Income distribution and borrowing
A "New Cambridge" model
for the U.S. economy

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Paper outline

- The "New consensus" approach
- The SFC-PK approach
- A SFC model in practice
- Explaining the recession
- The role of income distribution
- Prospects

The "New Consensus"

Price stickiness in a new classical model

$$x_t = E_t x_{t+1} - \sigma(i_t - E_t \pi_{t+1} - r_t^*)$$

$$\pi_t = \beta E_t \pi_{t+1} + \kappa x_t$$

$$i_t = i_t^* + \gamma_\pi(\pi_t - \pi^*) + \gamma_x(x_t - x^*)$$

x : output gap
π : inflation
i : nominal interest rate

From Tamborini et al. (2009)

The "New consensus"

«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)

The crisis according to the "New consensus"

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
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)
3. failure of the theoretical and empirical models to capture recent evolution of financial markets (Trento)

Shortcomings of the "New consensus"

- The forward-looking approach makes time "irrelevant". Short run dynamics are governed by expectations alone

- The short-run model is "obtained from a growth model"

- Money and finance do not matter (unless some constrains are introduced)

- How can you model a bubble if you have a forward-looking representative agent?

Main features of the SFC approach

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. Adherence to SNA standards helps going from the theoretical model to applied models

Main features of the SFC-PK approach

5. 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.

6. The long-run growth path is obtained from the sequence of short-run adjustments

7. The explicit representation of the financial system allows for the analysis of models a la Minsky, or for investigating "financialization" etc.

We claim that the SFC-PK approach can help reconcile different heterodox approaches. We already showed that it is the natural context for models *a la Graziani*.

A model which helped us predict the crisis

The model in use at the Levy Economics Institute, developed by Godley et al., is grounded in the SFC-PK literature, and in addition retains some crucial aspects of the "New Cambridge" approach of the 1970s: to begin with, no distinction between households and (non-financial) business.

Seven unsustainable processes (1999)

Godley (1999) pointed to seven unsustainable processes which could harm U.S. growth prospects. In our view, a longer, deeper crisis was averted in 2001, without addressing the underlying growth problems, so that the next (current!) crisis was more severe.

It follows that if the remaining imbalances are not addressed by appropriate policy measures, resuming growth under the same demand patterns will imply further instability.

In our view, therefore, the current crisis is not due to financial markets or monetary policy – which have indeed acted as a powerful multiplier – but can and should be tracked down to real markets.

No one saw this coming?

Some critics may argue against a prediction which started in 1999, on the ground of the "stopped clock syndrome".

Bezemer (forthcoming) "No One Saw This Coming" reviews the relevant literature and finds that only 12 economists (and their teams) anticipated the recession

"...in an extensive search of the relevant literature...Only analysts were included who provide some account on how they arrived at their conclusions. Second, the analysts included went beyond predicting a real estate crisis, also making the link to real-sector recessionary implications, including an analytical account of those links. Third, the actual prediction must have been made by the analyst and available in the public domain, rather than being asserted by others. Finally, the prediction had to have some timing attached to it."

The 12 economists are Dean Baker; Wynne Godley; Fred Harrison; Michael Hudson; Eric Janszen; Stephen Keen; J.B. Madsen & J.K. Sorensen; Kurt Richebacher; Nouriel Roubini; Peter Schiff; Robert Shiller.

Seven unsustainable processes, plus one…

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)

8. the shift in the distribution of income

SFC models, or "accounting models"

Five of the processes above are related to the analysis of financial balances, which gives clues to where the economy is going in the medium term.

From national accounting it is easy to show that financial balances are linked through the identity between <u>saving and investment</u>, or

$$(Sh - Ir) + (P - Ik - In) = GD + BP$$

Where Sh = household saving; Ir = residential investment; P = undistributed profits; Ik = non-residential investment; In = change in inventories; GD = government deficit; BP = balance of payments on current account

Financial balances

- Each financial balance, by definition, has a counterpart in changes in financial assets and liabilities

- (Sh - Ir) = NAFAh = ΔAssets - ΔLiabilities

- A negative balance therefore implies a decrease in financial assets, and/or an increase in financial liabilities. A measure of "financial fragility" can be given by the ratio of liabilities to assets: it follows that negative balances imply an increase in financial fragility of that sector.

