Fiscal Withdrawal and Real Wage Repression: A Stock-flow Consistent Analysis in the Context of the Global Financial Crisis

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Abstract: While the 2007-2009 global financial crisis (GFC) began as a localised financial disturbance due to the collapse of the US real estate boom, it was quickly transformed into a global economic downturn due to the inter-connectivity of the international financial system. Although many commentators have focused on the weaknesses of the "originate-and-distribute" model of securitisation as the main culprit, there are two deep-seated factors that are often overlooked. First, the wage share of national income has plummeted in most advanced industrial nations. Accordingly, these nations have increasingly relied on the unsustainable growth of credit-driven consumption to maintain rates of accumulation. Second, neoliberal policies of fiscal withdrawal have destroyed real wealth and forced non-government sectors into deficit. This study examines these aspects of the crisis by explaining how they can be embedded within a stock-flow-consistent (SFC) modelling framework (Godley and Lavoie, 2007). In addition it suggests ways that Minsky's analysis of Financial Instability can be incorporated into the proposed SFC model.

1 Introduction

The world has just witnessed and is still suffering from the 2007-2009 Global Financial Crisis (GFC), which began as a localized financial disturbance due to the collapse of the US real estate boom, and was quickly transformed into a global economic downturn. The major developed economies found themselves in a deep recession due to the interconnectivity of the international financial system, which clearly revealed that macroeconomic theorists ignore at their peril on the effects of financial relations over the real economy.

The phenomenon of financialisation played an important role in the crisis. Financialisation entails an expansion of the financial sector relative to the non-financial sector. Associated with this expansion are other components including increasing deregulation of the financial sector and proliferation of new financial instruments such as credit default swaps and collateralised debt obligations, the liberalization of international capital flows, and increasing volatility of foreign exchange markets (see, for example, Lavoie (2008)).

Nevertheless, the modern money perspective adopted by the authors of this paper puts more emphasis on other deep-seated, and frequently ignored, drivers of financial and macroeconomic instability. Here, we have been guided by Minsky's analysis of financial fragility and instability. The next section of the paper examines a series of stylized facts that help to explain the severity of the global crisis. On the basis of this interrogation, the following section of the paper reviews the burgeoning literature on Post Keynesian macroeconomic modeling. The motivation for this review is to identify a parsimonious set of model components that can be brought together within a stock-flow-consistent macroeconomic model to examine the GFC and its effects on economic activity. The modeling framework that results from this integration of components is set out in the second-to-last section of the paper, with conclusions to follow. This paper stops short of describing the more detailed model-building that will be the focus of future research, concentrating

instead on the resulting stock-flow-consistent (SFC) accounting framework (specifically, the balance-sheet and transaction matrix). This framework will guide and constrain subsequent modifications to arrive at the proposed model, which will incorporate extensions to SFC model developed by Eatwell et al(2008), as described in section four of the paper. The resulting transactions and balance-sheet tables, which have been derived in accordance with relevant SFC accounting principles, are set out in the Table 1 and Table 2 (see Appendix A) of the paper. The interpretation of this chosen accounting framework, as well as any implications it might have for policy, are briefly examined in section five of the paper.

2 A Minskyan interpretation of the GFC

In the aftermath of the GFC, Hyman Minsky's ideas about financial instability have attracted unprecedented interest, with many economists—both orthodox and heterodox—calling this period a 'Minsky moment'(Whalen, 2009, Wray, 2009). Minsky's work has been cited as an invaluable tool for explaining the recent experience of economic turmoil both in September, 2008, by Martin Wolf of the *Financial Times*, and in May, 2009, by *New York Times* columnist and celebrity economist, Paul Krugman.

2.1 Financial instability Hypothesis and GFC

According to Minsky's Financial Instability Hypothesis (FIH), financial instability emerges endogenously within a capitalist system. From Minsky's perspective, severe business cycles are unavoidable due to the quixotic nature of interactions between endogenously evolving financial structures and levels of real investment (Minsky, 1986). Minsky argues that financial fragility increases through endogenous changes to the balance sheet positions of households, firms and banks. A prolonged period of growth results in the transformation of what was initially a robust financial system into one that becomes increasingly fragile as firms, households, and banks are induced to take on riskier financial practices. Ultimately, the debt that accumulates during long expansions can only be wound down during subsequent periods of deep depression (Minsky, 1964, Minsky, 1995, Minsky, 1975). This inbuilt proclivity of the capitalist financial systems can be described by the aphorism "success breeds excess breeds failure" (Palley, 2009).

