

## Godley Got It Right

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The Queen of England famously asked her economists why ‘no one saw it coming’—referring, of course, to the global financial collapse that began in early 2007. In fact, many economists, market participants, and even policymakers did recognize problems. Since the beginning of the crisis, I have been arguing that Hyman Minsky had been studying the transformation of the economy toward fragility since the late 1950s, so in some sense he had seen ‘it coming’ a half century ago. I have also argued that we should not try to locate the origins of the crisis in the subprime-lending-fueled housing bubble since 2000, rather, the long term trends over the entire postwar period are responsible. In that sense, I claimed that we should see this not as a ‘Minsky moment’ or even a ‘Minsky crisis’ but rather as a Minsky ‘half century’. I will not repeat any of those arguments here (See Wray, 2009).

Instead, I will focus on the specific unsustainable processes of the decade that preceded the collapse. Minsky died in 1996, just at the beginning of that decade of a truly historic and rapid transformation of the financial structure of the US economy. Hence, while the following analysis fits in well with the postwar transformation that Minsky identified as the rise of ‘money manager capitalism’, it was Wynne Godley who closely studied those specific processes that brought about a collapse of the global economy. Unfortunately, Wynne is no longer here to say ‘I told you so’ and it is the goal of this piece to make the case that he certainly deserves the accolades (See Bezemer, 2011). In my view, no one else came close to providing such a trenchant analysis. All of us at Levy benefitted tremendously from his insights and we miss his wisdom.

. 1 My introduction to Godley

We did not hit it off well in the beginning. Wynne was careful, methodical, and proper—almost an exact opposite to Minsky, the other distinguished scholar at the Levy Institute, who was gregarious, confident, and by comparison highly productive. I did not at first appreciate Wynne's methodology—modeling with heroic simplifications to produce numerical simulations. While Hy knew (or at least maintained the appearance that he knew) financial institutions and instruments, Wynne admitted that he understood next to nothing about the financial system. (Even after the global financial collapse was well underway, Wynne would call on me for the most basic details about mortgage securitization.) His models overlooked too much that I thought important. And for a follower of Minsky's 'financial Keynesian' approach (that was more closely related to Institutionalism than to anything else), Godley's methodology looked too orthodox.

So when Godley began a series of papers laying out his model, my focus was on what was left out rather than on what he had accomplished. We had something of a showdown in my office that ended with his explosion, demanding more respect from me, and slamming of my door. It was in retrospect the start of a wonderful relationship. I began to read him more carefully, and he tried to improve the financial aspects of his model. We began to write together—a journal article, a policy note for Levy, and some op-eds for the Financial Times. He was, without question, a brilliant analyst and was by far the best writer I have ever known. He would take a piece I considered to be finished, and then worry over it for an interminable period. There was never an extra word, and every sentence was always phrased just right.

Wynne was meticulous where I was rash; he was methodical where I was intuitive. In the early 2000s as household debt and debt service were growing rapidly, he once came to my office to ask whether there might be a theoretical limit to the portion of income a household or firm

could devote to debt service. I responded immediately and intuitively: no, it could go to 99.99 per cent and above so long as one could find a willing lender. Wynne returned to his office and worked it through his complete stock-flow consistent model and came back several hours later: ‘you are right’. It was a disappointing result because we could not say for sure when the unsustainable debt-spree might end. Another time he came by to discuss an investment opportunity: we should short the mortgage market (shades of John Paulson!). I reminded him of Keynes’ admonition that markets can stay irrational a lot longer than we could stay solvent. Another disappointment-- but a reminder that debt and price ratios, and sectoral balances, cannot tell us when an unsustainable trend will end.

Wynne was influenced by three disturbing experiences. First there was his upbringing and treatment by a psychoanalyst—recounted in Wynne’s own remarkable autobiographic essay (Godley, 2001). Second, he felt as if he had been cast off by the neoliberals who took over policymaking in the UK, after having spent much of his life as a valued public servant. Cambridge University followed suit in—what seemed to him--a reprehensible manner. Those experiences made him highly sensitive to criticism, and led to a search for approval. I recall a particular panel on which he had presented a strategic analysis of US sectoral balances, showing that at projected growth rates the private sector’s borrowing would have to grow faster than GDP. Goldilocks’s growth was unsustainable. A prominent self-described Keynesian textbook writer was the discussant. He dismissed Wynne’s presentation with the comment that things would probably turn out better than suggested. He offered no analysis, not even an attempt at justification for this view. I expected Wynne to tear him apart as it would have been easy enough to do. Instead, Wynne refused to respond. He was furious but too English-gentlemanly to show it. (Years later I had the pleasure to hear Charles Goodhart provide a well-deserved public

rebuke to Wynne's tormentor. Following that individual's presentation on a plenary panel, Goodhart announced for all to hear that he had never witnessed such an embarrassing performance. Touché!) In addition to his sensitivity, Wynne engaged in an eternal search for assistants and co-authors for his books. (Many of these partnerships did not work out, but Wynne did (finally) find a superb partner in Marc Lavoie.) The problem was that Wynne was all-consuming. His own effort was at least 120 per cent and what he really needed was a similar commitment from all those around him--in other words, disciples, not colleagues. I am sure all of this had a lot to do with the life-long insecurities he perceptively analyzed in his autobiography.

Finally, his economic outlook was highly influenced by exchange rate crises in the UK. It was the last of these experiences that led to the only sustained disagreement that we had. Wynne always insisted that the US current account deficit was unsustainable. In his writing over the years, it became clear that this was meant as a contingent statement—if the US private sector will run, on average, a surplus and if the government deficit is constrained, then a large and persistent current account deficit cannot be sustained. In his belief, what would give would be economic growth—the US would be doomed to slow growth to reduce its trade imbalance. However, as the domestic private sector's balance moved to large and growing deficits, Wynne and I came together to argue that was the more important of the unsustainable processes. Still, he was convinced—where I was not—that the US would ultimately have to reduce its trade deficit.

In this chapter, much of the focus will be on the growth of private sector deficits and debt. Wynne's 'three sectoral balances' approach was adopted by all of us at Levy when the federal budget went into surplus in the mid to late 1990s. In the next section I will quickly recount how that changed my own views as I came to embrace Wynne's approach. I will then address Wynne's methodological approach and then will turn to the specific analyses and

projections of crisis.

