Income distribution and borrowing.
Tracking the U.S. economy with a "New Cambridge" model

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Abstract. The purpose of this paper is to track down the origin of the global recession, which started in 2007, to the behaviour of the private sector in the U.S. economy. The mainstream interpretation of the crisis is that it originated from a low-probability shock to financial markets, and more specifically to the shadow banking sector which was not properly regulated. A new set of rules, combined with temporary measures to sustain aggregate demand, should therefore be sufficient - in the mainstream approach - to bring the economy back on its growth path. We claim instead that the crisis has its roots in the shift in income distribution towards the top quintile - a trend which is stronger in the U.S., but common to several developed economies since the 1980s - combined with an increasing role of relative consumption in households’ decisions. Financial markets allowed the private sector to finance expenditure beyond real disposable income, and provided a powerful channel for the globalization of the crisis. In our view, therefore, financial markets multiplied the crisis on a global scale, and more regulation will indeed be needed, but a sustainable growth path will not be achieved unless action is taken to revert to an income distribution which allows for sustainable growth in the living standards of the median household. Our view is grounded in the stock-flow-consistent approach of Godley, which is at the heart of the macroeconomic model being used at the Levy Institute of Economics, and proven to be a useful tool for anticipating and tracking the current recession in the U.S.. We use the model to compare our results with the original “New Cambridge” approach, and the current debate on “twin deficits” and the impact of fiscal policy.

Introduction.
As we write (December 2009) a large majority of commentators are arguing that the U.S. economy has now passed the trough of the current recession, and recovery is under way, with a possible return to a positive and large growth rate in GDP by 2010. According to the more widespread interpretations of the economic and financial crisis which started in 2007, its origin is either due to an exogenous shock which could occur with low probability, or to some kind of misbehaviour in the conduct of monetary policy. Accordingly, the problems which generated the crisis can be fixed in the medium term by a more stringent regulation of those segments of financial markets which misbehaved, and by a return to the Taylor rule for managing monetary policy. All measures which have been undertaken to sustain the economy in the short run, such as injections of liquidity in financial markets and fiscal expansion, are seen as potentially dreadful in the medium term, requiring - sooner than later - a change in policy to eliminate the threat of inflation and to reduce public debt.

Some of those adhering to this line of thought do not believe that the economic theories dominant in the pre-recession era need any change. Eugene Fama’s theorem on market efficiency is still believed to hold, despite the evidence given by market collapses: the only remedies should pertain

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to how information on financial assets risk is treated, and economists are also blamed because they did not extend timely their models to new features of financial markets for derivatives. Surprisingly, or may be not so, none of the adherents to this line of thought had any perception of the incoming crisis. On the contrary, as late as August 4, 2007\(^1\), Taylor claimed that the economy was up and running with no perceptible threat.

A research project - pioneered by Wynne Godley at the Levy Institute of Economics - has developed a completely different approach, which we claim to be based on the “New Cambridge” tradition put forward by Godley and associates at Cambridge in the 1970s. According to this approach, a sustainable growth path can only be achieved if all stocks of assets/debt tend to stable ratios to income (or GDP). A corollary of this result is that whenever the deficit for any macroeconomic sector is larger than a given threshold, an imbalance in the assets/income ratio is bound to arise, drifting the economy into a path which will be unsustainable.

In this paper we will provide - in Section 2 - our interpretation of the crisis, discussing some puzzling features in the properties of the U.S. growth path from 1985 to 2007. In Section 3 we will discuss some features of the Levy model for the U.S. economy, as compared to the original “New Cambridge” approach. Section 4 will discuss some medium term policy options, and conclude.

2. The “New Consensus”

The recession which started in 2007 was unexpected by mainstream economists of both the “freshwater” and the “saltwater” groups\(^2\). Those who had been claiming that a recession was inevitable\(^3\) were a small minority, and although they “saw it coming”, their research agenda is not receiving the right attention yet\(^4\).