#1. The fall in private sector saving

Private sector saving and investment

% of GDP

Net investment
Saving

Source: NIPA, FoF
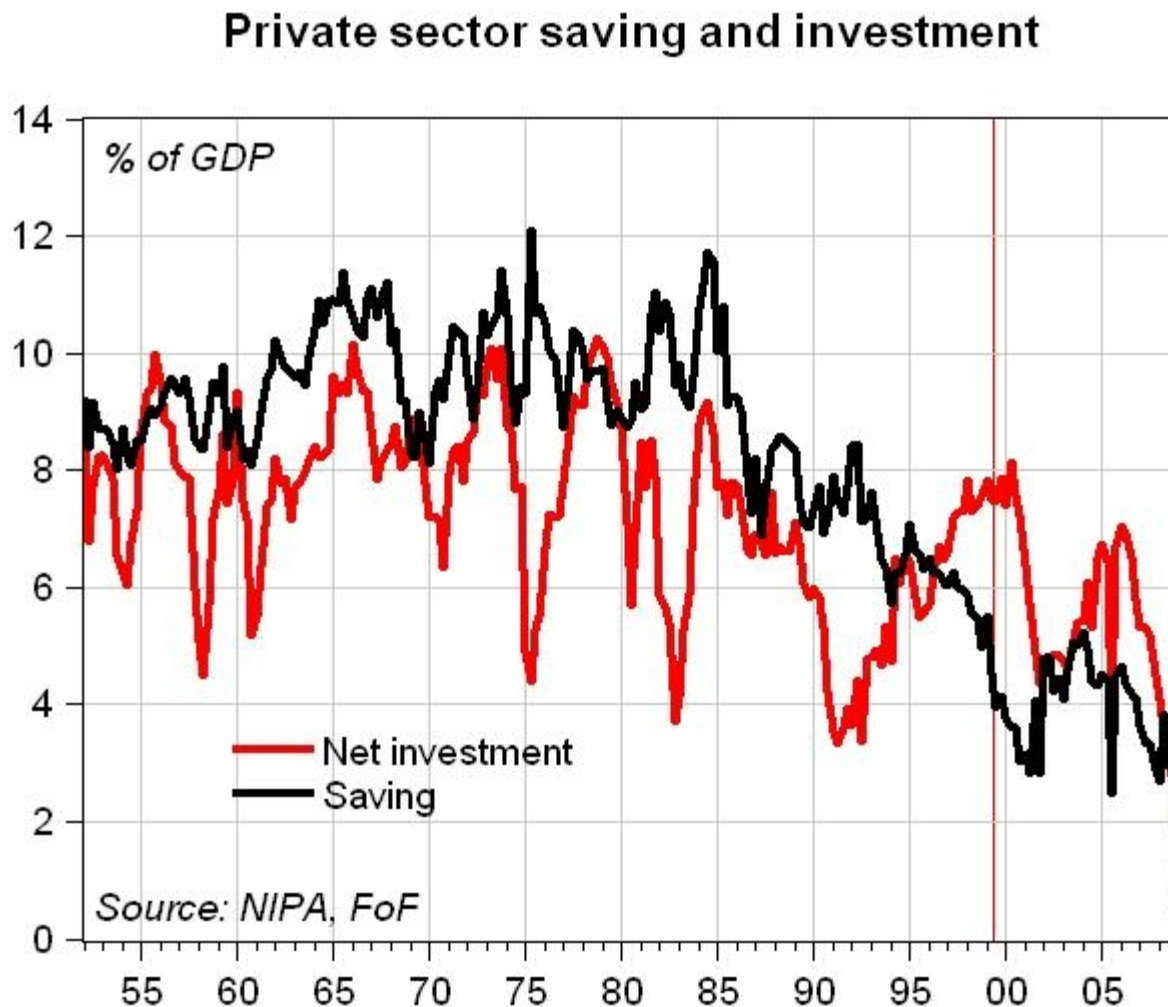
Credit-fuelled (debt-burdened) growth

Before the 1990s, internal funds were sufficient to finance private sector investment or, to put it differently, the private sector Net Acquisition of Financial Assets (NAFA) was in a stable rate to income.

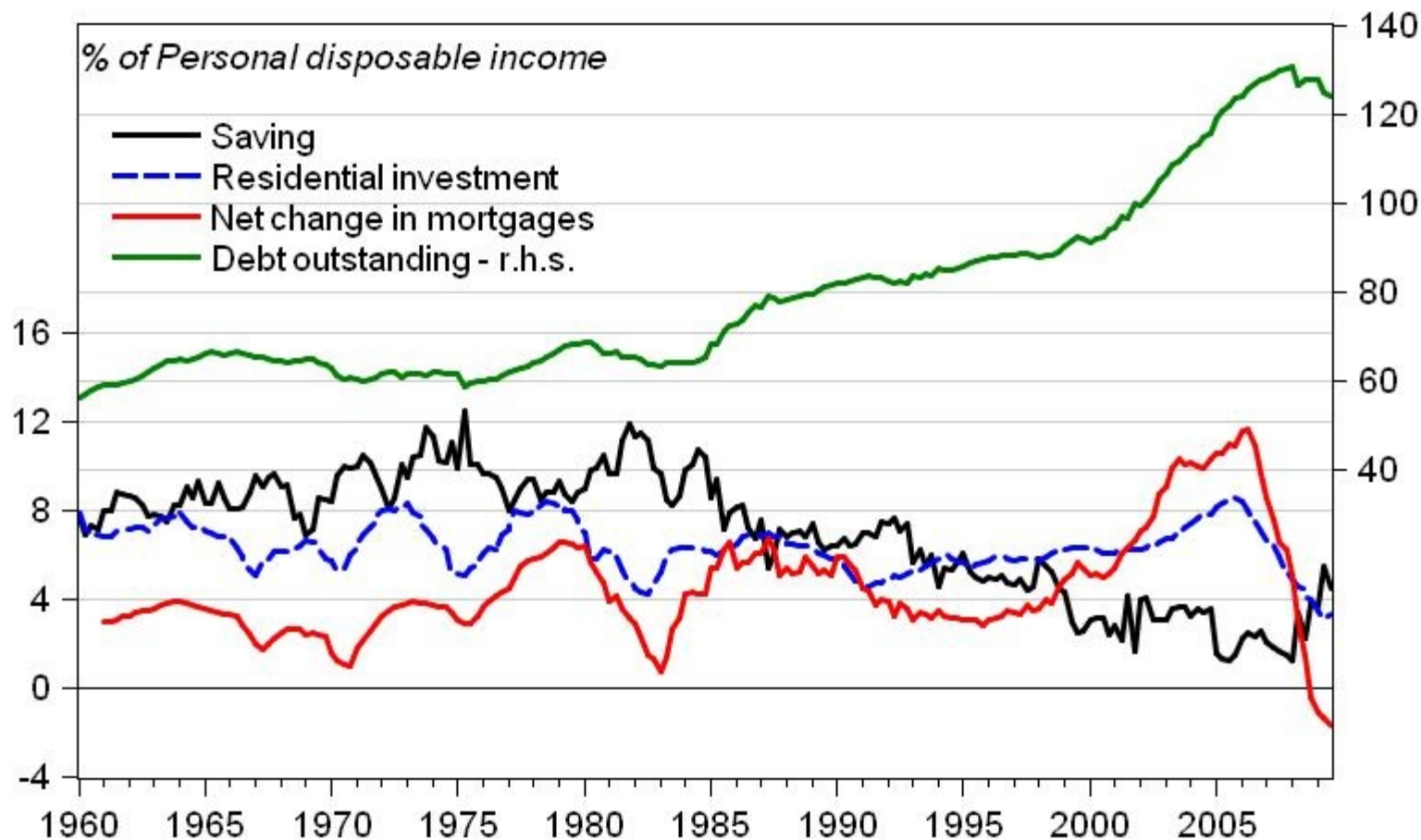Excess of investment over internal funds implies process #2: the rise in the flow of net lending to the private sector.