In what follows, I am pulling material from working papers, Policy Notes, and Strategic Analyses published at the Levy Institute. I am including pieces I authored, some authored by Wynne, and a couple of co-authored pieces (one with Wynne, one with Dimitri Papadimitriou). Except where indicated, I am retaining original wording throughout, with editing and a few added comments to help with the flow. My goal is to demonstrate that ‘Wynne got it right’ and by using the original exposition I can make it clear that this is not an ex post interpretation. To be sure, I am quoting selectively—potentially leaving out analysis that does not hold up to the test of time—but I am presenting the main thrust of the argument as it developed from 1995. I will conclude with a final assessment of Wynne’s analysis that allowed us to ‘see it coming’.

## 1.2 Godley’s three balances approach

In this section, I explain how I came to adopt Godley’s three balances approach as a more useful alternative to the Keynes/Kalecki/Levy approach I was taught. What follows is an excerpt from a piece I wrote for Levy in 2000. It introduces the three balances approach that Wynne imparted to us. It is in some sense an alternative to the usual Keynesian ‘leakages and injections’ approach as well as to the Kalecki (et al) ‘profits equation’. While it took me a while to embrace it, I found it to be a useful way to ensure stock-flow consistency—something I had struggled with from the early 1980s and through to my exposure to both ‘endogenous money’ and the ‘circuit approach’.

In the early 1980s, when I was one of Minsky’s students, he introduced us to the Kalecki equation, which he, and we, later found to be similar to Jerome Levy’s profits equation. In the Kalecki version, aggregate profits = private sector investment + government deficit + export surplus (- export deficit) + consumption out of profits (capitalists’ consumption) - saving out of wages (workers’ saving). In his exposition, Minsky quickly jumped to what

is called the classical case, in which capitalists do not consume and workers do not save, so that aggregate profits would be equal to investment plus the government deficit minus the trade deficit. The early 1980s was interesting because the United States was struggling to break free from the Reagan recession, with almost no private investment and a growing trade deficit. Thus, according to the equation, the only source of profits was the burgeoning federal budget deficit. ... (Wray 2000, p. 1)

In 1984, as the economy was recovering and consumers were becoming sufficiently confident to increase debt, Minsky and I discussed a nonclassical version of the Kalecki equation. Minsky had emphasized the role that government transfers play in fueling consumption, but what if consumers simply borrowed to keep consumption up? In other words, the Kalecki equation subtracts worker saving from aggregate profits, but what if worker saving were negative, that is, what if workers spent more than their income? In that case, even with a trade deficit and sluggish investment, aggregate profits could be positive without a government deficit. We even considered a more extreme version of the Kalecki equation. What would happen if the government budget moved toward surplus? In the US case, with a trade deficit, profits would have to be generated by capitalist spending (both on investment and consumption) as well as by worker deficit spending. Minsky recognized that theoretically this could happen, but he doubted that it was sufficiently likely to warrant further investigation. ... (Wray 2000, pp. 1-2)

Fortunately for our analysis, two things happened over the next 15 years. First, Wynne Godley came up with a much more fruitful way of looking at the whole matter. Godley

simply consolidates all levels of government into a public sector, similarly consolidates households and firms into a domestic private sector, and, for completion, adds a foreign sector. It is clear that if the public sector is spending more than its income (that is, is running a deficit), at least one other sector must be spending less than its income. The United States has been running a trade deficit over the past two decades, and one that has generally been rising. A public sector in deficit tends to generate a private sector surplus- some of which is drained off through a trade deficit. In theory, all of the government sector's stimulus could be drained off that way, but, in practice, the trade deficit has not generally been large enough to do so. With Godley's approach, we do not need to allocate saving between profits and wages; the relevant breakdown is between households and firms, and those data are readily available. (Wray 2000, p. 2)

The second thing that happened is that the real world cooperated by generating unprecedented private sector deficits.... What seemed unlikely to Minsky in 1984 became a reality, albeit in a slightly altered form. ... If one compares the 1980s expansion with that of the 1990s, one can see that large government deficits helped initiate both. In both cases, once the expansion was under way, the private balance dropped from large, recession-period surpluses toward deficits. In the 1980s the private balance fell from a surplus of about 4.5 per cent of GDP to a deficit of about 1.5 per cent of GDP-a swing of 6 percentage points. In the 1990s the private balance fell from a surplus of 4 per cent of GDP to a deficit of 5.5 per cent....a swing of almost 10 percentage points. (Wray 2000, p. 2)

A swing of such magnitude is entirely unprecedented in the postwar period. It was brought about by the combination of a large trade deficit (although the 1980s expansion saw a similar deterioration in the balance of payments) and an unprecedented shift of the government budget toward large surpluses. How can the economy boom in the presence of large and growing government surpluses, and how can we explain the willingness of the private sector to spend in excess of its income to the tune of 5.5 percent of GDP, and rising? ... [In other words, what] processes ... brought the economy to this point, and what...[are] the prospects for continued Goldilocks growth? (Wray 2000, pp. 2-3)

First, ....consumers became able and willing to borrow to a degree not seen since the 1920s. Credit cards became readily and widely available; lenders expanded credit to subprime borrowers; publicity about redlining provided the stick and the Community Reinvestment Act provided the carrot to expand the supply of loans to lower income homeowners; deregulation of financial institutions enhanced competition. All these things made it easier for consumers to borrow. Consumers were also more willing to borrow. As memories of the Great Depression faded, people became less reluctant to commit future income flows to debt service. The last general debt deflation is beyond the experience of almost the whole population and the last recession was almost half a generation ago. With only one recession in nearly a generation, it is not hard for people to convince themselves that downside risks are small. Add to that the stock market's irrational exuberance and the wealth effect, and you can pretty easily explain consumer willingness to borrow. (Wray 2000, p. 3)



I would add one more point, which is that until recently the average American family had not regained its real 1973 income. Even during the Clinton expansion, real wage growth has been low. Americans are not used to living through a quarter of a century without rising living standards. The first reaction to the slow growth was to increase the number of earners per family, but that has resulted in only a small increase in real income. Thus, it is not surprising that consumers ran out and borrowed as soon as they became reasonably confident that the expansion would last. (Wray 2000, p. 3)

The private sector balance is expected to continue to deteriorate. Looking to the public sector, the consolidated government balance is over 2 per cent of GDP. The federal budget surplus was 1.4 per cent of GDP in 1999, but, according to CBO projections, that will increase to 2.8 per cent by 2010. By then, government spending will equal only 16.9 per cent of GDP and tax revenue will still equal nearly 20 per cent. The federal debt held by the public will decline from 40 per cent of GDP to a little over 6 per cent by 2010. It is important to note that this growth of the surplus is projected to occur as economic growth slows down—from about a 4 per cent growth rate today to an average of 2.7 per cent. In other words, fiscal policy is supposed to tighten substantially over the next 10 years, so that it will be heavily biased toward running government surpluses even when the economy grows far below its long-run average, which is closer to 3.5 per cent. So the public sector has gone from a budget that was biased toward huge deficits at moderate rates of growth during the peak of the 1980s expansion to one that is biased toward huge surpluses at even lower growth rates. (Wray 2000, pp. 3-4)

We now return to the implications of this tight fiscal stance. We consistently argued it could not be sustained—growth would falter and the deficit would return.