The elements accounting for financial fragility include: loss of diversification, increasingly deferred (present value) payback periods, and an increasing reliance on external finance on the part of banks, households and firms (Juniper and Li, 2009). This is precisely the point where Minsky's well known analysis of transitions between hedge, speculative and Ponzi financial positions comes into play. According to Minsky, the "hedge" position is one in which borrowers expect that in-coming revenues are sufficient to repay both interest and loan principal, under a wide range of interest rates. The "speculative position" is one for which anticipated revenues only cover interest payments. Additional short term borrowing is required for any expansion in working capital or inventory. Finally, the "Ponzi position" is one for which revenues are insufficient even to cover interest payments, and borrowers are relying on anticipated capital gains to meet their obligations. Using this taxonomy of financial positions, Minsky showed how a relatively "sound" financial structure could turn into a "fragile" one.

According to Minsky's analysis of financial transition, the financial structure of the economy becomes more and more fragile over a period of prosperity. In the early stages of prosperity, enterprises in highly profitable segments are rewarded for taking on increasing amounts of debt and their success encourages other firms to engage in similar behaviour. This pattern

was certainly evident in the high-tech sector during the late 1990s and in the housing sector during early- and mid-2000s. As Wray (2009) : 821 explains:

> A virtuous cycle was created: with easy credit, asset prices could be bid up and rising prices encouraged yet more innovation and competition to further increase leverage. Innovations expanded loan supply, fuelled home buying and drove up the value of real estate, which increased the size of loans required and justified rising leverage ratios (loan-to-value and loan-to-income) since homes could always be refinanced or sold later at higher prices if problems developed. The virtuous cycle pushed the financial system through the structures that Minsky labeled hedge, speculative and finally Ponzi—which requires asset price appreciation to validate it.

As the present crisis moved beyond its beginnings, marked by a credit crunch in the summer of 2007, then turbulence in the subprime mortgage market, into an economy-wide recession, Whalen (2009) felt obliged to observe that: "it is pretty clear the situation has gone beyond a Minsky 'moment' and is more akin to an economic 'meltdown', at least with respect to U.S. housing, banking, and stocks".

2.2 The role of Government in Minsky's Analysis

Minsky followed Keynes in endorsing the achievement of full employment, as an objective of responsible government. In addition, Minsky argued that inflation is not necessarily an effect of monetary policy. Tymoigne (2006a) approves of Minskys' emphasis on the important stabilizing role of Big Government, positing: first, if the government ensure that the financial system is robust, this can only increase the effectiveness of both monetary and fiscal policy, not least, by limiting the moral hazard generated by the existence of a floor on profit and asset prices. Second, he argues that, in a capitalist economy, the best way to fight poverty is by providing guaranteed access to a job. Third, he observes that, in a fragile environment, inflation is far more difficult to deal with. Indeed, once inflationary expectations are incorporated into the anticipated profile of cash inflows, an abnormal drop in inflation could well result in financial instability. In addition, the "paradox of monetary policy" is that lender of last resort is inflationary. This does not mean that it will automatically generate inflation but, in a fragile environment, monetary inflation has more chance to occur. Fourth, he distinguishes between the goals of full employment and economic growth arguing that policies to achieve each of these goals should be unrelated.

However, Davidson (1978) noted that, promotion of hedge financing may not be good because it may decrease aggregate demand or may decrease growth. Also, Dymsky and Pollin (1994), for their part, argue that the era of big government led to smoother, but also slower, economic growth. Minsky (1986) himself, suggested that combining employer of last resort programs, incomes policy, and socialization of investment n relation to private needs is the best policy package for today's circumstances. In his view, (Minsky, 1963) expansion led by government-spending would allow the private sector to expand without creating fragile balance sheets in the non-government sector in tradition with Keynes. This is because government deficit spending adds safe treasury debt to private portfolios even as it raises profits, income and employment through the "government spending multiplier".