#2. The rise in lending

Private sector: Debt and Borrowing
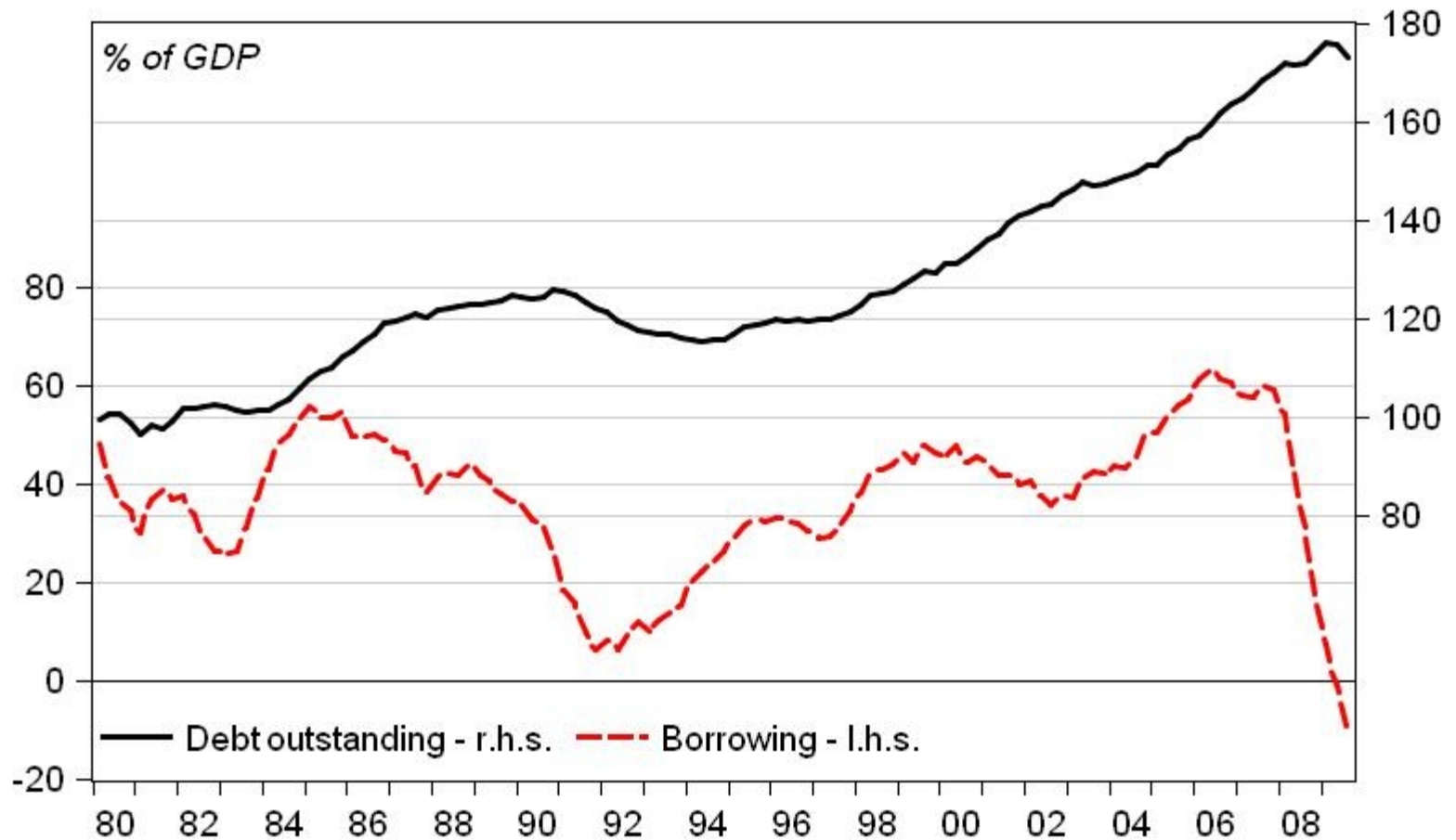
More detail: the personal sector

Personal saving, borrowing, investment and debt

*Gennaro Zezza* – La Crisi Globale – Siena – 26-27/1/2010 **- 18/37**

Fiscal policy

Starting from a budget surplus, fiscal policy was effectively used in the 2000s to counter the drop in private sector demand.