### 3 Godley's approach to methodology

In what follows I deal explicitly with Wynne's development of his three balances approach. In addition, it will be shown that at the same time he was presenting a critique of the inconsistencies present in mainstream macroeconomics. In retrospect, I would count his contribution in this area as among the most important critiques of orthodoxy that I have encountered. What is particularly important is that his criticism did not rely on particular financial institutions or practices—it really was fundamental, and devastating. By carefully accounting for flows and stocks, he showed that the orthodox treatment of money was flawed. A couple of generations of work by orthodox economists on 'money demand' was in a single stroke destroyed. At the same time, he rigorously showed that the Post Keynesian 'endogenous money' was on the right track—but had failed to convincingly demonstrate its fundamental conclusion that money supply is not independent of money demand.

#### .3.1 Methodological approach, part 1: The treatment of money

Modern textbooks on macroeconomics treat money in a remarkably uniform - and remarkably silly - way. In the primary exposition the stock of 'money' is treated as exogenous in the two senses a) that it is determined outside the model and b) that it has no accounting relationship with any other variable. The reader is then invited to assume, *pro tem*, that the central bank controls 'the money supply' so that it is constant through time. When the operations of banks are described, typically some thirty chapters later, the quantity of money is some multiple of commercial banks' reserves as a consequence of these institutions having become 'loaned up'. (Godley 1996, p. 1)

Silly? The money stock, as revealed in real life financial statistics, is as volatile as Tinkerbell - for good reasons, as I shall argue below. How can it be sensible to undertake a thought experiment in which the flickering quantity called 'money' is literally constant through periods at least long enough for capital equipment to be planned, built and commissioned - and for lots of other things to happen as well? And the other, 'money multiplier', story has the strange defect that, while giving some account of how credit money might be created, it completely ignores the impact on spending of the counterpart changes in bank loans which are assumed to be taking place... (Godley 1996, p.1)

There is a reason for all this. It is that mainstream macroeconomics postulates in its basic model that macroeconomic outcomes are all determined by relative prices established in Walrasian markets. Individual agents are held to engage in a market process of which the outcome is to find prices for product, labor and money which clear all three markets plus, by Walras's law, the market for 'bonds'. But as is now well known, there is no use for money in the Walrasian world even though, paradoxically, 'money' is a logical necessity if the model is to be solved.... (Godley 1996, p. 2)

A radically different macroeconomic tradition does exist although this is largely, for the time being, ignored. The names which come first to (my) mind are Wicksell, D.H. Robertson, Keynes (when not writing the General Theory), Kaldor, Graziani and Hicks, particularly Hicks (1989) as well as a large number of authors in the post-Keynesian tradition (for example, Chick, Davidson, Sheila Dow, Wray, Minsky and Moore). Threads linking these authors, and distinguishing them sharply from today's mainstream,

is first their perception that investment, production and distribution are processes which take up historical time – a period which must elapse before sales can take place, hence generating a systemic need for finance. (Godley 1996, p.2)

A second thread is the perception that all decisions have to be taken in a state of uncertainty, without agents knowing what their sales or incomes are going to be. In what follows I am going to present a greatly simplified, but within its limitations realistic, model of how a modern monetary economy may work. Looked at one way, it contains nothing new. Keynes, Kaldor and Hicks all had very well worked out notions as to how economies - extremely complicated interdependent systems changing through historical time - function. (Godley 1996, pp. 2-3)

The trouble is that none of these authors chose to formalize their systems, so it is extremely difficult to teach them reliably or rigorously, and there remains a penumbra of ambiguity around too much of what they wrote; for instance, there is still much room for argument about ‘what Keynes really meant’. (Godley 1996, p.3)

I shall instead adopt the methodology pioneered by James Tobin wherein a whole model is set out formally and then subjected to numerical simulation; it is perhaps the only way in which the properties of a very complicated dynamic system can be ascertained with precision. The model is large by the standards of theoretical models, having about eighty equations. But even so, a great many simplifying assumptions have been made to prevent the scale of this (preliminary) operation from getting completely out of hand. I am all too

aware that for some people *the model* will have simplified away some of the features of a monetary economy which they regard as crucially important. .... (Godley 1996, p. 3)

The two most important things which a model of this kind does are first, simply to show with precision how all the concepts - a comprehensive system of stocks and flows at constant and current prices - fit together. Then, with numerical solutions easy to obtain, we can gain insights into how the system as a whole functions, by first obtaining a base solution and then changing one exogenous variable at a time to see what difference is made. It might seem as though any particular model "run" depends so much on the particular numbers used that the results are completely arbitrary and have no general application at all. However, it is my experience that repeated simulation, combined with iterative modification of the model itself, does progressively lead to improved understanding, for instance of what the stability of the system turns on, what combinations of parameters are plausible and how the whole thing responds when subjected to shocks. (Godley 1996, pp. 22-23)

This piece really drove home for me the usefulness of Wynne's method—a simplified stock-flow consistent model would demonstrate coherently the point we had been trying to make about endogenous money.

### 3.2 Methodological approach, part 2: Refinement of the model

In this piece, Godley digs deeper. He advances a stock-flow analysis in which money is endogenous. In my view this is especially important because Tobin's portfolio balance approach had already made some move in the direction of endogenous money with impacts on portfolios. Here Wynne carefully lays out the conditions for stock-flow consistency. This could then form

the basis for his analysis of sectoral balances—a huge step beyond Tobin’s economics. I must say that in conversations with Wynne, I always insisted that what he was doing was heads and shoulders above anything Tobin had accomplished. I believe Godley’s analysis will withstand the test of time.