Why did mainstream economists fail to foresee the recession? In our view, the flaw lies at the heart of the “New Consensus”\(^5\) (NC) mainstream model. The characteristics of such a model, in its simplest form, have been summarized, among others, by Blanchard:

«First, the aggregate demand equation is derived from the first-order conditions of consumers, which give consumption as a function of the real interest rate and future expected consumption. As there is no other source of demand in the basic model, consumption demand is the same as aggregate demand. And given the assumption that, so long as the marginal cost is less than the price, price setters satisfy demand at existing prices, aggregate demand is equal to output. Putting these three assumptions together, the first relation gives us output as a function of the real interest rate and future expected output. Second, under the Calvo specification, the Phillips curve-like equation gives inflation as a function of expected future inflation, and of the “output gap”, defined as actual output minus what output would be absent nominal rigidities. Third, the monetary policy rule is formalized as a “Taylor rule”, a reaction function giving the real interest rate chosen by the central bank as a function of inflation and the output gap. (Nominal money does not explicitly appear in the model: The assumption is that the central bank can adjust the nominal money stock so as to achieve any real interest rate it wants. And, what matters for activity is the real interest rate, not nominal money per se.)» (Blanchard 2008, 8-9)

More formally, following Tamborini et al. (2009),

\(^1\) Welt am Sonntag (2007).
\(^2\) “Fresh water” economists are New-classicals, mainly identified with the “Chicago School”, while “Salt water” economists are New-Keynesians, and work in coastal areas of the U.S. See Krugman (2009)
\(^3\) See Bezemer (2009). We will discuss some common features of those economists who “saw it coming” in section 3.
\(^4\) Galbraith (2009).
\(^5\) According to Lavoie (2004). Some early features of the “New Consensus” were described in Allsopp - Vines (2000) and Taylor (2000). Woodford (2003) is considered to be the best detailed analysis of this approach.
\[ x_t = E_t x_{t+1} - \sigma (i_t - E_t \pi_{t+1} - r^*_t) \]  \hspace{1cm} (2.1)

\[ \pi_t = \beta E_t \pi_{t+1} + \kappa \pi_t \]  \hspace{1cm} (2.2)

\[ i_t = i^*_t + \gamma \pi (\pi_t - \pi^*) + \gamma_x (x_t - x^*) \]  \hspace{1cm} (2.3)

where \( x \) denotes the gap between the current level of output and the “natural rate of output”, \( i \) the nominal interest rate, \( \pi \) the inflation rate, \( r^* \) the “natural rate of interest” and \( E \) denotes expectations. Equation 2.1 implies that when the output gap is zero, the market value of the real interest rate equals the “natural” rate of interest, and any interest rate above the “natural rate” will decrease output.

Equation 2.2 is the “New Keynesian Phillips Curve”, where actual inflation depends on expected inflation and the output gap.

Finally, equation 2.3 is one form of the “Taylor rule”, where the interest rate is governed by a reaction function to inflation and the output gap.

This approach is behind the empirical work which was carried out in most Central Banks through Dynamic Stochastic General Equilibrium (DSGE) models\(^6\), and therefore theoretical model flaws will (and did) imply forecasting failures in Central banks.

The model is based on the assumption of forward-looking individuals who maximize utility, together with the New Keynesian assumption of some degree of monopoly, or other assumptions that imply that prices do not move instantaneously to clear all markets. The model also “solves” the dichotomy between growth models and short-run models, since it is both compatible with long-run equilibrium growth, and as a tool to address short-run deviations from the “natural” level of output.

Money and credit do not appear explicitly in this model: it is assumed that the stock of money can be adjusted so to get the interest rate to the level required by the Taylor rule, while credit may be (implicitly) provided to households to increase current consumption whenever (rational) expectations of future income increase.

A crisis can occur, in this framework, either because of an unexpected shock (usually modelled as a supply-side or technology shock), or because of policy failure (i.e. failure to adopt the Taylor rule). Accordingly, mainstream interpretation of the recession focused (1) on the fact that the recession was triggered by an extraordinary shock (“it is not so surprising that models designed to capture the average quarter in the economy’s life would not do so well when very unaverage events arise”, Altig, 2009); (2) on policy failures (“there is clearly evidence that there were monetary excesses during the period leading up to the housing boom.”, Taylor, 2009, p.3); or (3) failure of the theoretical and empirical models to capture recent evolution of financial markets.

