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| The University of Adelaide |
| The assessment of monetary and fiscal policy in Keynesian models Old and New |
| *Romer-Bernstein vs Cogan et. al.* |
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| *Cogan et al. (2009) challenge the Romer-Bernstein(2009) analysis of the Obama recovery plan. This note applies some Old Keynesian macroeconomics to strengthen the Romer-Bernstein analysis and to expose the weaknesses of the fashionable New Keynesian model employed by Cogan et. al.* |

**The assessment of monetary and fiscal policy in Keynesian models Old and New: Romer and Bernstein (2009) versus Cogan, Cwik, Taylor and Wieland (2009).**

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**Introduction**

Cogan, Cwik, Taylor and Weiland (CCTW) (2009) challenge the Romer and Berstein (R&B) (2009) analysis of the Obama stimulus strategy. They argue that the Old Keynesian multipliers estimated by B&R are too large; the persistence of the stimulus unbelievable and generally Old Keynesian analysis is not ‘state of the art’ or modern empirical macroeconomics.

One difference between the two assessments of the stimulus package is illustrated by Figure 1 which shows the strong and persistent effect of the fiscal stimulus suggested by the Old Keynesian analysis of R&B versus the complete crowding out of fiscal stimulus after 5 years suggested by the New Keynesian analysis of Taylor (1993) which, it is claimed, is similar to the result generated by the Smets-Wouters (2007) model employed by CCTW.

Specifically, CCTW argue that the results illustrated in Figure 1 are *prima facie* evidence that the Old Keynesian analysis of R&B is inconsistent with that of the New Keynesian analysis employed by Taylor (1993) and later Smets and Wouters (2007).



*Figure 1 Comparison of Old Keynesian (R&B) and New Keynesian (Taylor 1993) analysis of a permanent fiscal stimulus*

The purpose of this note is twofold. First, to explain how the two outcomes illustrated in Figure 1 should be interpreted and reconciled. Second, to explain how the quest for theoretical rigour by New Keynesians has come at the expense of relevance.

The apparently conflicting results illustrated in Figure 1 can be reconciled by applying some Old Keynesian analysis that originated with Leijonhufvud (1981, chapter 6) to distinguish between the effects of *large* vs *small* shocks. The New Keynesian analysis of Taylor (1993) illustrated in Figure 1 is restricted to the analysis of small shocks only. The analysis of R&B illustrated in Figure 1 implies a large shock.

Keynesian analysis has always embodied classical ideas as a result of the neoclassical synthesis. Old Keynesian analysis has retained some very Old ideas from the *General Theory* that enable it to deal with both small and large shocks. In the case of small shocks, Old Keynesian models behave in a classical self-adjusting fashion. But in the case of large shocks Old Keynesian models exhibit instability and are not self-adjusting even in the long run. New Keynesian economics, as a consequence of the New neoclassical synthesis between Keynesian and real business cycle theory, has lost its ability to distinguish between large and small shocks and along with it much Old Keynesian wisdom.

The results in Figure 1 can therefore be explained in terms that are consistent with Old Keynesian economics. The R&B analysis is consistent with the view that the US economy has been subjected to large shock that has overwhelmed the self-adjusting classical forces and shifted the economy *significantly away from the steady state path*. Fiscal and monetary stimulus is therefore required to restore the economy to a state where the self-adjusting and built-in stabilising forces can do their work. By contrast, the new Keynesian outcomes represented by the Taylor (1993) result reflect the standard textbook Old Keynesian analysis of a fiscal expansion *starting at or close to the steady state*. In that analysis the crowding out of expansionary fiscal policy has a time profile typical of that followed by the Taylor (1993) analysis illustrated in Figure 1. The initial impact is large but over time it is steadily reduced as rising prices, wages and interest rates begin to crowd-out private sector investment. Therefore, from the perspective of Old Keynesian economics there is in principle, no conflict between the two results illustrated in Figure 1.

