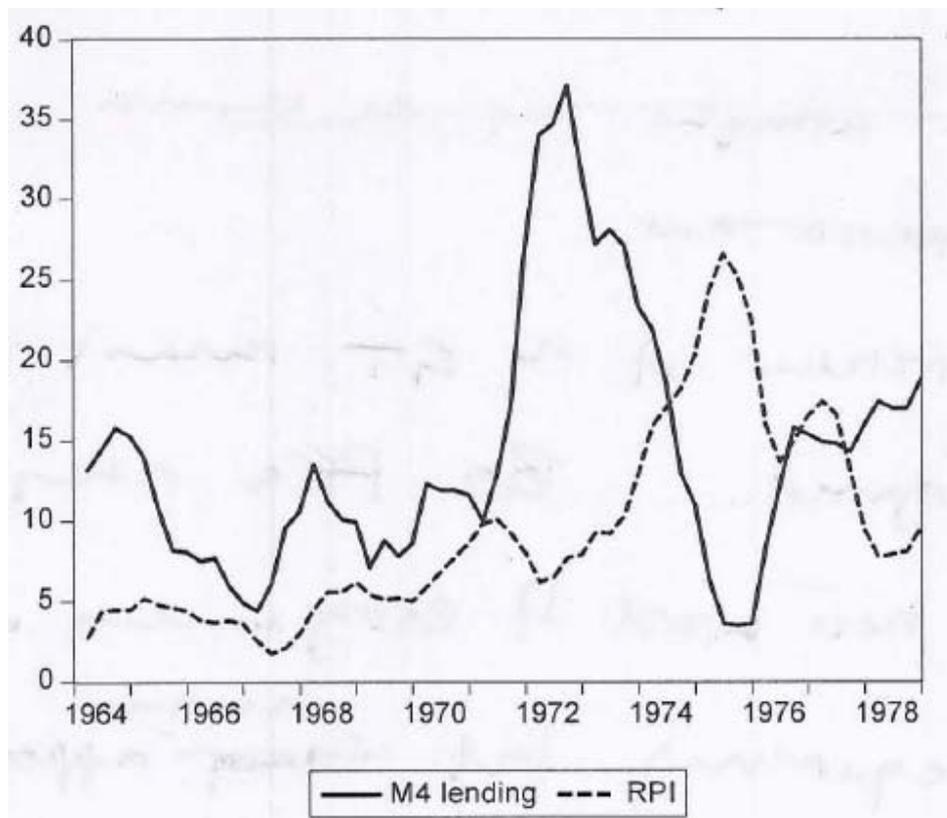
First, the monetary policies that Keynes specified at the National Debt Enquiry were abandoned within only a few years. Second, when the discount rate was re-activated, it was operated in a stop-go fashion, that seemingly related to the electoral cycle. Third, the inflation of the 1970s was preceded by a good deal of financial liberalisation, starting in the late 1960s as financial institutions lobbied (successfully) for greater lending powers. Matters culminated in the Bank of England's Competition and Credit Control (characterised after the event as 'all competition and no control'). The increased lending and expansion in demand was of course facilitated by the termination of the Bretton Woods agreement in [1972].

Figure 8 shows an immense growth in M4 lending plainly leading consumer price inflation over this critical period. While 'Keynesians' might have believed in the immutability of the Phillips relation, and Kaldor that there was no limit to expansion, commonsense says that such a rapid expansion of credit, even from a low base, must have at least had a role in the inflation of the 1970s.

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<sup>32</sup> Fisher's central argument was as follows: "I venture the opinion ... that, in the great booms and depressions, ... [the] two dominant factors, ... [are] *overindebtedness* to start with and *deflation* following soon after; ..." (Fisher, 1933, pp. 340–1). His paper examined a chain of ten events as the debt build-up process was reversed (*ibid.*, p. 343). Ultimately, however, he saw matters based on real not monetary cause. "The over-indebtedness hitherto presupposed must have had its starters. It may be started by many causes, of which the most common appears to be *new opportunities to invest at a big prospective profit*, as compared with ordinary profits and interest, such as through new inventions, new industries, development of new resources, opening of new lands or new markets' (Fisher, 1933, p. 348). (He did not set his position against Keynes's emerging views, even though the timing of his paper was such that he would surely have been aware of the Harris Foundation lectures.)

Figure 8: Inflation and credit



## 10. Conclusions

The damage wrought by the ‘Keynesian’ interpretation of the *General Theory* remains to be fully recognised. Post-Keynesians may have escaped the theoretical nonsense of exogenous money and simultaneous equations, but many appear content with their interpretation of his policy goals. The extension of post-Keynesianism into the realms of monetary policy, exemplified by Rochon, seems merely to bolster the present policy consensus.

But Keynes’s monetary policy is right there in the *General Theory*, and it is profoundly different to what seem to be the leading post-Keynesian interpretations. The current policy consensus neglects entirely the long rate, and it is that rate that Keynes considered fundamental to the operation of a free market economy. I fear very greatly the consequence of the neglect of this theory and policy. Perhaps the best to hope is that very real crisis might open minds more fully to the *General Theory*.

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