The NC model sketched above describes a closed economy. An additional mainstream interpretation of the crisis refers to the “saving glut hypothesis”\(^8\). According to this theory, high saving in developing countries with under-developed financial markets - notably China - were invested in U.S. financial assets, bringing down interest rates and strengthening the dollar. Easy money was thus not the effect of monetary policy, but the consequence of “excess” liquidity, with the apparent paradox that developing countries were financing the U.S. housing bubble and excessive consumption.

We will not discuss open economy features in great detail in this paper\(^9\), but we note that the largest amount of U.S. Treasury bills has been acquired by foreign Central banks, not by individuals or

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\(^6\) See Woodford (2008), 17-18.

\(^7\) It is worth noting that Taylor had a radically different view as late as August 2007. “it is amazing in which excellent condition the world economy is at the moment. There has seldom been a better time.” Welt am Sonntag (2007)

\(^8\) Bernanke (2005)

private financial firms seeking the highest return in a well developed financial market. The level of the interest rate was therefore not determined on the saving-investment market, but by monetary and exchange rate policies.

What are the shortcomings of the NC model?

1. The desire to derive a macro model from aggregating the behaviour of representative agents with forward-looking expectations impose implausible constraints, and it is not well suited for a model which aims at tracking the economy in a recession, i.e. out of equilibrium;
2. The incoherence between short-run models (usually with some “Keynesian” assumptions) and growth models has been solved in favour of growth models, which are assumed to be valid also for the short run;
3. The time dimension in the model has no real relevance. Dynamic model solution usually imply a sequence of optimal equilibria where the trajectory of the economy over time is not relevant;
4. Financial markets are not explicitly modelled, since NC results show that credit conditions are not relevant for decisions in real markets;
5. Forward looking expectations deny the possibility of bubbles.

3. SFC-PK models and the “New Cambridge” approach

Our analysis of the evolution of the U.S. economy is based on a completely different approach, pioneered by Wynne Godley at the Levy Institute of Economics, with its origins in the “New Cambridge” theories developed in Cambridge (UK) in the 1970s. This class of models is usually labelled as “stock-flow-consistent” (SFC), in that one of the main features - with respect to other heterodox approaches - is the emphasis on dynamic stock-flow accounting for the whole economy. However, this requirement should be explicitly or implicitly valid for any consistent model, be it mainstream or heterodox. A better label is needed, but for the time being we will keep using “stock-flow-consistent post-Keynesian” (SFC-PK) models when referring to this approach. Its crucial features are the following:

1. The model is dynamic, and the position of the system in a given period is crucially affected by its previous historical path;
2. The model is consistent, in that every monetary flow is recorded as a payment for one sector and a receipt for another sector. In addition to flow consistency, every relevant stock - of real or financial assets - is linked to a corresponding flow. For instance, the net stock of assets for the household sector changes its value in a given period through household saving and capital gains;
3. The banking system is explicitly represented;
4. Prices do not necessarily clear markets. At any moment in time, the stock of an asset may differ from its “desired” level. Quantity adjustments towards “desired” or “equilibrium” levels for model variables require some buffers;
5. The accounting structure of models adhere to the principles laid down in the System of National Accounts (SNA) for flows, flow of funds and stocks accounting, helping to move from theoretical models to applied models.

Other features of SFC-PK models may and do vary. Generally speaking, authors adopting this approach do not feel the need for micro-foundation of the aggregate behaviour of agents, while they prefer the post-Keynesian or Marxian approach of splitting individuals into different groups, say “rentiers” or “capitalists” and “workers”. Other crucial features are easily derived: there is no distinction - in principle - between a SFC-PK model built to evaluate the short-run dynamics of an economy, and one where the long-run growth path of output is obtained through a sequence of

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10 An excellent reconstruction of how stock-flow-consistent models relate to the evolution of Keynesian theories is in Dos Santos (2006).
short-run adjustment processes\textsuperscript{11}. The explicit representation of the financial sector makes it possible to build models a la Minski or - more generally - to investigate the “financialization” of the economy\textsuperscript{12}.