Government deficit is now at an historic high, and further expansionary policies will imply a large increase in government debt relative to GDP.

#6&7. External imbalance


U.S. net foreign assets and the U.S. dollar

- - - Net foreign assets at hist.costs
- - - Net foreign assets at market value
— U.S. dollar - rhs
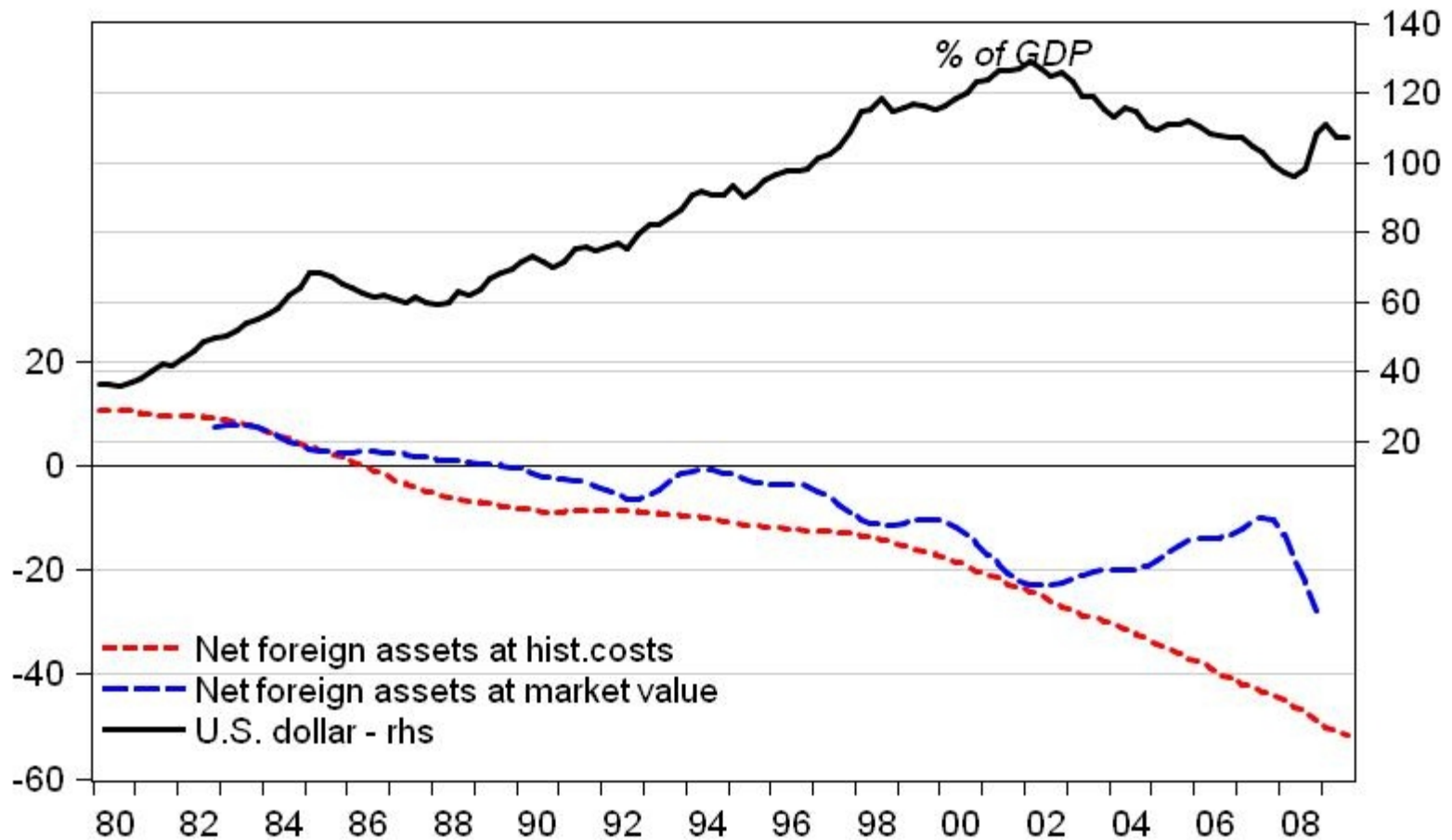
External imbalance

A consequence of U.S. internal demand growing faster than its trading partners – along with exchange rate management – has implied a growing external deficit on the current account, which translates into a growing external debt relative to GDP.