However, both R&B and CCTW present additional analysis that is inconsistent with the results presented in Figure 1. R&B present additional analysis that implies that the US economy is self-adjusting even in the face of a large shock. That result is inconsistent with Old Keynesian analysis of large shocks and the response illustrated in Figure 1. Similarly, CCTW present a New Keynesian analysis of the recovery plan based on the Smets-Wouters (2007) version of a New Keynesian model that is inconsistent with the profile of crowding out illustrated in Figure 1 in terms of the Taylor (1993) analysis. The Smets-Wouters New Keynesian model generates *simultaneous* crowding out of government spending. For every dollar of increased spending, the Smets-Wouters model generates an immediate contraction in private consumption and investment of forty cents later rising to sixty cents. This result occurs because the Smets-Wouters model embodies an extreme version of classical theory as a consequence of the New neoclassical synthesis. The New neoclassical synthesis, on which New Keynesian models are based, consists of the imposition of nominal rigidities on otherwise frictionless real business cycle models or Arrow-Debreu efficient markets models. But it is this latter analysis that produces the extreme classical conclusions that have shattered the consensus in macroeconomics to which CCTW appeal.

In particular, Goodhart (2004, 2008), Rodrik (2009), Buiter (2008, 2009) and Rogers (2006, 2008) all question the theoretical foundations of the model that CCTW propose as the cutting edge of the current consensus in macroeconomics. In contrast to the view that it is ‘cutting edge’ research, Buiter (2009) describes this approach as the “useless ‘state of the art’ academic monetary economics”. He goes on to argue that in the face of the global financial crisis the Bank of England has simply abandoned this conventional wisdom embedded in the typical macroeconomics and monetary training of the past few decades. It is not yet clear what the Fed and ECB make of all this.

Without a coherent theoretical structure Buiter (2009) is then quite right to stress that we are left with a “..potpourri of factoids, partial theories, and empirical regularities without firm theoretical foundations, hunches, intuitions and half-developed insights”. In short we are flying blind. Rather than deal with all of the ramifications of this conclusion this note illustrates the ability of Old Keynesian economics to analyse the current crisis and contrasts it with the sterility of the New Keynesian analysis embedded in the Smets-Wouters model. Effectively New Keynesian economics has become too classical and as a result thrown macroeconomics and monetary theory out with the bathwater.

To outline these arguments the rest of the note proceeds as follows. Section II accepts the need for alternative assessments but asks the question why New Keynesian economics? Section III then applies some Old Keynesian analysis to examine the stability issues associated with interest rate pegs and uses the Japanese case as a counterexample to the CCTW analysis of instability. Keynesians Old and New still have a lot to learn from the Japanese experience. Section V then exposes the contradictions between Figure 1 and other elements in the CCTW and R&B analysis. Section VI concludes.

II **The need for an alternative assessment: OK but what form?**

CCTW argue that an alternative assessment of the R&B analysis is required because of the discrepancy between the results exhibited in Figure 1. Although we have seen that discrepancy can be resolved, on the face of it this is a reasonable request. However, doubts arise once the alternative form of assessment CCTW propose is examined. CCTW present the Smets-Wouters (2007) New Keynesian model as a leading example of the current consensus in macroeconomics but ignore the fact that this consensus has collapsed. Thus, ‘state of the art’ it may be but consensus it is no longer.

What exactly are the non-consensus economists complaining about?

Essentially the non-consensus economists are appalled at the crude treatment of money and financial markets in the consensus New Keynesian models. Rogers (2006, 2008) exposes the conceptual flaws in New Keynesian monetary theory and Goodhart (2008) complains about the continuing muddles in modern monetary theory and highlights the New Keynesian model as an example, while both Goodhart (2008) and Buiter (2009) note that new Keynesian models exclude everything relevant to the analysis of financial stability. But if the current crisis is caused by financial market instability how can we employ a model that excludes such a possibility to analyse how to resolve the crisis?

Technically, what is wrong with the treatment of monetary theory in the New Keynesian models of the Smets-Wouters type is that they embody an extreme form of the old classical idea that money is a veil and has no influence on the performance of the real economy. This idea is known as the classical dichotomy. The New Keynesian application of this old idea is extreme because it assumes that the veil can be removed entirely and/or replaced if and when it is convenient –see Gali (2008, chapter 2) for a concise statement of New Keynesian monetary theory aimed at graduate students. The central theoretical claim by New Keynesian economists is that the veil of money and the financial markets are irrelevant to modern macroeconomic and monetary analysis. The non-consensus economists rightly regard this claim as absurd. It ignores entirely the lessons provided by the history of financial crises presented by Kindleberger (2005), for example, not to mention the economics of asymmetrical information, moral hazard and over-borrowing that has been developed to analyse previous financial crises.