We will not discuss further the theoretical foundations of SFC-PK models here\textsuperscript{13}, since we are more interested in the relevance of this approach for empirical applications and its relative merits in predicting the current recession. To our knowledge, the most advanced empirical work based on the SFC-PK approach is carried on at the Levy Institute of Bard College\textsuperscript{14}.

The Levy macroeconometric model was originally built in the 1990s with annual data, and developed over the years adopting quarterly data and with substantial revisions in the econometric methodology, although we may say that the key properties of the model have been preserved in all subsequent releases. The private sector is modelled as a whole, with no distinction between household and business\textsuperscript{15}. The model accounting structure can thus be laid down - at the current stage - assuming that the financial sector accommodates any demand for credit, accepts any supply of deposits, and transfers all of its profits to the non-financial sector.

Adopting the Social Accounting Matrix (SAM) approach pioneered by Richard Stone, model accounting can be represented as in Table 1, where monetary payments are recorded in the columns, and receipts in the rows. There is no explicit treatment of physical assets, and gross investment is included in domestic private expenditure.

The SAM has the property that the value of each row is equal to the value of the corresponding column. For the first row and column, the identity is between the value of aggregate demand (including the ex-post change in inventories) and the value of production. For the other rows and columns, the identity is defining saving (in the Capital Account row) as the difference between income (the row total) less expenditure (including capital expenditure) and transfers. Accounting consistency requires that, when demand equals supply, the sum of saving for all sectors (i.e. our financial balances) be zero, i.e.

\[ \text{NAFA} - \text{GD} - \text{BP} = 0 \]  \hspace{1cm} (3.1)

where NAFA is the net acquisition of financial assets by the private sector, GD is government deficit, and BP the balance of payments.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|c|c|c|}
\hline
 & Production & Private sector & Government & Rest of the World & Capital Account & Total \\
\hline
1. Production & & Private expenditure & Government expenditure & Exports & Aggregate demand & \\
\hline
2. Private sector & Wages & Profits & Govt. transfers to private s. & Net income payments & Private s. Income & \\
\hline
3. Government & Net indirect taxes and s.c. & Direct taxes and s.c. & & & Govt. receipts & \\
\hline
4. Rest of the World & Imports & Private s. net transfers to RoW & Govt. net transfers to RoW & & Payments to RoW & \\
\hline
7. Capital Account & Net Acq. of Fin. Assets & Govt. surplus & -BoP & & & 0 \\
\hline
\end{tabular}
\caption{Social Accounting Matrix for the Levy Model}
\end{table}

\textsuperscript{11} See Dos Santos - Zezza (2008) for a simple model.
\textsuperscript{12} See Van Treeck (2008) among many others.
\textsuperscript{13} The classical reference for SFC-PK models is now Godley - Lavoie (2007).
\textsuperscript{14} Bezemer (2009) notes that several commentators who “saw it coming” have “a flow-of-funds view of the economy”.
\textsuperscript{15} Bezemer (2009, p.12), with Godley being the only one to have developed a formal model.

This is consistent with the “New Cambridge” approach we will discuss later.
The model is developed along the lines of stock-flow consistent models\textsuperscript{16}: the stock of net financial assets of each sector increases with net saving\textsuperscript{17}, and stocks feed back into flows through interest payments, or whenever flows adjust towards a stock-flow norm.

The crucial equation in the model relates private expenditure to disposable income and net financial assets of the private sector, all measured in real terms, that is

$$DE = f(YD, FA, Z)$$

where $DE$ is private expenditure, $FA$ the opening stock of net financial assets, and $Z$ a vector of other variables. Assuming a linear relationship, and abstracting from $Z$ and capital gains, since net assets accumulation is given by

$$FA = FA(-1) + YD - DE$$

in steady state, when $FA = FA(-1)$, and therefore $DE = YD$, equation (2) can be solved to yield a stable ratio between income ($YD$) and net financial assets ($FA$). This was one of the ideas underlying the “New Cambridge Hypothesis”, which assumed in addition that the private sector would adjust rather quickly to a shock, to restore its desired income/assets ratio.