2.3 Formalizing (problem) GFC within Minskyan Framework:

Many contemporary Post Keynesians economists (see e.g.(Whalen, 2009, Kregel, 2008)) follow Minsky in arguing that the recent economic crisis can be fully explained by his FIH. However, some authors go further in suggesting that Minsky's analysis must be extended to account for recent developments within the household sector (Dymski, 2010), including the effects of neoliberal policies of real wage repression on worker consumption and savings behaviour over the 1980s and beyond. As Palley (2009) cautions,

> The interpretation of the financial crisis and Great Recession has enormous significance for economic policy. If interpreted as a purely financial crisis, in the spirit of a pure Minsky crisis, the policy implication is to fix the financial system through reforms addressing excess leverage, excess risk-taking, inadequate capital requirements, and badly designed incentive pay arrangements for bankers and financiers. However, its then will overlook the neo-liberal root of the crisis and there is no need for reform of the real economy because that is not the source of the problem.

3 The GFC: Stylized facts and their implications

Popular commentary on the GFC 2007-2009, has either focused on the weaknesses of the originate-to-distribute (OTD) model of securitisation, or on secular imbalances in the external sector as the major culprits. In this kind of analysis two more deep-seated factors are often overlooked. First, the wage share of national income has plummeted in most advanced industrial nations with many governments relying increasingly on unsustainable growth of credit-driven consumption to maintain rates of accumulation. Second, neoliberal policies of fiscal withdrawal have destroyed real wealth and forced non-government sectors into deficit.

3.1 Fiscal Withdrawal and resulting Deficit in Non-government sector:

Many authors have emphasized the unsustainable character of economic growth in nations whose governments have embraced policies of fiscal austerity (see e.g(Juniper and Mitchell, 2008, Mitchell, 2009, Stockhammer, 2009, Wray, 2009). Despite the emphasis of neoliberal policy within the OECD, over the 1980s and 90s, on downsizing the state, it is remarkable that government shares of total expenditure and revenues have not fallen dramatically. Stockhammer (2009) describes this resilience of the big government as the *neoliberal puzzle*[2]. In part, it could be argued that, from time to time, government expenditure has been directed at bailout plans to support the financial system and has additionally been driven by overseas military imperatives, complemented by US-style "prison Keynesianism" on the domestic front (with 1% of the nation's population in jail).

We can explain the phenomenon of fiscal withdrawal using the well-known macroeconomic identity of the inter-sectoral financial flows in the economy:

$$(S - I) \equiv (T - G) + (M - X)$$

Here, *(S-I)* is domestic private sector balance, *(T-G)* is the government sector balance and *(M-X) is* the current account balance. It follows as a matter of national accounting, the sovereign government deficit (surplus) equals to non-government surplus (deficit) (Mitchell and Muysken, 2008, Wray, 1998). For example, if the current account deficit equals 6% of GDP, and the budget deficit equals 4% of GDP, the private sector balance must be a deficit of 2% of GDP. In aggregate, there can be no net savings of financial assets of the non-government sector without cumulative government deficit spending. Evidence for this conjecture is

relatively easy to find. For example, the history of Australian Commonwealth budget data clearly shows that after each period of budget surpluses the deficit re-emerges (see Figure 1). The following accounting relation can be used to show the impact of budget surpluses on spending and private wealth:

$$G + iB = \Delta M + T + \Delta B$$
$$[(G + iB) - T] = \Delta M + \Delta B$$

Where G is government spending on net of interest payments on debt, i is the nominal bond rate, B is the stock of outstanding bonds, M is base money balances, and M is tax revenue. In an accounting sense, when there is a budget surplus this must either be reflected in a destruction of base money ($\Delta M < 0$) and/or a destruction of private wealth ($\Delta B < 0$) .A modern money interpretation of this relation, often erroneously called the government budget constraint (*GBC*), considers it to be an *ex post* accounting identity rather than an *ex ante* financial constraint.

3.2 Real wage Repression and Aggregate Productivity growth:

One of the most important structural drivers of the current crisis has been real wage repression, which is a natural outcome of the weakening of trade union power over the last two or three decades (Juniper, 2009, Mitchell, 2009, Palley, 2009, Stockhammer, 2009). This phenomenon has two main dimensions: first, the wage share of national income has fallen among OECD nations with wage increases lagging behind productivity growth. Second, there has been a trend towards higher wage dispersion at both ends of the wage scale. At the top of the scale, a relatively small group of wage-earners have witnessed an enormous increase in their salaries which has been entirely decoupled from movements in the level of average wages. At the bottom of the scale there has been a rapid growth in the number of workers earning very low wages, in part due to the rise in casual or part-time employment. This has contributed to the well-known phenomenon of 'working poor'.