Nevertheless, an inspection of the Smets-Wouters model reveals that it exhibits this extreme form of the classical dichotomy. There is no specification of money or financial markets other than a mention of the monetary authorities who apply a generalized Taylor Rule to adjust the interest rate in response to fluctuations in inflation and output. But by adopting contemporary fashionable microeconomic foundations the Smets-Wouters model contains all the conceptual muddles in New Keynesian monetary theory about which Goodhart (2008) Rogers (2006, 2008) and Buiter (2008, 2009) complain. Williamson (2008) clearly also recognises that monetary theory erected on these foundations cannot deal with the questions raised by the financial crises but is unable to capitalise on his instincts because he feels constrained to use the same microeconomic foundations that are ultimately the source of his concern.

Furthermore, it is apparent that New Keynesian models are not macroeconomic models in the sense of Old Keynesian economics. The New Keynesian model commits the fallacy of composition by applying conclusions that would apply to a representative self-employed artisan or household-firm to the aggregate analysis of a complex capitalist system. It is one thing to suggest that macroeconomics should have microeconomic foundations. It is something else all-together to reduce macroeconomics to microeconomics through such devices as the representative agent and the avoidance of analysis of aggregate behaviour. The technical requirements of aggregation are unlikely to be met so the use of aggregate curves is unavoidable. Macroeconomics as practiced by Old Keynesians existed as a distinct discipline because technical aggregation problems are insoluble and/or too restrictive and because aggregate behaviour cannot be deduced solely from study of its microeconomic foundations. These properties should be well known – Kirman (1989, 1992). New Keynesians have simply abandoned these ideas by reducing macroeconomics to a branch of microeconomics.

This means that New Keynesian models cannot incorporate the paradox of thrift or the paradox of liquidity. In fact the concept of liquidity is also missing from New Keynesian models as Buiter (2008) noted. But the capitalist system rests on sophisticated financial markets which separate ownership and control in production, and production is financed through financial institutions and markets. It has long been recognised that such financial systems need to be ‘managed with discretion’, Bagehot (1873). In particular such systems are characterised by the paradox of liquidity – the fact that although a market may appear to be liquid to an individual it cannot be liquid to all market participants simultaneously. A balance of opinion is necessary to keep the market liquid for individuals and when that balance is lost liquidity can evaporate unless there is a buyer of last resort. Yet these fundamental principles have also disappeared from New Keynesian macroeconomics and monetary theory because it has adopted the so-called ‘microfoundations’ approach to macroeconomics that effectively assumes away such problems.

Thus although it is desirable to compare the results across several models it is far from clear that the Smets-Wouters model is the best or even a relevant choice.

Consequently non-consensus economists would hardly regard the Smets-Wouters model as ‘state-of-the art’ monetary economics and would probably also regard the fact that such New Keynesian models are commonly taught in graduate schools as more of a liability than an asset.

III **Interest rate pegs and instability**

Nevertheless, having made their choice, CCTW begin by attacking the R&B assumption that the Federal Reserve pegs the federal funds rate at zero for as long as their simulations run. They state that such an assumption is prohibited in New Keynesian models because it produces calamitous economic consequences. Specifically, it is argued, following Sargent and Wallace (1975) that an interest rate peg will lead to instability and non-uniqueness of the rational expectations equilibrium. Consequently, expectations of households and firms become unanchored and inflation may explode.

How would Old Keynesians respond to these charges? Well, for a start they can draw on some analysis by an Old Keynesian like Leijonhufvud, and an Old monetarist like Cagan to provide a theoretical rebuttal, and to the case of Japan to provide an empirical counter example.

Starting with the empirical counter example it is evident that Japan pegged the equivalent of the federal funds rate at zero for many years without producing the hyperinflation predicted by the Sargent and Wallace model. Instead Japan was continually plagued by the threat of deflation and their fiscal expansion failed to lift growth. An analysis of what went wrong for Japan is therefore of interest to both Old and New Keynesians because it doesn’t appear to fit well with either model. So what is going on here and what are the lessons for the Keynesians?