Although Godley usually derived his results from a steady state assumption, generalizing his results to a steady growth regime would not change our outcomes. In steady growth,

$$FA = (1+g)·FA(-1)$$

where $g$ is the (steady) growth rate in assets. Using (3.4) in (3.3) and assuming a linear relation among $DE$, $YD$ and $FA$, that is

$$DE_t = \beta \cdot YD_t + \gamma \cdot FA_{t-1}$$

(3.5)

gives

$$\frac{YD}{FA_{t-1}} = \frac{g + \gamma}{1 - \beta}$$

(3.6)

and disposable income is stable with respect to the opening stock of financial assets, for stable parameter values. Note also that (3.6) implies that income and assets grow at the same rate.

In the current model\textsuperscript{18}, the income/asset ratio of the private sector is affected by capital gains on homes and equities, and borrowing. Namely, an increase in either the real price of equities, or the real price of homes, will increase expenditure over income (and wealth). Again, the ability to borrow for both households and corporations generates an increase in expenditure over income.

We were careful to test for possible misspecifications. In particular, borrowing and income may depend on expenditure, so we tested for weak exogeneity, as well as for structural breaks, and the equation has passed these tests, as well as the standard battery of specification tests.

The rest of the Levy model is more conventional, following the Keynesian and post-Keynesian tradition. Trade depends on income and relative prices, trade prices react to the exchange rate as well as domestic and foreign prices, etc. Some variables, notably inflation, are not modelled in detail yet.

\textsuperscript{16}See (Godley/Lavoie 2007) for an extensive treatment.

\textsuperscript{17}In its current stage the model does not detail the accounting of capital gains on domestic assets, while the accounting for capital gains on U.S. assets abroad is well developed. Capital gains effects on expenditure are captured through price variables.

\textsuperscript{18}See Zezza (2008) for a technical discussion of our equation.
The “New Cambridge” features of this model have been discussed in Zezza (2009). Namely, the “New Cambridge hypothesis” was that the net acquisition of financial balances for the private sector as a whole was stable, relative to GDP, and any shock to this stable assets/income ratio would be corrected rather quickly.

The implication of this hypothesis was a “twin deficits” result, i.e. any imbalance in the foreign account was matched by an imbalance in the government account. In the face of a crisis which called for an expansionary fiscal policy on Keynesian lines, it was thus necessary to adopt measures to counter the implied widening of the current account imbalance. Such measures could be exchange rate devaluation, or protection.

The “New Cambridge Hypothesis” was grounded in empirical results, which were questioned in the following years, and as public funding to the research group dried up, the approach was progressively abandoned and basically neglected until Godley’s work at the Levy Economics Institute started to gain ground, for its merits in providing a consistent explanation of the evolution of the U.S. economy. At present, as we shall see in the next section, the Levy model shows that the ratio between the stock of financial assets and income for the private sector may deviate from its “sustainable” level for a prolonged time period - and this will signal an imbalance which will imply some kind of correction - but will stabilize again when the economy reaches a stable growth path, so that changes in fiscal policy - an increase in government deficit, say - imply a corresponding shock of equal size to the external balance which, however, may take a much longer time to materialize than was assumed in the original New Cambridge view.

4. Our analysis of the current recession

In our view, the current financial and economic crisis is not the consequence of malpractices in some sectors of the financial industry, or a result of policy failure - although both certainly played a role - but rather the inevitable consequence of an unbalanced growth process which started as the end of the 1980s19. Godley’s first Strategic Analysis report pointed to seven unsustainable processes:

“(1) the fall in private saving into ever deeper negative territory, (2) the rise in the flow of net lending to the private sector, (3) the rise in the growth rate of the real money stock, (4) the rise in asset prices at a rate that far exceeds the growth of profits (or of GDP), (5) the rise in the budget surplus, (6) the rise in the current account deficit, (7) the increase in the United States’ net foreign indebtedness relative to GDP.” (Godley 1999:2)

Some of these processes - excluding monetary policy (3) and budget policy (5) - characterized both the so-called “New Economy” growth period, which ended with the 2001 recession (Godley/Izurieta 2002), and the next growth period characterized by a housing bubble, which ended in 2007.