Some endogenous money writers, for instance Graziani (1989), have outlined an extension of the theory of credit and money to cover national income determination and distribution. However none of them has yet set out a comprehensive, fully articulated, theoretical model which could provide the blueprint for an empirical representation of a whole economic system. There exists no macroeconomic textbook based on Kaldorian or EM ideas. This paper takes a step in the right direction by incorporating EM ideas into a complete, if very much simplified, model of a whole economy. Writings on monetary theory commonly rely solely on a narrative method which puts a strain on the reader’s imagination and makes disagreements difficult to resolve. The narratives in this paper will all describe simulations which are grounded in a rigorous model which will make it possible to pin down exactly why the results come out as they do. ... (Godley 1998, pp. 2-3)

[T]he model has four sectors, firms, households, the government and banks. Each row and column of the flow matrix sums to zero on the principle that every flow comes from somewhere and goes somewhere. The financial balance of any sector - the gap between its income and expenditure- is always equal to the total of its transactions in financial assets. Changes in the value of financial asset stocks... include nominal capital gains and losses on bonds as well as flow transactions. The change in the value of inventories

includes both the value of their physical change and also stock appreciation. The stock of household wealth is given alternatively by the sum of all the financial assets or by the sum of government debt and inventories.... (Godley 1998, pp. 5-6)

We now have so many accounting identities and behavioral assumptions that all the banks' remaining transactions must be passive responses to the transactions of other sectors. Given the other assumptions of the model, banks passively exchange any form of money (cash, demand and time deposits) for any other form. It is also implied that banks passively provide loans to firms on the security of inventories, which results in an addition to the money holdings of wage earners as wages become due and are paid. Banks automatically extinguish loans when cash or checks are deposited by firms as sales are realized except to the extent that new loans, in an ongoing situation, will be needed to keep up the flow of production. (Godley 1998, p. 9)

The 'supply' of money is a redundant concept - there is no such thing. Even the term 'demand' for money strains language; for it badly describes a situation where people aim to keep their holdings of money within some normal range but where the sums they end up with are determined in large part by impulse purchases, windfalls and other unexpected events. It is unfortunate that the stock of money, measured *ex post*, should have become generally known as 'the money supply' - a term which invites the supposition that a supply exists independently from what people wish to hold. (Godley 1998, pp. 9-10)

In short, Godley had rigorously shown that ‘money demand’ is accommodated by ‘money supply’—there is no justification for treating the ‘functions’ as independent. This was an unexpected but important result that came out of stock-flow modeling.

#### 4 Godley’s analysis of the Goldilocks economy

In the following series of excerpts, we see Godley developing his analysis of what came to be called the Goldilocks economy—supposedly a sustainable economic structure that fell fortuitously between the extremes of too hot and too cold. These pieces begin in 1995 and run through to the collapse of Goldilocks. In my view, Wynne got it exactly right: Goldilocks was doomed to fail. What he (and we) did not realize was that she would rise from the ashes, fueled by an even greater speculative and unsustainable boom. In many important respects the period from 1996 through to 2001 served as a precursor to the later boom and more spectacular crash in 2007.

##### 4.1 Goldilocks part 1: The three balances

Godley had to spend years sifting through official data to construct the three balances behind the macro identity. He emphasized that one can infer causation because underlying a sector’s balance are a number of behavioral equations. His stock-flow consistent modeling ensured coherency—in other words, it made sure that behavior conformed to macro constraints.

[T]he difference between the PSD (public sector deficit) and the current account deficit is related, by accounting identity, to the aggregate spending behavior of the private sector relative to its income. Total national income is identically equal to total private expenditure plus government expenditure plus any surplus of exports and income received from abroad less imports. Subtracting transfers (mainly taxes and interest payments) from both sides of the equation, we have that private disposable income (GNP



less taxes and transfers) less total private expenditure (consumption plus investment) is always exactly equal to the PSD (government expenditure less transfers) less the balance of payments deficit. The gap between total disposable income and expenditure also measures the net acquisition of financial assets by the private sector (NAFA). As the NAFA is identically equal to the PSD less the balance of payments deficit, the two deficits would be identical twins if, and only if, the NAFA were always zero; they would look quite like twins if NAFA were nearly constant as a proportion of GDP. (Godley 1995, pp. 11-12)

This is more than an identity, as one can say something about causation: Private expenditure, as one might expect, falls relative to income during the peak to trough periods and rises again during the trough to peak periods, partly because of the pattern of the investment cycle.

#### 4.2 Goldilocks part 2: Outlook for Goldilocks as of the end of 1999

In this piece, Godley laid out seven points about the US economy at the end of the millennium. The end of Goldilocks was near, and policy choices were limited. What would be required was a very large fiscal relaxation—too large to be politically feasible. Hence, aggregate demand would be reduced. Godley was particularly worried about the external imbalance—a topic I will return to in the conclusion.

1. The United States has a balance of payments deficit worth nearly 4 per cent of GDP and negative net foreign assets (or foreign debt) worth nearly 20 per cent of GDP. If US growth is sustained in the medium term, it is quite likely that the balance of trade in goods and services will not improve. The United States is the only major country, or country 'bloc,' to have a substantial trade deficit and this is proving of great advantage to

the rest of the world.

2. If the balance of trade does not improve, there is a danger that over a period of time the United States will find itself in a 'debt trap,' with an accelerating deterioration both in its net foreign asset position and in its overall current balance of payments (as net income paid abroad starts to explode). Such a trap would call imperatively for corrective action if it is not at some stage to unravel chaotically.

3. The emergence of a debt trap is put forward as a possibility that must be taken seriously rather than as a forecast of what is most likely to happen. Policymakers are advised to ensure that adequate instruments are available should things start getting out of hand.

4. Whether the outflow of property income starts to accelerate depends critically on the rate of return earned on internationally owned assets and liabilities. The well-known condition for exploding payments on debt is that the rate of interest exceeds the growth rate. At present the United States' negative position is worth about \$1,500 billion while the net foreign income outflow is only about \$10 billion, so it might be supposed that there is nothing to worry about. But this is deceptive. The low rate of return overall, measured ex post, is the consequence of the extremely low return so far earned on foreign direct investments in the United States. However, the bulk of any change in the net asset position, in the future as in the past, is likely to take the form of financial investment, which has been earning a much higher rate of return and one that already slightly exceeds the growth rate. Also, the return on foreign direct investment in the United States may improve.