First, the ideas from Leijonhufvud and Cagan will be used to explain the failure of the Sargent and Wallace analysis then the Krugman-Keynes analysis will be applied to some stylised facts provided by McKinnon and others to explain the lesson to be learnt from Japan’s experience.

Leijonhufvud (1981) suggested that economies are characterised by a stable classical corridor (the C-corridor) within which the built-in and natural stabilising properties of the economy would counter small ‘shocks’. However, large shocks could push the economy outside this stable C-corridor and if this occurred, the built-in and natural stabilizing forces of the economy would be overwhelmed. The economy would be unable to return to its potential growth path unassisted. Cagan (1956) is important because his stability condition can be readily applied to explain the conditions under which an economy is likely to be propelled beyond the stable C-corridor –in either the hyperinflation or deflation direction. Interestingly the liquidity trap at low or zero interest rates is just such an occasion.

Cagan’s stability is condition is: and is readily derived from an Old Keynesian monetary model as Scarth (1996, chapter 4) outlines. The elements in the expression are defined as follows: is the speed at which adaptive expectations are revised, is the interest elasticity of the demand for money and is the nominal interest rate. What this condition tells us is that when an economy is forced into a state where the rate of interest is very low and the interest elasticity of demand very high, the self-adjusting ability of the economy will be compromised. In the case of Japan or the USA today where the rate of interest is zero or marginally above zero Cagan’s stability condition is violated. Thus if an economy suffers a ‘large’ shock or shocks as Japan did in the 1990s, the United States did in 2007-2008 and the global economy is experiencing now, it is unwise to rely of the self-adjusting properties of the system. McKinnon (2007) also makes it clear that in a liquidity trap the usual condition for portfolio equilibrium implied by interest parity cannot be met and this is likely to produce increased instability in foreign exchange markets.



Under these conditions the system is incapable of returning unaided to its full employment growth path and there is no threat of inflation or hyperinflation as suggested by the Sargent and Wallace analysis. Thus, although Sargent and Wallace are right to suggest that the US economy is unstable under present conditions, that instability will not lead to hyperinflation. Instead deflation and stagnation are the greater threat. It is on those grounds that fiscal and monetary intervention is justified to at least push the economy back into the stable C-corridor.

Our first pass at a theoretical explanation of the difference between the two results illustrated in Figure 1 therefore reveals that the New Keynesian analysis tacitly assumes that the economy does not deviate very far from its potential growth path. This assumption is built into Taylor (1993) and the Sargent and Wallace analysis and is explicitly stated in the Smets-Wouters (2007, p. 588) model. All Keynesian models subject to *small shocks* would probably show the long-run crowding out of fiscal policy illustrated by the Taylor (1993) model in Figure 1. *But this is not the situation facing the United States and the global economy now*. By any metric, the global economy has been subjected to a large shock. The Old Keynesian analysis presented in Figure 1 can therefore be interpreted in terms of a *large shock* that has pushed the economy beyond the influence of the built-in and natural stabilizing forces. With the violation of Cagan’s stability condition it seems more sensible to interpret the Obama recovery plan as an attempt to push the economy back into its stable C-corridor.

This is not to suggest that R&B had this version of Old Keynesian analysis in mind (in fact it seems that they may not) but merely to draw attention to the fact than in the *potpourri* world that is modern macroeconomics Old Keynesians have some answers.

Old Keynesians also have some ideas that explain why fiscal policy failed in Japan.

*The liquidity trap and the failure of fiscal policy in Japan*

Why then did fiscal expansion fail in Japan? Apart from the obvious reason that much of the fiscal spending was wasted on low value added projects the fundamental problem faced by Japan was that the cause of the collapse of the return on capital investment in Japan was external and not internal. Fiscal policy alone could not remove the constraint. A Krugman-Keynes analysis, bolstered by some stylised facts from McKinnon and Ono (2001), explains what happened. It has little to do with the size of Old or New Keynesian multipliers.