The fall in private sector saving is depicted in Figure 1, which shows that saving - the sum of household saving and undistributed profits, or corporate saving - has declined steadily since the 1980s. In addition, while aggregate saving exceeded investment - including investment in housing - until the 1990s, since 1997 the decline in saving implied that aggregate investment had to be financed by borrowing.

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19 The saving rate of the personal sector started to decline approximately in 1985. In the same period the distribution of income started to shift systematically in favour of the richest quintile of the population. For a theoretical model of the relation among the saving rate, borrowing and the distribution of income see (Zezza 2008).
As a consequence, private sector debt has been rising steadily as a share of GDP (Figure 2), with household debt accelerating in the 2000s, reversing its course only in the first quarter of 2008, with the start of the current financial crisis.

**Figure 2 about here**

The strong increase in domestic demand, financed by credit, was the main source in U.S. growth in the 2000s, resulting in a widening balance of payments deficit, which in turned cumulated into a growing external debt. In Figure 2 we report the net asset position of the U.S., relative to GDP, along with an implicit measure of U.S. debt obtained by cumulating the balance of payments through time, starting from a benchmark value. This latter figure will not depend on fluctuations of either assets market values or the exchange rate, and the figure clearly shows the very specific feature of the U.S. economy: a depreciation of the exchange rate - as the one which started in 2002 - has little effects on U.S. liabilities, which are mainly in US dollars, but increases the market value of U.S. assets abroad, which are mainly in euro, yen and other strong currencies, resulting in an improvement in the net asset position, even against a large and growing current account deficit.

**Figure 3 about here**

**Figure 4 about here**

In Figure 4 we report two simple measure of relative growth in asset prices, obtained by subtracting the annual growth rate in nominal GDP from the growth rate in a stock market index and in a price index for the housing market. The picture in Figure 4 shows clearly how the stock market bubble played a major role in the “New Economy” period between 1995 and 2000, and how the housing market bubble started immediately after, with both price indexes now decreasing. The growth rate in stock market prices fluctuated around the growth rate in output until 1995, when it started to exceed it for an unusual period, followed by the stock market crash of 2001. In the same period, the growth rate in house prices started to exceed consistently, for a prolonged period, the growth rate in output, until the crash in 2007.

The charts in Figures 1 to 4 show that five of the unsustainable processes outlined in Godley (1999) were still at work in the 2000s, after the 2001 recession and the end of the “New economy”. On the other hand, budget and monetary policy changed their course. In Figure 5 we report three measures of the monetary policy stance, namely the federal fund rate, and the growth rate in M1 and M2. We subtract the inflation rate to obtain a measure of the ex-post interest rate, and measures of the growth in the money stock net of inflation. The chart in Figure 5 confirms that the stock of M2 was growing rapidly in the second half of the 1990s, although the real interest rate was not low. With the 2001 recession, interest rates were reduced in real terms, and they were gradually raised again in 2004, when the price of oil increased, and inflation seemed to become a threat again.

**Figure 5 about here**
Some commentators argue that the reason for the current crisis is based on the easing of monetary policy:

“The classic explanation of financial crises is that they are caused by excesses -- frequently monetary excesses -- which lead to a boom and an inevitable bust. This crisis was no different: A housing boom followed by a bust led to defaults, the implosion of mortgages and mortgage-related securities at financial institutions, and resulting financial turmoil. Monetary excesses were the main cause of the boom. The Fed held its target interest rate, especially in 2003-2005, well below known monetary guidelines that say what good policy should be based on historical experience. Keeping interest rates on the track that worked well in the past two decades, rather than keeping rates so low, would have prevented the boom and the bust.” (Taylor J.B. 2009b)

This explanation, however, does not take into account that household (and foreign) debt had started to rise well before the monetary easing. The decline in mortgage rates allowed the private sector to increase their debt while keeping interest payments constant as a share of income, and therefore postponed a more severe recession and fuelled a boom. If interest rates had been kept at higher levels, the short growth recession of 2001 would have lasted longer, and would have had more serious consequences on unemployment and output.

Fiscal policy was also used to contrast the drop in domestic demand in the 2001 recession. In that period, the federal budget turned from a surplus into a deficit, and helped the economy recover. One of the problems with the current recession is thus that fiscal policy is required at a time when the government is already running a deficit.