Since U.S. liabilities are denominated in dollars, while U.S. assets abroad are largely in euro and other currencies, a devaluation of the dollar has improved the net external position, notwithstanding the persistent deficit in the current account balance

#3. Monetary policy

Figure 4. Real growth in M1 & M2, real interest rate
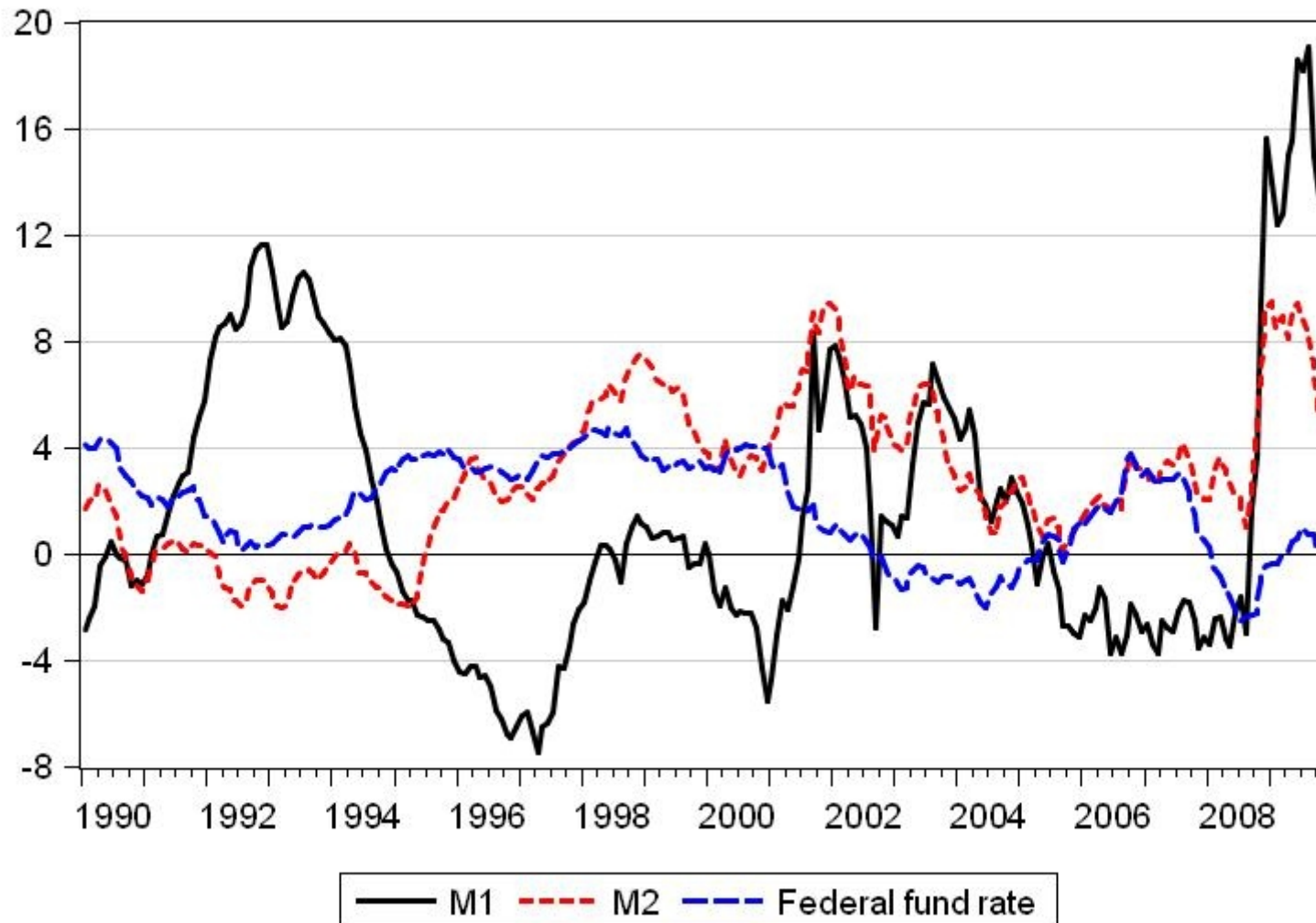
Monetary policy

Some commentators put the blame on monetary policy for keeping interest rates too low, and therefore allowing an ever increasing level of debt.

In our view, low interest rates helped deferred the crisis. As interest rates went down and debt went up, **household debt burden stayed roughly constant relative to income**. As interest rates started to rise again for fear of inflation, the debt burden increased and this gave a timing for bursting the bubble in the real estate market.

However, as we have shown, the underlying process of rising debt/income ratios started much earlier.