Krugman (1998) first drew attention to the fact that Japan had fallen into a liquidity trap where he postulated that the return on capital investment in Japan was negative (he called it the real rate of interest but Keynes’ distinction between the rate of interest and the return on capital investment strengthens his analysis). The Krugman-Keynes analysis can be illustrated in terms of the IS-LM model as in Figure 2. The collapse in the rate of return on capital investment in Japan shifts the IS curve sharply to the left and when the Bank of Japan counters by lowering the rate of interest that policy fails when the nominal rate of interest hits the zero lower bound. Monetary policy is always a weak reed to rely on when the return on capital is falling faster or further than the cost of capital as that very Old Keynesian, Mr Keynes (1936) explained.



*Figure 2 The Krugman-Keynes liquidity trap*

The other missing piece to the riddle about the failure of fiscal policy in Japan is provided by McKinnon and Ono (2001) who explain the collapse of the return on investment in terms of external factors. That analysis applied to the period from the early 1970s to early 1990s, where Japan came under intense pressure from the United States to appreciate the yen as a means to reducing the US trade deficit. McKinnon (2007) extends the analysis to the post appreciation period when other forces restrained the return on capital investment in Japan. But in addition, in 1994, before Japan has recovered from the bursting of the commercial property bubble, China instituted a unilateral and significant devaluation of the yuan and shortly thereafter the Asian crisis of 1998 induced other SE Asian economies to follow a similar strategy with undervalued exchange rates loosely pegged to the US dollar. The impact of these developments on Japan was to significantly undercut its competitiveness on world markets thereby reducing the return on capital investment in Japan until 2002. In the Krugman-Keynes model illustrated in Figure 2 the rate of return on capital investment is negative at full employment implying that Japan had redundant capital during that period. Under those conditions directing capital investment offshore is more attractive than domestic investment and there is little that fiscal stimulus can do to overcome the externally imposed constraint.

Under those circumstances Japan remained trapped because fiscal policy had minimal impact on the competitiveness of Japanese industry. Thus it would be incorrect to conclude from Japan’s experience that fiscal stimulus will always fail. It failed to restore growth in Japan because the return to capital investment was depressed by external and not internal factors. The Japanese were then powerless alone to relieve that pressure. To the extent that fiscal policy sustained spending, however inefficiently, it prevented Japan from falling into a more serious debt deflation in the Cagan-Leijonhufvud unstable zone. It was nevertheless powerless to restore the Japanese economy to its previous growth path.

Thus the lesson to learn from Old Keynesian analysis of Japan’s liquidity trap is not that the algebraic value of the multiplier is at a maximum when interest rates are constant but that *fiscal policy works and multipliers are engaged when fiscal policy increases the return on private capital investment*. This is the measure against which fiscal stimulus packages should be assessed. If fiscal policy cannot crowd-in private investment then it will likely fail to sustain growth with full employment.

V **The effectiveness of fiscal stimulus in Old and New Keynesian models**

The inconsistencies between Figure 1 and other aspects of the CCTW and R&B analysis can now be highlighted.



*Figure 3 Romer-Bernstein illustration of the recovery plan vs no plan outcomes.*

Starting with the R&B analysis, the first thing that strikes the observer about Figure 3 is that it takes for granted that the economy is entirely self-adjusting even in the face of the most significant financial shock since the Great Depression. Figure 3 is a picture of a typical textbook Keynesian business cycle. It suggests that even without the recovery plan the US economy would return to effective full employment by 2013-14. Thus Figure 3 suggests that there is no threat of another Great Depression or even any sign that the US economy could become trapped in the Cagan-Leijonhufvud unstable zone even if no recovery plan were in place. This is inconsistent with Old Keynesian analysis. At the very least the economy would take longer to recover unaided.

In that sense the B&R analysis in Figure 3 is inconsistent with that in Figure 1. The B&R outcome illustrated in Figure 1 is consistent with the Cagan-Leijonhufvud analysis that the recession is likely to be at best a reclining or lazy-J with a sharp contraction followed by a sluggish recovery. By contrast, the path labelled ‘Without Recovery Plan’ in Figure 3 suggests that apart from its duration the current recession is otherwise a ‘normal’ post war recession. This seems to be inconsistent with the global reach of the current crisis and the magnitude and speed of the collapse in global industrial production. Factors external to the United States are therefore playing an important role in the current US recession and their causes and consequences need to the examined. Consequently, for Figures 1 and 3 to be consistent, the path labelled “Without Recovery Plan” in Figure 3 should not turn down automatically as suggested by R&B. As Japan discovered, there are many reasons why the economy may be incapable of automatically returning to full employment even over a long time frame. In particular, relying on wage and price flexibility to do the job is seldom recommended, not only because it is ineffective and would take a long time but because wage and price deflation is compounded by the problems associated with debt deflation. The latter is a feature that is often missing from Old Keynesian analysis. – but see Tobin (1975).