5. There have recently been extremely heavy direct investments by foreign firms in the

United States, but a high proportion of these have been financed by exchange of shares and, to that extent, make no contribution at all to the financing of the deficit. The analysis of capital account flows and rates of return would be greatly facilitated if acquisitions financed by share exchange were identified separately in the accounts.

6. Policy responses in principle come down to:

- a. Reducing domestic demand
- b. Raising foreign demand
- c. Reducing imports and increasing exports relative to GDP, preferably by changing relative prices

7. The danger is that resort (perhaps by default) will be had to remedy (a), in other words, that chronic and growing imbalances between the United States and the rest of the world come to impart a deflationary bias to the entire system, with harmful implications for activity and unemployment. Remedy (b) reads hollow when neither appropriate institutions nor agreed upon principles exist, but should not be dismissed out of hand. As for remedy (c), currency depreciation is the classic remedy. But, in view of the way global capital markets work, depreciation has ceased to be a policy instrument in any ordinary sense, and 'floating' cannot be counted on to do the trick. Policymakers should be aware of the possibility of using nonselective (nondiscriminatory) control of imports in extremis in accordance with the principles set out in Article 12 of the WTO. Such a policy is to be sharply distinguished from 'protectionism' as commonly understood.

(Godley 2000, p. 1)

4.3 Goldilocks part 3: Medium term prospects for the US economy, viewed from the end of

This excerpt summarizes Godley's conclusion on US growth prospects. Given the likely government and external balances, the economy would grow only if the private sector engaged in continued deficit spending. This, in turn, would require an 'extremely large' increase in growth of private sector debt. As we now know in retrospect, growth of debt did resume after the recession—through to 2007 when the economy collapsed.

The central contention is that, given unchanged fiscal policy and accepting the consensus forecast for growth in the rest of the world, continued expansion of the US economy requires that private expenditure continues to rise relative to income. Yet while anything can happen over the next year or so, it seems impossible that this source of growth can be forthcoming on a strategic time horizon. The growth in net lending to the private sector and the growth in the growth rate of the real money supply cannot continue for an extended period. Moreover, if, per impossible, the growth in net lending and the growth in money supply growth were to continue for another eight years, the implied indebtedness of the private sector would then be so extremely large that a sensational day of reckoning could then be at hand. In sum, if a truly strategic view is taken, covering the next 10 to 15 years, one is forced to the conclusion that the present stance of policy is fundamentally out of kilter and will eventually have to be changed radically. (Godley 2000, p. 5)

#### .4.4 Goldilocks part 4: Goldilocks meets the three bears

What follows is not Godley, but rather it is my analysis based on his approach. It was one of the first pieces projecting the end of Goldilocks, written at the end of summer 1998. As can be seen it drew heavily on Godley.

Since the early 1990s the United States has enjoyed reasonably robust economic growth

and low unemployment with low and stable inflation. The economy has been neither too hot to induce inflation nor too cold to allow unemployment to rise....And, as late as July 1998—well after the growls of the three bears had been clearly heard—Chairman Greenspan was still warning of the dangers of inflation... The US stock market stumble in the summer of 1998 was said to be just a momentary correction... (Wray 1998, p. 1)

As the market fell, financial advisers appeared on all the talk shows trying to calm small-time investors and assure them that no matter how far the market might fall, it is always best to stay in because stocks beat bonds over the long run. At the same time, the advisers got out. (Wray 1998, p. 3)

Eventually, everyone will recognize that it is better to earn 4 per cent on government bonds over the short run than to lose 50 per cent on stocks-no matter what the long run might bring. Besides, the Fed has only a few more hundred basis points of room to move. As David A. Levy recently said, 'Never since World War II has it been more appropriate for investors to emphasize preservation of capital over other objectives.'... (Wray 1998, p. 3)

As Wynne Godley has been arguing for some time, the Clinton-era expansion is unusual because of the extent to which expansion has been financed by private borrowing and the size of the private sector deficit—which is now larger as a percentage of GDP than at any time during the last 35 years. Godley argues that given the fiscal surplus and the trade deficit, the US economy can continue to expand only as long as the private sector deficit

increases; as soon as private expenditure stops rising relative to income, the boom will end. Since consumer debt is already at record levels, consumer saving has fallen to depression levels, and market ‘corrections’ are wiping out financial wealth, it is highly unlikely that firms can look to consumer demand to be a source of the spending that would be required to turn around the financial situation of firms. (Wray 1998, p. 4)

Many commentators have presumed that the movement toward a fiscal surplus fueled the boom, but as Papadimitriou and I have argued, this is a presumption that reverses cause and effect. Economic booms generally do reduce fiscal deficits (through the automatic stabilizers), but the reduction then acts as a fiscal drag on the economy. It is not surprising that the official announcement of the surplus achieved in the last fiscal year comes precisely as commentators finally are recognizing signs that the economy is slowing. (Wray 1998, p. 4)

#### 4.5 Goldilocks part 5: Clinton’s budget surpluses as far as the eye can see

This piece, also by me, again leans heavily on Wynne’s analysis in order to critique Clinton’s policy and projections, carrying on from the analysis above. I argue that the budget surpluses will be short-lived, and will play an important role in the demise of Goldilocks. Hence, rather than celebrating the achievement of a budget surplus, Clinton should have moved to relax policy. The argument included analysis of the plan to devote surpluses to rescuing Social Security—what became one of Candidate Gore’s main policy proposals. I argue that this completely misunderstands the nature of a budget surplus. Anyone who understood Godley’s sectoral balance approach would have rejected the Clinton-Gore plan as nonsense, yet, many economists signed-on to it. No wonder few prominent economists ‘saw it coming’—they did not see

Goldilocks's demise coming, either! Importantly, several of those economists who endorsed the plan were rewarded with positions in the Obama administration. While this excerpt is long, it provides an explanation of the details behind the government balance—in other words, it explains what impact the resulting budget has on the private sector's income and wealth. I should note that Wynne came to explicitly adopt my 'government-centered' view of money, concisely stated as 'taxes drive money'. He proposed to write a textbook in which money entered the first chapter as the means of paying tax liabilities.