Summing up, the long period of sustained growth in the U.S. was fuelled, in our view, by “excessive” private domestic expenditure, with a major role played by households expenditure in the 2000s, financed by increasing injections of credit. The mainstream view - before the crisis burst - was that growth in domestic expenditure was not excessive, but rather due to rational expectations on future income growth. Godley’s (1999) seven unsustainable processes prove that this growth pattern could not be sustained, and implied a crisis at some point, but does not provide an explanation for why private sector demand increased faster than disposable income for a prolonged time period.

In our view, another unsustainable process was at work, since excessive consumption was - at least in part - determined by two joint factors: a shift in the distribution of income towards the richest quintile, and the struggle of the median household to keep its relative standard of living against the richest quintile. The plausible impact of the shift in income distribution, and the reasons why income distribution started to change, were discussed as early as 1999:

“There is nothing mysterious about this trend towards greater inequality. Policies are specifically designed to give the already rich more disposable income, particularly through tax cuts and by pushing down wages. The theory and ideological justification for such measures is that higher incomes for the rich and higher profits will lead to more investment, better allocation of resources and therefore more jobs and welfare for everyone. In reality, as was perfectly predictable, moving money up the economic ladder has led to stock market bubbles, untold paper wealth for the few, and the kind of financial crises we shall be hearing a lot about…” George (1999)

The shift in the distribution of income has continued in the 2000s, and is by now well documented, and common to countries other than the U.S. Such a shift is expected to increase the aggregate saving rate, since richer households have a lower propensity to consume out of income.

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21 See Zezza (2007); (2008) for a theoretical analysis including the role of capital gains on real and financial assets.
On the contrary, the saving rate has declined over this period and up to the beginning of the recession, so that theories which emphasize the role of relative consumption\textsuperscript{22} have taken ground. “middle-class families have exhausted the coping mechanisms they’ve used for over three decades to get by on median wages that are barely higher than they were in 1970, adjusted for inflation…”

[The coping mechanisms have been:]
[1] moving more women into paid work. (…)
[2] The typical American now works two weeks more each year than 30 years ago (…)
[3] We began taking equity out of our homes” Reich (2007)

Some evidence of such processes is provided in the figures 6 to 9. Figure 6 reports a measure of real income for some quintiles of U.S. households, along with the top 5%. The chart shows that real income has been practically flat for the first two quintiles, while the highest quintile, and more notably the top 5%, has experienced a considerable increase, with some downward movement in 2001 and 2008 due to stock market crashes.

A somewhat different picture is given by real weekly earnings in manufacturing, which again have been stagnant in the last thirty years (Figure 7).

On the face of stagnant real wages for the lowest quintiles, female participation to the labour force has increased steadily up to the 1990s, when it has stabilized (Figure 8). And average hours worked per week have increased on average in the 1990s (Figure 9).

All the mechanisms described above, adopted by U.S. households in the face of stagnant real wages, have thus become less effective, and prompted households to increase borrowing to defend their relative standard of living. U.S. Aggregate demand in the 2000s has been driven by consumption fuelled by borrowing, a process which was sustainable until the debt burden was stable relative to income. Interest payments were indeed almost stable in the 2000s, relative to income, since the increase in the debt to income ratio for households was matched by the decline in interest rates. Once the Fed decided that inflation could again become a threat, and raised interest rates, the debt burden increased, the subprime bubble exploded and the recession started.

\textsuperscript{22} See Cynamon - Fazzari (2008), Stiglitz (2008), Barba - Pivetti (20008), and Akerlof (2007) for a somewhat different perspective.
5. Where do we go from here?
Notwithstanding the failure of mainstream models to predict the recession, most commentators still rely on the “New consensus” and DSGE models to inform their opinion on how the U.S. is getting out of the recession. A predominant view is that output is recovering, although employment will lag behind, but the worst of the recession is over, and no further action needs to be taken - with some caveats about the external (or “global”) imbalances.