Despite this shortcoming in presentation, there is a richer and stronger Old Keynesian case to be made for the Obama recovery plan that lies beneath the surface of the case made by R&B. Fiscal stimulus is at least *necessary* to prevent a debt deflation process from taking hold and is also *necessary* to shift the economy out of the unstable Cagan-Leijonhufvud zone and into the stable classical corridor where the built-in and natural stabilizers can come into play. But it may not be *sufficient*. So long as banking fragility and disruption to the international monetary system remains the domestic recovery plan may not be fully effective. Co-ordination of key exchange rates may be required to lift global industrial production – this is the lesson from Japan’s experience. In addition, for the stabilizing forces to work, the nominal rate of interest must be lifted above zero, the elasticity of the demand of money must fall and confidence, represented by less rapid revision of expectations, must increase. In that respect, from the perspective of Cagan’s stability analysis it was probably a mistake to reduce interest rates to zero. Not only does it imply potential macroeconomic instability it also implies increased volatility in foreign exchange markets as McKinnon (2007) outlined. Nevertheless, the clear message from the Old Keynesian analysis is that outside of the stable C-zone government intervention is essential. Without it the economy is capable of performing below potential for decades. This was the central message of that very Old Keynesian, Mr Keynes (1936, p. 204).

By contrast, CCTW argue that there are many reasons suggested by their New Keynesian model, to explain why the economy will not follow the path labelled ‘”With Recovery Plan” in Figure 3. They present several reasons why fiscal stimulus fails to work in their simulations suggesting that the economy will track the “Without Recovery Plan” more closely as fiscal stimulus is largely ineffective. Their reasons for the ineffectiveness of fiscal stimulus include the Ricardian equivalence effect, crowding out of private sector consumption and investment by rising interest rates, and the fact that the estimated ‘multipliers’ turn negative in some periods because private sector consumption and investment spending decline more than the increase in government spending. All of these issues are familiar from classical economics but they take on extreme forms as a result of the microeconomic foundations underlying the New Keynesian model of Smets-Wouters.

To begin with, it must be realised that the ineffectiveness of fiscal policy is hard-wired into the Smets-Wouters model as a result of the microeconomic foundations on which it is rests. On these grounds alone Old and New Keynesians inhabit quite distinct conceptual worlds.

New Keynesian models imagine a world where it is ‘as if’ a centralised auctioneer establishes prices from now until eternity across all conceivable states of the economic universe. Economic life then evolves through this universe subject only to well behaved and known stochastic disturbances. In such a universe there are no Old Keynesian or monetary problems for the simple reason that the ‘as if’ auction that is employed by the New Keynesians and other contemporary macroeconomists is a substitute for money, governments and central banks – it eliminates all the tasks that these institutions perform. Failure to recognise this has led to all the confusion that surrounds attempts to include money in these models and the analysis of fiscal and monetary policy in models that rely on the existence of a centralised auction.

Similarly, although a composite commodity is defined, the Smets-Wouters model is not an aggregate or macroeconomic model in the Old Keynesian sense. Old Keynesian macroeconomics is premised on the fallacy of composition and recognises that aggregate behaviour cannot be deduced from the study of the behaviour of micro level units alone. Thus Old Keynesian economics has behavioural and microeconomic foundations that differ fundamentally from the Walrasian-Fisherian microeconomic foundations embraced by the New Keynesians. Ultimately, the problem for New Keynesians is that they have no macroeconomic superstructure to erect on their Walrasian-Fisherian microeconomic foundations. The difference in microeconomic foundations and the relationship between microeconomics and macroeconomics then accounts for most if not all of the un-Keynesian results that are now embedded in New Keynesian models of the Smets-Wouters type.