#4. The asset price bubbles

Figure 3. Difference between growth in asset prices and growth in GDP
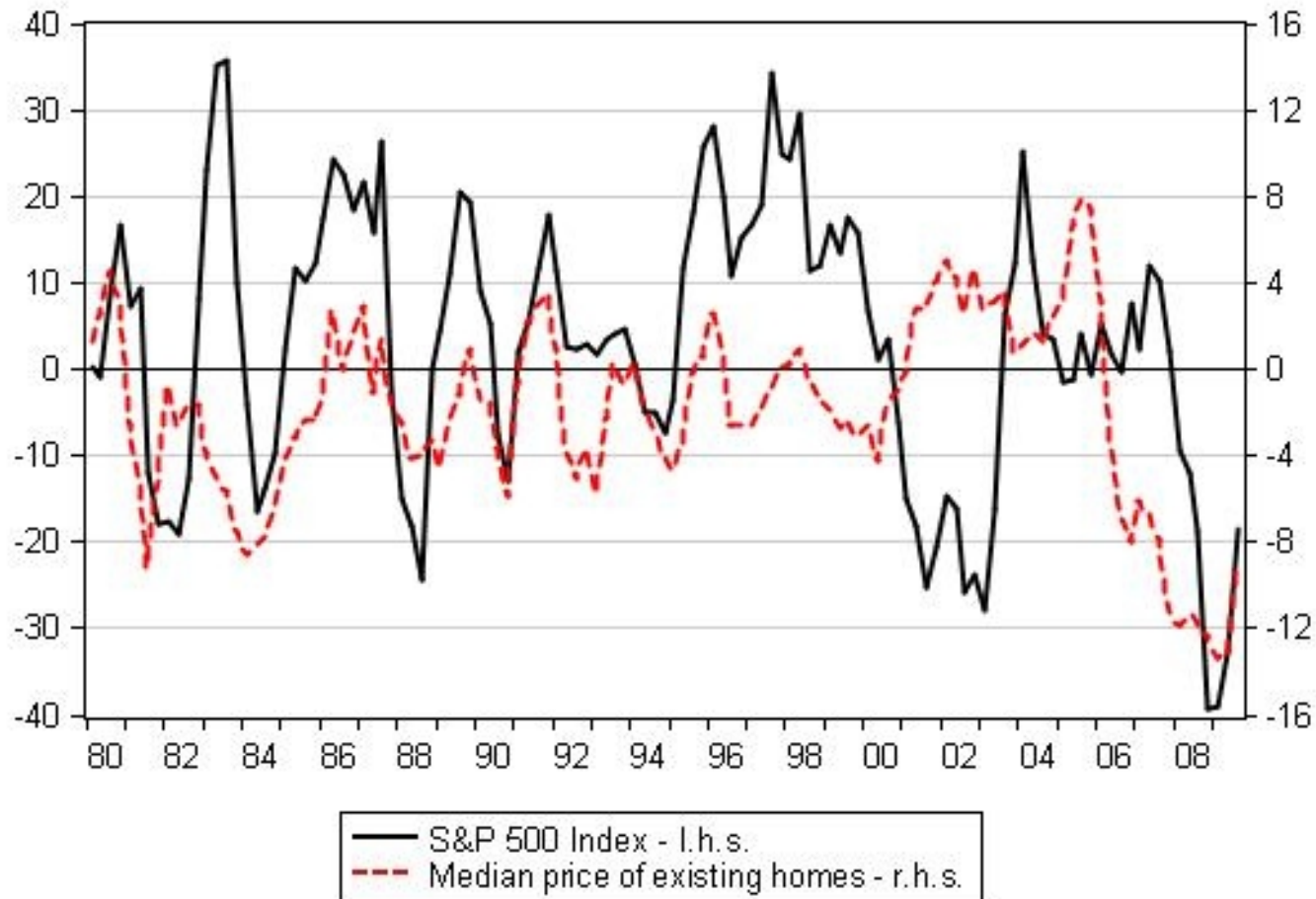
Our interpretation of the crisis

For the U.S., it became clear, in the second half of the 1990s, that the private sector had started to reduce systematically its NAFA, getting into debt. The "new economy" period could then be interpreted as debt-fuelled growth, as suggested in Godley (1999), implying an ever-growing current account deficit (for stable fiscal policy).

The current financial crisis could have started in 2001, with the burst of the stock market bubble. However, the drop in private sector borrowing, and the consequent recession, was countered by an expansionary fiscal policy which filled the gap in aggregate demand, but kept household debt (and foreign debt) growing. At the time Godley started to insist on the need to take policy actions to counter the foreign imbalance.

# Why "excessive" consumption?

The change in NAFA, or excessive consumption, remains to be explained.

In a theoretical SFC model (Zezza, 2007) we have shown that, in a post-Keynesian framework with two household groups with different propensity to save, and proper modeling of the housing market and financial markets – in the face of a changing distribution of income – a drop in NAFA can only be explained if *relative consumption* matters.

This "keep up with the Joneses" approach has gained more ground (Stiglitz, 2008; Cynamon-Fazzari, 2008; Barba – Pivetti, 2008)