According to President Clinton's State of the Union address, we are on a course to run federal government budget surpluses for the next 15 to 25 years. ... The publicly held debt would be cut by more than two-thirds, dropping the debt-to-GDP ratio from 44 percent today to just over 7 per cent by 2014—heralded as 'its lowest level since 1917'—and completely eliminating publicly held debt by 2018. (Wray 1999, p. 1)

The plan was well received. A number of prominent economists, including six Nobel winners at last count, have been circulating an open letter dubbing the president's plan 'good economics' and stating that 'Although no one can predict how large the budget surpluses will turn out to be, we can be sure that saving them by reducing outstanding government debt is an excellent way to ease the burden on future workers of supporting an aging population.' In 'Saving the Surplus Will Protect Retirees' (Wall Street Journal, February 18, 1999), Lawrence Summers, deputy secretary of the Treasury, and Janet Yellen, chair of the President's Council of Economic Advisers, assured us that the president's proposal to 'lock away' most of the projected budget surpluses in the Social Security Trust Fund is based on 'sound accounting' and that it will extend Social

Security's solvency through 2055. David Broder's Washington Post article (February 7) proclaimed the plan to be 'the greatest gift to our children' because it will 'help grow the economy' by 'raising national savings.' ... (Wray 1999, p. 1)

Unfortunately, the accounting is not sound, and a policy that would preserve surpluses in an attempt to retire Treasury debt held by the public is anything but a gift to our children. The federal government has been in debt every year but one since 1776. Far from viewing government debt as a horror to be avoided, at least some of the founding fathers recognized the benefits. Thomas Paine proclaimed that 'No nation ought to be without a debt' for 'a national debt is a national bond.' Alexander Hamilton asserted that 'A national debt, if it is not excessive, will be to us a national blessing.' Andrew Jackson, however, labeled the public debt a 'national curse' and, like President Clinton, set out to retire it. By January 1835, for the first and only time in US history, the public debt was retired, and a budget surplus was maintained for the next two years in order to accumulate what Treasury Secretary Levi Woodbury called 'a fund to meet future deficits.' (Wray 1999, p. 1)

In 1837 the economy collapsed into a deep depression that drove the budget into deficit, and the federal government has been in debt ever since. Since 1776 there have been six periods of substantial budget surpluses and significant reduction of the debt. From 1817 to 1821 the national debt fell by 29 per cent; from 1823 to 1836 it was eliminated (Jackson's efforts); from 1852 to 1857 it fell by 59 per cent, from 1867 to 1873 by 27 per cent, from 1880 to 1893 by more than 50 per cent, and from 1920 to 1930 by about a



third. The United States has also experienced six periods of depression. The depressions began in 1819, 1837, 1857, 1873, 1893, and 1929. (Wray 1999, p. 1)

Every significant reduction of the outstanding debt has been followed by a depression, and every depression has been preceded by significant debt reduction. Further, every budget surplus has been followed, sooner or later, by renewed deficits. However, correlation—even where perfect—never proves causation. Is there any reason to suspect that government surpluses are harmful? At the macroeconomic level, government expenditures generate private sector income; taxes reduce disposable income. When government spending exceeds tax revenue (a budget deficit), there is a net addition to private sector disposable income. This addition may well have secondary and tertiary and even further effects (for example, households may spend on goods produced domestically or abroad, thereby raising consumption or imports as measured in national GDP accounts). When the Treasury sells bonds, some of that extra disposable income is devoted to saving, accumulated as private sector wealth held in the form of government debt. Even if the Treasury did not sell the bonds, however, the private sector would be wealthier by an amount equal to the government's deficit, but this would be held in the form of non-interest-earning cash (and bank reserves) for the simple reason that the total value of checks issued by the Treasury to finance expenditures would exceed the total value of checks written by the private sector to pay taxes. ... (Wray 1999, pp. 1-2)

Movements of the budget position are largely automatic. Rapid economic growth, such as that experienced in the United States since 1992 or in Japan previous to 1990, tends to

cause tax revenues to rise faster than government spending, resulting in surpluses.

Recessions and depressions tend to cause tax revenues to fall as spending rises, resulting in deficits. Many economists focus on the secondary or tertiary effects of government deficits and surpluses. While they might agree that deficits increase disposable income and private sector wealth, they argue that deficits also increase interest rates and thus depress investment or that households reduce consumption on the expectation that tax rates will be increased in the future. They argue that while surpluses might reduce disposable income and private sector wealth, they also lower interest rates and thus spur private capital formation. (Wray 1999, p. 2)

While I believe these arguments are based on faulty reasoning, it is possible that under some conditions the secondary effects might outweigh the primary effects so that, at least for a while, deficits might depress the private sector and surpluses might stimulate it. However, history suggests that over the longer run, deficits stimulate the economy and surpluses are harmful. ... (Wray 1999, p. 2)

Those who believe that a surplus can be 'saved' for the future or 'used' to finance tax cuts or spending increases do not understand the nature of a surplus. There is no 'surplus' there for the purpose of 'saving' or 'use.' A surplus is measured as a flow, with tax receipts over the year greater than government spending. The stock or balance sheet implication is that outstanding government debt (whether that be in the form of cash, bank reserves, or interest-earning debt) is reduced. (Wray 1999, p. 4)

If the government were to retire all the outstanding debt and then continue to run surpluses, these could be accumulated only in the form of claims on the private sector (that is, private sector indebtedness). During any period the government can always choose to spend more (or less), in which case the surplus over the period may be lower (or higher); similarly, it can increase (or decrease) taxes, in which case the surplus may rise (or fall)... It is difficult to take seriously any analysis that begins with the projection that our government will run surpluses for the next 15 or 25 years. Part of our skepticism comes from the inherent difficulty in making projections. Summers and Yellen note, 'Today, the US debt held by the public is \$1.2 trillion less than was projected in early 1993.' A projection made just six years ago missed the mark by more than a trillion dollars. A few trillion here and a few trillion there can really add up to big errors over a couple of decades. (Wray 1999, p. 4)

Even more important, our economy cannot continue to grow robustly as the government sucks disposable income and wealth from the private sector by running surpluses. When the economy slows, the surpluses will disappear automatically—and because the private sector will eventually demand that the government stop draining income from the economy. Tax cuts will be rushed through Congress and the president will put forward spending initiatives. (Wray 1999, p. 4)

#### 4.6 Goldilocks part 6: Can Goldilocks be sustained?

In this excerpt, co-authored with Wynne, we argued that Goldilocks growth was unsustainable. It is closely based on Wynne's approach and it was one of the first publications to 'get it right'. To be sure, as explained above, the Goldilocks crash did not lead to restoration of sustainable

processes. As we now know, the following recession was temporary—quickly ended by the ‘jobless recovery’. Yet, the unsustainable processes that generated growth after the Bush recession would lead to the current financial crisis. For that reason, I would not conclude from the following excerpt that we got it wrong; indeed, I would argue that the crisis that began in 2007 resulted from a continuation of the unsustainable processes already apparent in the late 1990s.