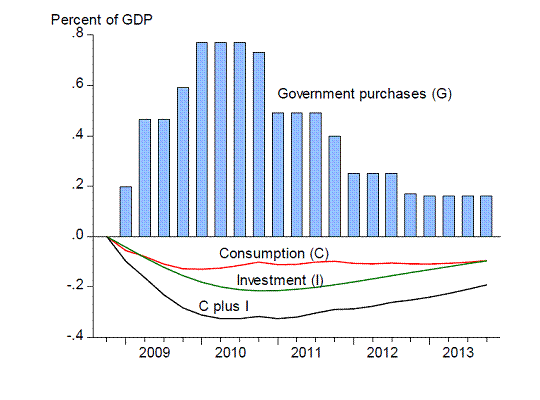
To see this note that the Smets-Wouters model (2007, p. 588) contains Walrasian-Fisherian type households who accumulate capital and rent its services to firms. Obviously this is not meant to be descriptive but only a simplifying treatment to facilitate analysis. However, it obscures and obfuscates the relationship between households and firms and is obviously a false description of that relationship. It is therefore far from an innocent simplifying strategy. Models based on false assumptions may well produce acceptable predictions but it is well understood that they contribute nothing to understanding. In that respect, CCTW (2009, p.15) claim that the Smets-Wouters model fits the US data ‘well’. So what? As Friedman also explained, ‘fitting the data well’ is a necessary but not a sufficient requirement for a ‘good’ model. Good models must also have explanatory power. Models based on false assumptions cannot have explanatory power by definition and the ‘as if’ methodology does not justify the use of such models.

Relying on the existence of such an auction to analyse household behaviour is therefore inconsistent with any attempt to analyse monetary and fiscal policy, because the introduction of additional agents called the government or the central bank or firms with market power is inconsistent with the auction necessary to analyse household behaviour. Yet these are all elements incorporated into New Keynesian models. But none of these elements is consistent with the auction that underpins the microeconomic foundations adopted by New Keynesians. For example, Wallace (2004) exposed the sterility of New Keynesian monetary theory when he revealed the futility of attempts to find a role for the central bank in a cashless Arrow-Debreu economy. But this, in essence, is what New Keynesian monetary theorists claim to do – despite the warning by Arrow and Hahn (1971).

These extreme classical properties of the New Keynesian model are embedded in the expected utility analysis that underpins the consumption and investment Euler equations derived by Smets-Wouters (2007, equations (2) and (3)). Maximizing the expected utility of the representative household over an infinite horizon to produce such Euler equations is only possible if an auctioneer exists and runs the time-0 auction. In particular it is also evident that the consumption Euler equation written by Smets-Wouters implies that consumption goods can be traded across time without the intervention of money or credit in a moneyless world of perfect barter – this is what the time-0 auction implies. But a time-0 auction is a non-operational thought experiment –Ljungqvist and Sargent (2004). It is ironic that if that were not the case then central planning would be a possibility as many have pointed out.

If such an additional redundant agent is imposed on the model its actions will be inconsistent with those of the auctioneer and unless it has access to technology to satisfy its own consumption needs it will appear as a friction and parasitic absorber of resources. An idea often expressed as the view that governments do not produce, they only redistribute. Not surprisingly, CCTW (2009, p. 8) draw attention to this property of the Smets-Wouters model and parade it as a virtue. But such models are incapable of assessing what role government may play in enhancing the productive capacity and performance of the economy and consequently they have no way of analysing the productive enhancing objectives of fiscal policy. In other words, models based on the assumption of a centralised auction are incapable of analysing the consequences of collective action, as the need for such action does not exist in those models.

To illustrate the consequences of some of these features of New Keynesian models consider the CCTW application of the Smets-Wouters analysis of government purchases. The CCTW analysis is illustrated in Figure 4 and is inconsistent with the time profile of the Taylor (1993) analysis illustrated in Figure 1.



*Figure 4 Simultaneous crowding out of consumption and investment by government purchases in the Smets-Wouters New Keynesian model.*

First, note that the ‘multipliers’ referred to by CCTW are not the multipliers of Old Keynesian economics. Old Keynesian fiscal expenditure multipliers embedded in aggregate demand and supply models are functions of the marginal propensity to consume, tax rates, the marginal propensity to import, and the interest and income elasticity of money demand. When operating at full employment Old Keynesian multipliers may be zero in the long run if complete crowing out occurs. So Old Keynesian multipliers have a distinct time profile and government purchases lose their real stimulatory effect as wages, prices and interest rates rise when the economy approaches and/or exceeds its potential or full employment growth path (assuming that government purchases have no influence on the capital stock and the potential level of output). This effectively is what the Taylor (1993) result shows in Figure 1. But Figure 4 shows something much more extreme.