#8. Distribution of income

Income limits for each fifth and top 5% of households
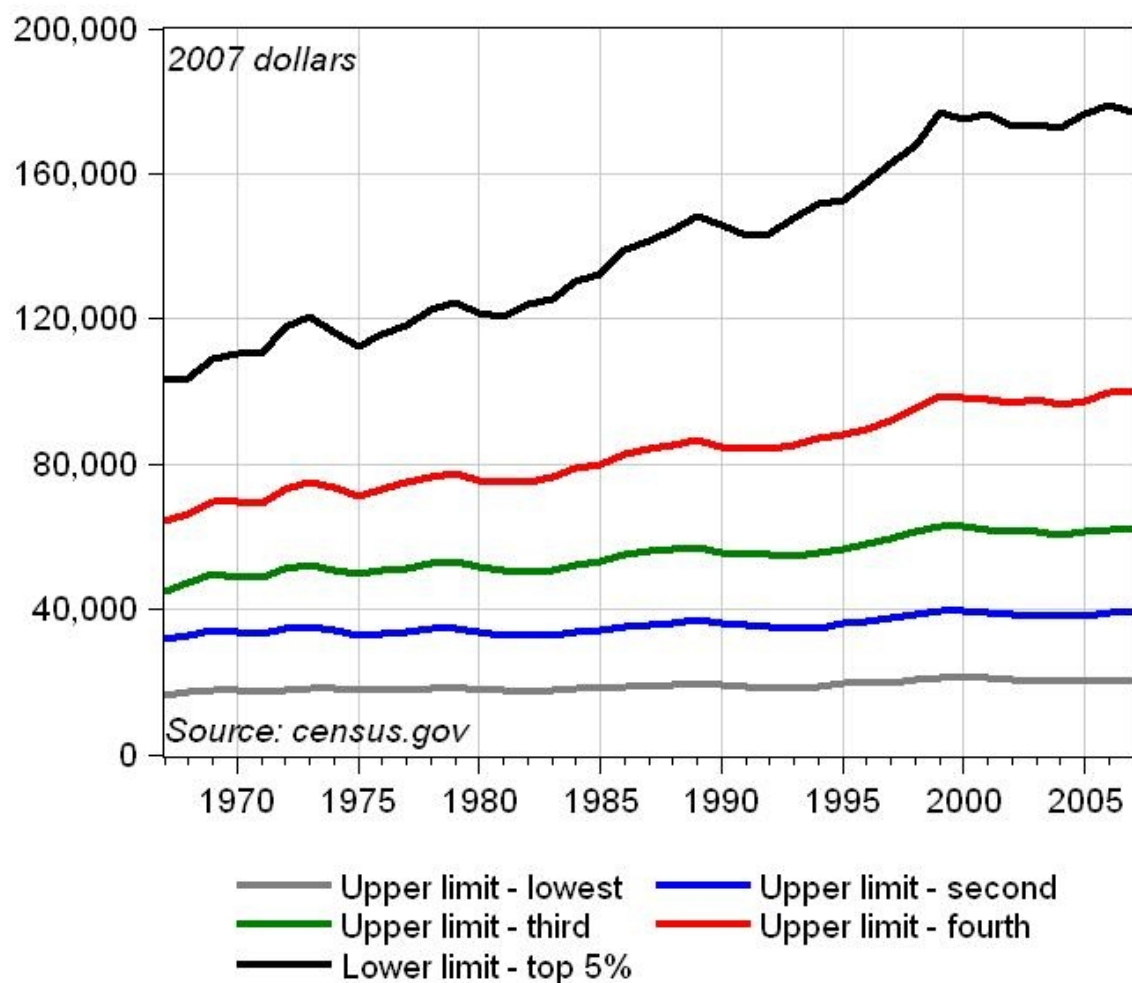
Stagnant real wages

Average weekly earnings in 1982 dollars
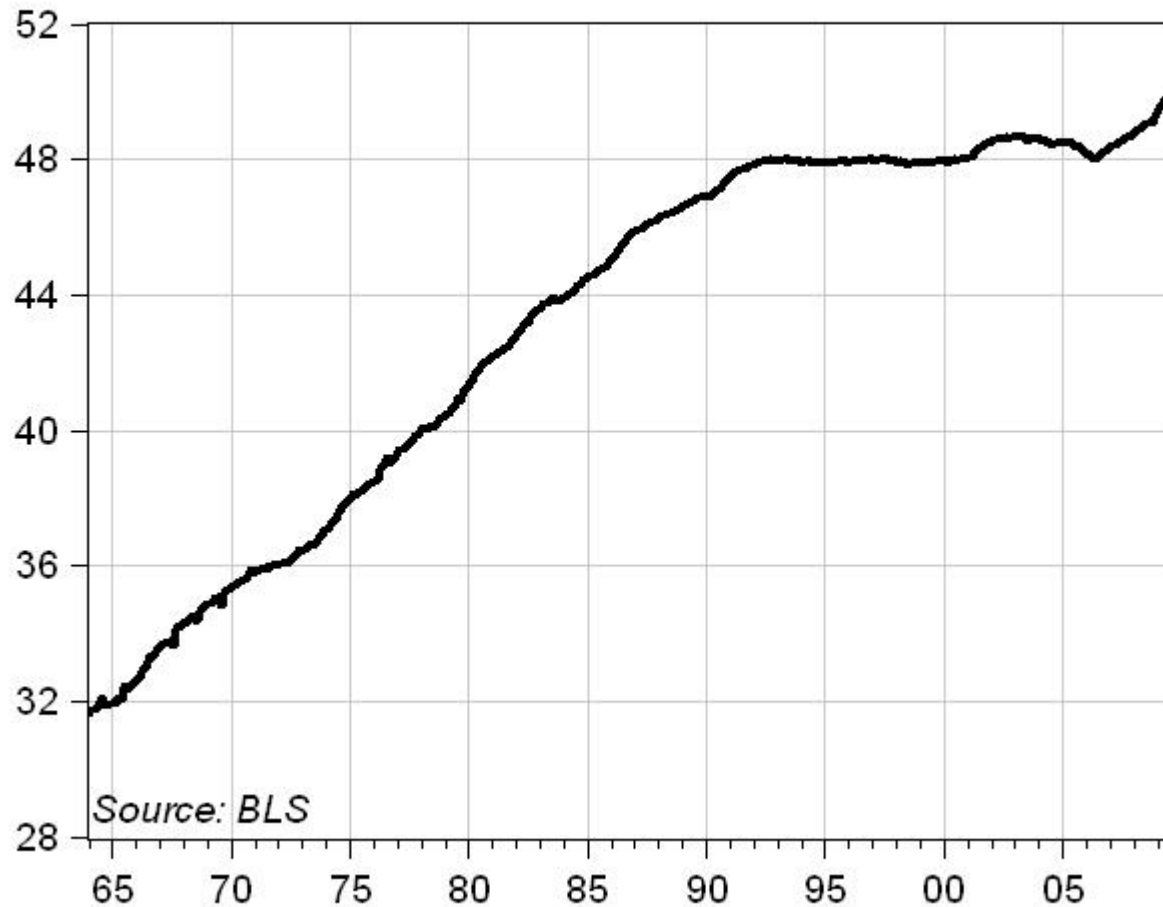Manufacturing