Data on the wage share of national income is available of most OECD nations. The study of Stochammer (2009) reveals that wage shares have been falling across Europe, in Japan and the USA (see Figure 2). This phenomenon is clearly reflected in the decline in Australia's wage share over the same period too (see Figure 3).

3.3 The Impact of the Resulting Mortgage crisis on Macroeconomic Stability:

In most of the advanced nations, on-going polices of fiscal withdrawal and real wage repression over the last two decades has forced the non-government sector (households and private production sector and the rest-of-the-world) into deficit. Accordingly, firms and households become increasingly dependent on the external sources of finance, as governments rely increasingly on private sector leverage to maintain rates of accumulation and increase the leverage ratio to disposable income. Several studies (Zezza, 2008, Crotty, 2009) reveal the extent to which national growth rates have been driven by households spending on consumption and residential investment. In the USA, consumption as a percent of GDP was 63% in 1980, 67% in 1998 and 70% in 2008. Since the real wage growth has been stagnant relative to growth in GDP, this rising household spending on consumption was driven by a combination of ever-rising debt and whatever gains in household wealth that were derived from stock market and housing price inflation (Crotty, 2009).

This process of debt-fuelled consumption has redirected income from low paid workers to high income capitalists and has forced the financial system to develop ever more complex instruments and practices (e.g. home equity loans, exotic mortgages such as zero-downs etc.) Deregulation has encouraged innovation of a certain kind with the result that a wider spectrum of assets can now be securitized. With real estate widely accepted as collateral, the securitization of mortgages has the additional advantage of encouraging further borrowing as property prices rise. However, this process comes to a sudden halt when household hit their borrowing limits or when the house price inflation subsides (Dymski, 2010).

From 1997 to mid-2002 house price inflation in the USA averaged 5.5% per annum, and then grew to 9.6% from mid-2002 to the first quarter of 2005. In 1981 household debt was 48% of GDP, while in 2007 it was 100%. Private sector debt in the USA was 123% of GDP in 1981 and had reached 290% by late 2008. According to RBA analysis, in 1980 the ratio of total private sector (Household & firms) debt to GDP was only 20% in Australia, but rose to be five times higher in 2009 (see Figure 4). For comparison, the mortgage financial obligations ratio of homeowners in the US rose from 9.5% in 2002 to 11% at the beginning of 2005, before reaching almost 12% at the end of 2007, just before the downturn Wray(2009) .

While the private sector was becoming increasingly leveraged across the advanced industrial world, government sector debt was moving in the opposite direction (see Figure 4 for Australian case). Wade (2009) argues that, after 2003, the fiscal deficit fell as a share of gross domestic product (GDP) in the USA: with the drop in public sector borrowing, the private sector deficit grew, and the current account deficit ballooned. While the mainstream economics literature assumes that households are rational, so that debt ratios move with anticipated increases in wealth, it is conceivable that a substantial part of the accumulated debt is due to households irrationally maintaining consumption above sustainable levels. Stockhammer (2009) cites evidence from experimental psychology to suggest that the means of payment can influence consumption decisions (i.e. consumers typically buy more when using credit cards). It remains to be seen how these insights into the consequences of real wage repression and fiscal withdrawal can be accounted for in a modelling context.

4 Elements of a Parsimonious Model

This section provides a brief description of how the components of a parsimonious stock-flow-consistent (SFC) model can be brought together for the purpose of macroeconomic analysis, in such a way that the model can capture key aspects of the GFC. To this end it also discusses the existing literatures on the modelling of financial instability.

Taking off from the seminal modelling work of member of the Cambridge Economic Growth Project (see Godley and Cripps (1983)), Godley and Lavoie (2007) have published a major text on Stock-Flow-Consistent approaches to modelling the macro-economy. For Lavoie (2008), this approach affords the prospect of reconciling what he calls both the Cambridge (that he associated with associates with the Cambridge, UK, strands of post-Keynesian thought) *and* the "Wall Street views" (of the American "Fundamentalist" Post Keynesians such as Paul Davidson and Hyman Minsky). Related works are for example, Dos Santos and Zezza (2008); Zezza (2008); Eatwell et al (2008); Treeck (2008) Chatelain (2010). In particular, Minsky's analysis has inspired a number of quantitative researchers to focus on the dynamic interaction between real and financial sectors (Fazzari et al., 2008, Flaschel et al., 1997, Lima and Meirelles, 2007, Ryoo, 2009, Taylor, 1985, Tymoigne, 2006b).