Note that the budget surpluses soon ended, the economy went into recession, and a budget deficit was restored. Not only that, the new President Bush did rush through the tax reductions I predicted above. During his campaign tax cuts had been sold as good old supply-side economics. However, he quickly converted to Keynesianism and argued for tax cuts for their stimulative value. Given his anti-government ideology, he did not explicitly endorse Keynesian-style spending programs, but his ‘predator state’ (as Jamie Galbraith later called it) did funnel plenty of spending to favored sectors of the economy, such as the military. In any event, Clinton’s projected surpluses and retirement of the outstanding debt never came to pass, although the Democrats came to misinterpret the whole budget surplus episode. Clinton’s economists, including Yellin, Summers, and Rubin linked the relatively robust growth of the Clinton years to the budget surplus, reversing causation to claim that surpluses somehow generate good growth. This would later come back to haunt them as President Obama’s hands were tied by these same economists—who had become his advisors. Hence stimulus packages after 2008 were always too small to do much good, in large part due to deficit fears.

Recent economic statistics confirm that our Goldilocks economy continues to grow at a relatively swift pace, in spite of financial turmoil in Asia, Latin America, and Russia and economic recession in a third of the world. The longevity of the expansion is record-

setting; it is already the longest peacetime expansion in US history and is about to break the record set by the 1960s Vietnam-era expansion. The expansion's longevity and its strength have tightened labor markets, allowing unemployment rates to remain below 4.5 per cent for the past year and raising real wages at a good clip for the first time in a generation. (Godley and Wray 1999, p. 1)

Perhaps the most potent symbol of the strength of the expansion has been the remarkable turnabout of the federal government's budget, from a chronically large deficit to a substantial surplus. One has to go all the way back to the demilitarization of the economy after World War II to find a comparable shift in the fiscal stance. By most accounts, the surplus will continue indefinitely. The Congressional Budget Office (CBO) is projecting a rise in the federal budget surplus through the next 10 years from 1.2 per cent of GDP for 1999 to 2.8 per cent for 2009. (Godley and Wray 1999, p. 1)

Such projections are, of course, contingent on continued economic growth and unchanged budget policies. What we wish to do here is to take the CBO's projections (which are not substantially different from those used by the administration) at face value and determine what they mean for the private sector. ... Government budget surpluses imply that the private sector must have an offsetting deficit. The financial situation of the domestic private sector is made worse because of the United States' international payments imbalance. ... (Godley and Wray 1999, p. 1)

One might then ask, if the fiscal and trade stances are so restrictive, how can Goldilocks

appear so robust? The answer is suggested by our accounting identity: the private sector is running a record deficit. Since the end of 1991 private expenditure has persistently risen more than income; indeed, the private sector deficit of the past three years is entirely unlike any that has occurred before. Today, the private sector deficit is 4.5 per cent of GDP, with the consolidated government surplus equal to 2 per cent of GDP and the balance of payments deficit equal to 2.5 per cent of GDP. (The sum of the government and trade balances, of course, equals the private sector deficit.) Before 1992 a private sector deficit was rare, never persisted for more than 18 months, and never exceeded much more than 1 per cent of GDP. (Godley and Wray 1999, p. 3)

We are thus in uncharted territory, with a private sector deficit that is (relative to GDP) nearly five times greater than ever before and has already persisted twice as long as any deficit in the past. If we take the CBO forecasts of a GDP growth rate of 2.0 to 2.4 per cent per year indefinitely and an increasing government budget surplus over the next decade and then make reasonable assumptions about the continued deterioration of the US trade account, this implies that the private sector deficit must continue to worsen. In order to validate the CBO's projections, the private sector deficit would have to rise, by our reckoning, to about 8 percent of GDP. Continued economic expansion in the presence of unprecedented fiscal restriction is possible only if the private sector increases spending faster than its income grows. The balance sheet implication is that private sector borrowing must also grow to the point that the ratio of private debt to disposable income increases to 2.5 from the current ratio of 1.6, which is already a record. We dismiss this projection based on CBO forecasts as implausible in view of the absurd increase in the

private deficit and indebtedness that the forecasts require. (Godley and Wray 1999, p. 3)

## 5 Can 'it' happen again?

What follows is an analysis that Dimitri Papadimitriou and I prepared taking Wynne's analysis and applying it to the prospects for another debt deflation; in addition we were concerned with policy that could deal with what we expected to be a deep crisis. Yes, it did turn out that we were in some sense overly pessimistic—we did not foresee the spectacular serial bubbles in housing, commodities, and equities that would fuel growth. But the other side of that coin was the tremendous build-up of debt that would finally crash the economy. Hence, we really did not face the deflationary forces we discuss in this excerpt until the global meltdown after 2007.

Could 'it' (debt deflation) happen again? Yes, Minsky thought, it might. Let us quickly review developments that might have made that worst-case scenario more possible. First, the federal government has been 'downsized'—partly because of devolution of more responsibilities to state governments, partly because of reduced military spending, and partly because of the attempts to balance the budget. By the end of the 1990s, federal government spending had declined to just over 17 per cent of GDP, a fall of some 3 percentage points below what was common in the postwar period. And, importantly, tax revenues had not fallen much: they were still running about 20 per cent of GDP, in spite of the much-vaunted tax cutting efforts of President Reagan a decade earlier. This meant that a demand gap of nearly 3 percentage points had opened up. To be sure, slower economic growth since then has eliminated the budget surplus and generated a large deficit. (Papadimitriou and Wray 2003, p. 16)

However, the government budget has been structured to run surpluses at adequate rates of

growth, so as to act as a drain on demand (called 'fiscal drag' in the early 1960s), and this tight fiscal stance exerts a chronic drain on disposable incomes and profits, making debt that was emitted in each expansion harder to service. These deflationary conditions have been aggravated by another development over the past two decades: the chronic and growing trade deficit. This deficit now runs some 5 per cent of GDP. When we add together the full-employment budget surplus and the trade deficit, we have a 'leakage' of aggregate demand that reaches to 6 or 7 per cent of GDP when the economy grows robustly. This leakage must be made up by a private sector 'injection,' that is, through spending in excess of income by households and firms taken as a whole. (Papadimitriou and Wray 2003, p. 16)