Figure 4 shows that as soon as government purchases are made, private consumption and investment shrink. There is significant *simultaneous crowding* out of the private sector in the Smets-Wouters model. As CCTW (2009, p. 13) stress, the ‘multipliers in their application of the Smets-Wouters model are less than one from the start. This outcome is not consistent with the time profile exhibited by the Taylor (1993) model in Figure 1. But as explained in the paragraphs above, it is a result that is inevitable in the Smets-Wouters model because the model is based on Walrasian-Fisher microeconomic foundations and an implicit reliance on a centralised auction that renders a role for government redundant. What Figure 4 reveals is characteristic of the real business cycle models to which nominal rigidities have been attached. Attaching such rigidities does not make the model any more Keynesian or change the properties of the underlying real business cycle model. As the real business cycle model has no rationale for government policy, in the contemporary real business cycle world government does not produce anything it merely redistributes, imposing a role for government is welfare reducing! Attempting to analyse the impact of a government’s fiscal stimulus on the productive capacity of the economy is therefore moot.

By contrast, in capitalist economies characterised by some unquantifiable uncertainty and the financing of production by potentially fragile banks and financial markets, government and its agent the central bank play an important part in stabilising the system and promoting the growth in the productive capacity of the economy. These functions are invisible to users of the New Keynesian model because of the extreme and unattainable properties of classical economics on which it is based.

VI **Concluding remarks**.

The debate over the effectiveness or otherwise of the Obama recovery programme exposes deep conceptual divisions between New and Old Keynesians. It could be said that Old Keynesians remain attached to a loose form of the Old neoclassical synthesis while New Keynesians embrace the New neoclassical synthesis. The New neoclassical synthesis involves the attachment of nominal rigidities and frictions to otherwise frictionless real business cycle or Arrow-Debreu efficient markets models. This, in essence is what the use of sound microeconomic foundations means – Solow (1983). But in taking that step New Keynesians abandon macroeconomics and monetary theory and not merely Old Keynesian economics. In a sense we could say that Old Keynesians prefer to be vaguely right while New Keynesians would rather be precisely wrong so long as they comply with the standards of contemporary rigour.

The difference in interpretation of the Obama recovery plan by R&B on the one hand, and CCTW on the other is broadly consistent with the position sketched above.

The R&B analysis recognises the serious nature of the current situation but nevertheless still interprets the possible outcomes as consistent with a standard Old Keynesian textbook business cycle –allbeit one more serious than usual. This note has drawn attention to the existence of Old Keynesian analysis that provides more comprehensive support for the need for a recovery plan. Under current circumstances several economies, including the US, where interest rates are zero or near zero, are in a situation where the normal stabilizing forces of the economy have been overwhelmed. Under these circumstances a monetary and fiscal stimulus is necessary but may not be sufficient to restore the economy to its prior growth path. Sustainable recovery requires recovery in the return on capital to maintain private sector investment and employment growth. Given the global nature of the current crisis and the role played by exchange rate distortions, current account imbalances and the excess accumulation of reserves, particularly in Asia, progress on that front will also be required. A sustainable resolution of the current crisis will not be achieved by domestic policies alone. All these issues can be addressed by Old Keynesian methods.

The same cannot be said of New Keynesian models. The New Keynesians have embraced an extreme form of classical economics that effectively precludes any analysis of collective action undertaken by the Treasury or the Central Bank. New Keynesian DSGE models now rest on microeconomic foundations that require a form of centralised auction that eliminates the need for collective action by construction. Attempts to examine the consequences of such action by imposing it on models where it is not required inevitable leads to the conclusion that it is not effective. Essentially, monetary and fiscal stimulus is not effective in the Smets-Wouters model because it is not needed. Collective action has no role to play in such models. As many observers have now come to realise these models may be ‘state of the art’ but they are effectively useless when it comes to analysing the current crisis. The fact that these models “fit the data well” is not a robust test of their relevance.

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