On the basis of the stylized facts outlined in section 3 above, the model that we intend to construct must possess, at a minimal level, the wherewithal to capture crucial Minskyian aspects of the crisis, including: the deferment of PV breakeven times, the loss of diversification, and increasing reliance on external sources of finance (movement from hedge to speculative to Ponzi positions). The first two of these components are more 'micro' in nature than 'macro', but they have obvious 'macro' effects. As such, they should be incorporated in some way into our chosen modelling framework (e.g. at the very least, by allowing the risk premium on long term borrowing to increase relative to that on short term borrowing, thus accounting, in Minskyian terms, for rising borrowers' and lenders' risk).

The second and third round effects on the financial crisis of adverse movements in effective demand, which arise when various agents response to increasing financial fragility (e.g. through an increase in liquidity preference on the part of portfolio investors, a decline in the marginal efficiency of capital, or an increase in the marginal propensity to save) must also be accounted for, along with any feedbacks from asset price deflation (e.g. at the very least, by explicitly modelling the shifting balance between discretionary and non-discretionary expenditure, or recognising the effects of increased credit rationing).

Due to our initial focus on the effects of real wage repression and fiscal withdrawal and resulting subprime crisis, it is essential to incorporate a government sector (e.g. to account for the adverse consequences of a move from budget deficits back into surplus) and some kind of (Kaleckian-Kaldor) mechanism to explicitly account for secular or structural rather than cyclical shifts in the wage share of income.

This rules out many Post Keynesian models, including those set out in Chiarella and Flaschel (2000), which are derived from dual-Phillips Curve foundations. In these models, shifts in the wage share of income can only be cyclical in nature. The models of Ryoo(2009) and Tymoigne (2006b) are precluded due to the incomplete nature of the sectoral transaction accounts for government.

Following Eatwell et.al (2008), we intend to construct a model that decomposes the firm sector into both household construction and other investment. Mortgages, as distinct from other household and firm borrowing from both the banking and the government sector, will also be introduced as liabilities of the household sector.

Other elements of this same model will be taken over, including the consumption function, the Tobin-style system of asset demand equations, the modelling of investment activity, and various accounting identities (alluded to in section 5). Two additional modifications to be made to the model include: a more detailed government sector (which incorporates central bank operations, as detailed in Section 5); and, the incorporation of credit-rationing into the equation block determining levels of—both construction and non-construction—investment: the reasoning behind a modification of this latter kind will now be discussed.

While the incorporation of equity markets would be desirable to enhance the realism of the resulting model (especially when an extension of this kind can easily be introduced into the Tobin-style block of equations representing portfolio demand for different classes of assets), an adequate treatment of equity markets would need to account for changes in the equity premium over long term borrowing costs along with any inflation differentials between equity prices and the prices of other assets. In the interests of parsimony, herefore, we are going to ignore equity markets. To compensate for this absence, we intend at a later stage to

introduce credit-rationing along the lines of Chatelain (2010). This is an attractive, if parsimonious, way to account for feedback effects that emanate from financial markets to influence levels of investment in the firm sector. Presumably, the macroeconomic effects of debt- and asset-price deflation could also be accounted for implicitly, both by varying the propensities to save out of non-wage income and by imposing more credit-rationing in the investment block of equations.

Recently Shaikh (2009), has stressed the need to reconcile both Keynesian and Harrodian approaches to macroeconomic growth. The focus of his concerns are two central propositions: first, that a rise in investment will raise equilibrium output via the multiplier; and, second, that a fall in savings rate will raise equilibrium output in accordance with the "paradox of thrift" narrative (Shaikh, 2009) P. 456). In adopting a longer run setting, Shaikh observes that investment not only creates demand but also raises capacity. From this perspective he argues that the only self-consistent path for accumulation is one that generates output growth at the Harrodian warranted rate. On the basis of this reasoning he recommends that investment equations be modified accordingly. Those working within this Harrodian tradition also highlight the importance of articulating the relationship between successive short runs and outcomes over the long run (Skott and Ryoo, 2008b, Skott and Ryoo, 2008a, Ryoo, 2009). Of course, if private sector investment occurred at a level sufficient to achieve the warranted rate of growth, there would be no need for Keynesian policies of job creation. This is where Chatelain's (2010) work is especially helpful. Although it builds on Shaikh's Harrodian foundations, it also incorporates credit rationing into the investment block. In this way, it explicitly accounts for departures of investment from the rates that are required to achieve the warranted growth path.