It is thus no coincidence that the Clinton boom was characterized by a private (business and personal) sector deficit that reached above 6 per cent of GDP. Meanwhile, exposure to fierce foreign competition has made it more difficult for businesses to maintain prices of final output, and, hence, to service their debt. ... (Papadimitriou and Wray 2003, p. 16)

While the pace of personal borrowing has subsided a bit in recent months, it is no secret that consumers have carried the economy since 2000, largely by borrowing against home equity. As late as the first half of 2003, household debt was still growing at 10 per cent per year: household debt now stands at 83.5 per cent of national income, up from 76 per cent in 2000. The Federal Reserve has recently reported that as of August 2003, the overall level of consumer credit outstanding (revolving and nonrevolving credit, excluding mortgages) stood at an all-time high of \$1.96 trillion. (Papadimitriou and Wray



2003, p. 17)

In discussing deflation, the aftermath of the bursting of Wall Street's bubble is also noteworthy. Many households lost financial wealth as equity values plummeted, creating some financial distress and leading to some moderation of consumption. What is only now being realized, however, is the long-term damage that has been done to the private pension system. About 44 million private sector workers and retirees are covered by 'defined benefit' plans, which pay a preset amount at retirement and typically hold portfolios biased toward equities holdings. The three-year bear market has already forced some of these defined benefit plans into default, and estimates place the remaining plans some \$400 billion short. Unless Congress approves relief, companies will have to contribute \$125 billion next year; because there is a long lag built into the system—even if the autumn equity price rally continues—firms will have to continue to make such contributions for several years to come.... (Papadimitriou and Wray 2003, p. 17)

The final point we would make here concerns the financial position of state budgets. ... Unlike the federal government, state and local governments can be (and occasionally are) forced to default on their debts. Even if they do not, budget cutting, layoffs, and tax increases will begin to take a greater toll on the economy this year for the simple reason that states already made the least painful adjustments during the past three years. The financial straits of states have already been proclaimed as the worst since the Great Depression. But if our prognosis is correct, things are likely to get very much worse before they get better. (Papadimitriou and Wray 2003, p. 18-19)

We believe that the probability of significant deflation of output prices, even as imperfectly measured by conventional indices, is not great. Nor do we believe that falling output prices alone would be sufficient to wreak havoc on the economy. (Papadimitriou and Wray 2003, p. 19)

Rather, the real danger comes from the possibility of a deflation of asset prices. Stock prices are still down significantly from their 2000 prerecession peak... (Papadimitriou and Wray 2003, pp. 19-20)

Real estate prices also appear to be excessive compared to long-term trends. Given the rising leverage ratios that are increasingly accepted by financial markets, the margins of safety have been reduced considerably over the past two decades. Therefore, fairly small negative movements of the value of real estate (and other) assets can reduce their value below the debt issued in their purchase. (Indeed, the effects of a real estate market crash would be more widespread across American households than were the effects of the stock market tumble after 2000.) In a worst-case scenario, this would lead to 'fire sales' of assets, pushing their prices down farther and setting off a classic Minsky-Fisher debt-deflation spiral. (Papadimitriou and Wray 2003, p. 20)

## 6 Conclusion

It can be seen from this analysis that Wynne's coherent stock flow provided the basis for a prescient analysis of US unsustainable processes. Many of us followed in his footsteps, using the three balances approach to analyze Goldilocks growth and her demise. Further, after the 2000s recovery we continued to warn that growth was based on continued unsustainable processes.

Serial bubbles encouraged private sector borrowing that kept the economy on that fragile path toward accumulation of debt that was far too large to service. A crash was inevitable, although the exact timing was impossible to project. That was an important lesson we all learned, which reminded us (again) of Keynes's caution that things can stay irrational a lot longer than we might think. I believe that those analyses from the late 1990s described in all important respects the similar processes underway in the 2000s that finally collapsed into the Great Recession. Further, the warnings of the dangers of a Minskyan debt deflation process still apply. While some already see recovery, what I see in Spring of 2011 reminds me of the respite we got after Goldilocks—but with an even more fragile financial structure. And while the private sector has retrenched—and the government budget has relaxed—high debt ratios (and bad debts) remain. With high unemployment and falling real estate prices, I do not believe a real recovery is underway. Further, we are witnessing (yet again) a boom of commodities and equities prices. Finally, with all the deficit hysteria in Washington (and the real fiscal crises at state and local government areas), we cannot look to pro-active fiscal stimulus. While budget deficits may continue to widen (in spite of balanced budget attempts) this will only slow the deterioration of the economy, as the deficits result from falling revenue rather than from discretionary stimulus.

Over all the years we worked together, the only substantial difference that persisted between Wynne's views and my own concerned the external balance. It must be remembered that Wynne lived through exchange rate crises in the UK that led to quite painful adjustments. However, these occurred on the Bretton Woods system or on managed but unsustainable exchange rate systems. The UK suffered for decades with unrealistically high exchange rates in conjunction with uncompetitive sectors; austerity was the only way to maintain exchange rates at desired levels because growth would worsen the trade balance and threaten the pound. In some

sense, the UK was always trying to relive its glory days as source of the international reserve currency—but it was a relatively small economy with an outsized financial sector. By contrast, the US is a much larger economy (with a growing financial sector that certainly did become outsized in the 2000s) with a floating exchange rate. It is much better suited to its role as provider of the international reserve currency. I will not attempt here to defend my belief that the US position was, and is, sustainable—its current account deficits provide the reserves the rest of the world desires. The transition from the UK position to the US position was a bridge too far for Wynne. We had to agree to disagree.

Hence, while I would always agree with his three sector analysis, and while it is identically true that the US current account deficit must be made up by a domestic ‘injection’, I always believed that the federal government deficit could be the balancing item. Hence, domestic private surpluses plus external deficits would equal government budget deficits. I do admit that we now face a horrific political constraint on budget deficits. Yet so far as the economics goes, there is no reason why persistent federal budget deficits cannot allow both our domestic private sector and our foreign partners to ‘net save’ in the form of US government debt (cash, reserves, and treasuries). But a detailed examination of that would take us too far afield.

Minsky always spoke of the ‘giants’ on whose shoulders we stand. Wynne Godley was truly one of those giants. Just as Minsky’s analysis of the financial structure of the economy has never enjoyed more interest, Godley’s stock-flow consistent modeling is growing in popularity. I expect that it will revolutionize macroeconomics, serving as a much more useful tool than the ‘microfoundations of macroeconomics’ that was so popular a couple of decades ago.

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