Our view\textsuperscript{23} is rather different, since in our projections we focus on the dynamics of the components of demand - rather than on potential output. In our latest exercise, we show that:

- the increase in government expenditure has helped the economy during 2009, and it is likely to have a positive impact in 2010;
- even though government intervention has implied one of the largest increase in deficits in post-war history, its size has not been large enough to compensate for the drop in domestic demand;
- without a sizeable depreciation of the U.S. dollar, the contribution of U.S. net exports to aggregate demand will - again - not be sufficient for a recovery in employment;
- given the current credit conditions and debt levels, households are expected to keep a negative level of borrowing. Consumption will therefore stagnate, and if real wages are kept stable - on the face of recent surges in productivity - this will exacerbate the problem of deficient domestic demand;
- investment is not likely to increase if expectations of profits in domestic markets don’t improve. Incentives towards the adoption of different (“greener”) technologies may help.

It follows that government intervention will still be needed on a large scale to bring unemployment down to reasonable levels. Fiscal policy alone, however, will worsen the external balance again in the medium term (the “New Cambridge” result), and therefore other policies - such as a stronger devaluation of the dollar vs the currencies of surplus countries - or other policies of a more protectionist nature, will be needed.

In Figure 10 we report our estimated path for unemployment under three alternative hypothesis. Our baseline is provided by recent estimates on federal government deficit published by the CBO, based on the hypothesis that no further government intervention will take place and, in addition, that Bush tax cuts will not be renewed. In this scenario unemployment remains above 10 percent, with the economy growing at a very slow rate. Government deficit shrinks, and the external balance improves.

An alternative, more realistic\textsuperscript{24}, scenario assumes that the fiscal stimulus is prolonged, postponing the adjustment to government deficit. Unemployment decreases, but the “twin deficit” problem reappears, calling for further intervention.

Finally, we assume a 15 percent devaluation in the U.S. dollar, which generates additional final demand, and allows the government to decrease the size of its intervention. Under this scenario, unemployment decreases roughly in line with our “pure fiscal policy” exercise, but with no costs to the external balance.

\textit{Figure 10 about here}

\textsuperscript{23} Papadimitriou et al. (2009)
\textsuperscript{24} It is not plausible that the U.S. government will let unemployment remain at such a high level to the next election round.
Conclusions

In this paper we have claimed that the “New consensus” approach to macroeconomics, which results from introducing market imperfections into new classical models of perfect markets and rational behaviour, is inherently useless to understand the evolution of a real economy where the role of financial markets is relevant for investment and consumption decisions.

We have synthesized the stock-flow-consistent post-Keynesian approach, originating from the work of Wynne Godley, and showed that it has proven to be more insightful in tracking the current recession as a result of an unbalanced growth regime, driven by borrowing.

Such growth regime, in our view, is the result of neo-liberal policies and attitudes which started to gain ground in the 1980s, implying - among other things - a sensible change in the distribution of income, and stagnation in the real wage of middle-class households.

According to our model, the U.S. economy will not be able to reduce unemployment through the action of market forces alone, and a sustained high level of government deficit is and will be required, in the short term, unless other measures are taken to increase the contribution of net exports to aggregate demand.

To achieve balanced growth in private sector demand in the medium term, a major shift in policies governing the distribution of income will be required, as redistribution from the top income classes to the middle and lower classes is needed to finance any increase in domestic consumption. In addition, a stronger set of incentives for domestic investment would be helpful, especially in those activities - such as the switch to “greener” technologies and products - where market forces and profit maximization contrast with social welfare.
References


Figure 3. U.S. net foreign assets and external balance

Figure 4. Difference between growth in asset prices and growth in GDP

Sources: S&P, Ass. of realtors, NIPA
Figure 5. Real growth in M1 & M2, real interest rate
Figure 6. Income limits for each fifth and top 5% of households

Source: census.gov
Figure 7. Average weekly earnings in 1982 dollars
Manufacturing

Source: BLS
Figure 8. Female share of nonfarm employment

Source: BLS
Figure 9. Average weekly hours of production workers
Manufacturing

Source: BLS
Figure 10. U.S. Unemployment rate

- End of fiscal stimulus
- Fiscal stimulus maintained
- Partial fiscal stimulus and US$ devaluation