5 The Accounting Structure of the Resulting Model

At this stage in our research we only intend to discuss the stock-flow-consistent (SFC) accounting structure of our proposed macroeconomic model. The chosen approach, grounded in the pioneered work of Godley and Lavoie (2007), enables us to make a clear distinction between both the vertical transactions between government and non-government sectors of the economy and the horizontal transactions between banks, households and firms[3].

Table 1 illustrates the transaction matrix, while Table 2 depicts the balance sheet matrix. The chosen method of accounting for transactions, as shown in Table 1, is comprehensive in the sense that everything comes from somewhere and everything goes somewhere. Without this armature, accounting errors might pass unnoticed with the consequence that unacceptable implications could be ignored. Under the adopted accounting framework, 'there are no black holes' (Godley and Lavoie, 2007). On one hand, all sources of funds that appear with a plus sign in the transaction matrix are incoming flows of money; on the other hand, all uses of funds appear with a minus sign. In Table 2, all assets appear with a plus sign in the balance sheet matrix (stock) while, liabilities including net worth, are assigned a negative sign. To be stock-flow-consistent, each column and each row that deals with financial assets or liabilities must sum to zero.

The model represents a closed economy consisting of five sectors: households, a production firms sector, a banking sector, a government sector and a central bank (however, from a modern money viewpoint, the central bank and government sectors are better thought of as combined together when considering exercises in policy simulation and evaluation). Significantly, the household sector is divided in two subsectors: workers and capitalists.[4]

Worker households only receive wage income and are assumed to rely on banks mortgages to finance their housing investment. Accordingly, their disposable income is given by after-tax wages net of interest payments on mortgages. On the other hand the richest households, named "capitalists", own all the nonfinancial firms and banks and receive distributed profits, net of tax, from firms and banks, along with interest income from deposits and bonds. Capitalist households are the recipients of capital income, some of which is saved. For simplicity, however, workers are assumed to spend all of their income on mortgage repayments and consumption.

Non-financial firms finance their investment through undistributed profits net of taxes and borrowing from banks. These firms are assumed to build the housing units and produce investment and consumption goods. These firms do not issue equity to finance their investment activity[5].

As banks meet the demand for loans from the firm sector, and for mortgages from the household sector, this activity gives rise to savings on the part of households, which are returned in the form of deposits to the banking sector. Here, an important source of capitalist household income (and thus savings) is derived from various rates of interest on loans and deposits)[6] . In a departure from Chatelain (2010), it is assumed that, in this model, the banking sector realizes profits which are used for more lending to the non-financial and households sector[7].

The public sector in our model is composed of the government and a central bank. The government collects taxes on household wage income, along with tax revenue from bank and non-financial firms' profits and production activity. The government sector targets a positive interest rate by issuing (purchasing) bonds to absorb any excess (inject any additional) liquidity that might result from deficit spending (that might be needed to offset the draining effect of budget surpluses). We assume that, consumption expenditure grows at the same rate as expected income, so that the share of government expenditure on output in steady growth is anticipated to be be stable[8].

6 Conclusion

In the context of a Minskyian and Modern Money interpretation of the GFC, this paper has identified what is required of a parsimonious stock-flow-consistent model, for it to adequately account for the underlying drivers of the crisis: namely, real wage repression and fiscal withdrawal. To this end it has examined the role of government in Minsky's analysis of financial instability (section 2), and described the important stylized facts that need to be accommodated within our chosen modelling framework (section 3). The key components of our proposed model are described in section 4 of the paper. Finally, section 5 sets out and explains the transaction and balance sheet matrices that will be used to ensure that the resulting model achieves its objectives.

Despite our goal of parsimony, the model that we intend to construct over the next 12 months will still be fairly complex. Nevertheless, a certain level of complexity is inevitable in trying to simulate the effects of something like the GFC. The results of our modelling exercise will hopefully be presented at subsequent National Conferences on Unemployment.

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