Source: BLS

Effects of changes to income distribution

An increase in the share of income and wealth going to the richest quintile should imply an <u>increase</u> in the propensity to save.

Unless the lower quintiles try to keep up. It has been suggested that – on the face of stagnant real wages – keeping up has implied (or required) an increased female participation to the labor force first, an increase in working time next, and finally an increase in borrowing.
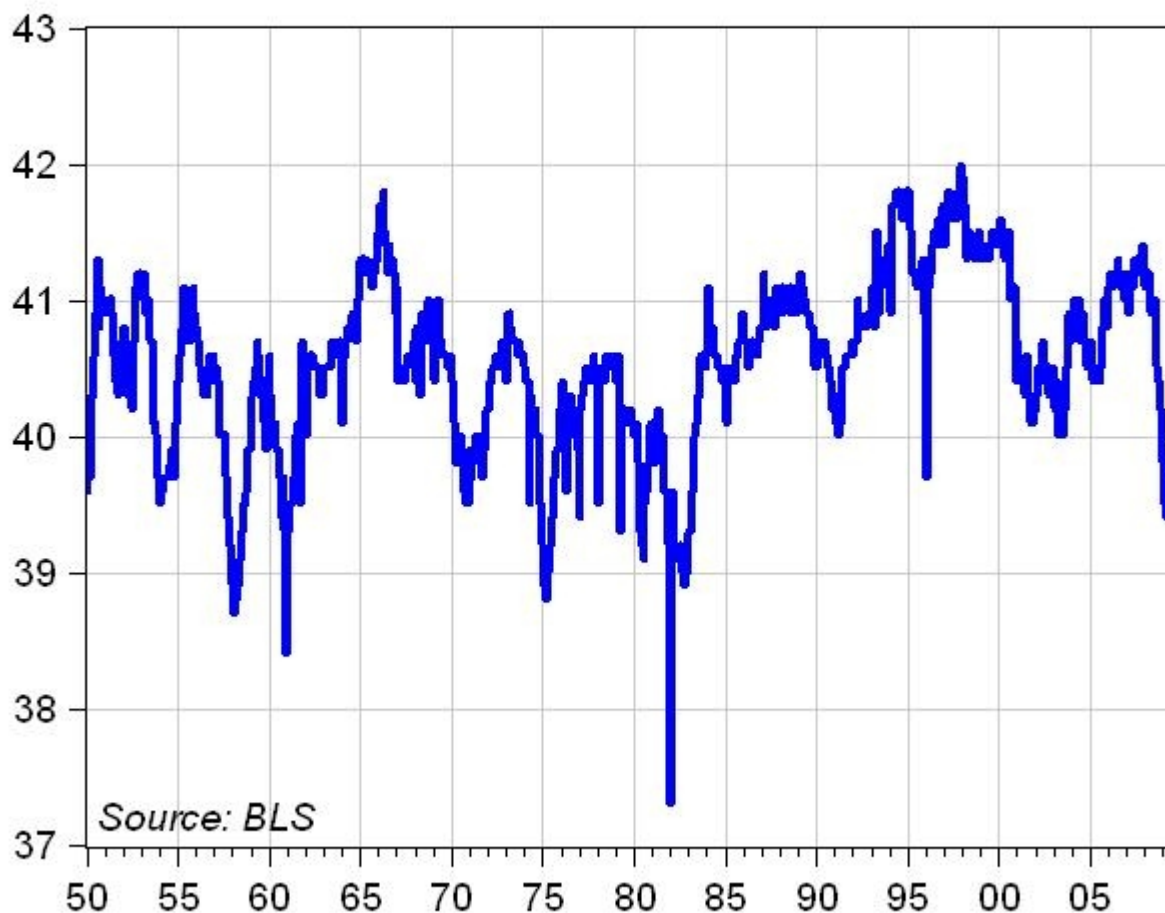
Female participation

Female share of nonfarm employment

Working time

Average weekly hours of production workers
Manufacturing

Source: BLS

Conclusions and policies

- Fiscal policy is needed to close the gap in aggregate demand generated by the collapse in private sector borrowing

- A huge fiscal stimulus will imply an explosive path for the government debt relative to GDP. However, if interest rates remain low the impact on future government deficits will be small, and the debt can (eventually) be reduced when growth has recovered

- What is not solved by the fiscal stimulus is the external imbalance, which will again get worse
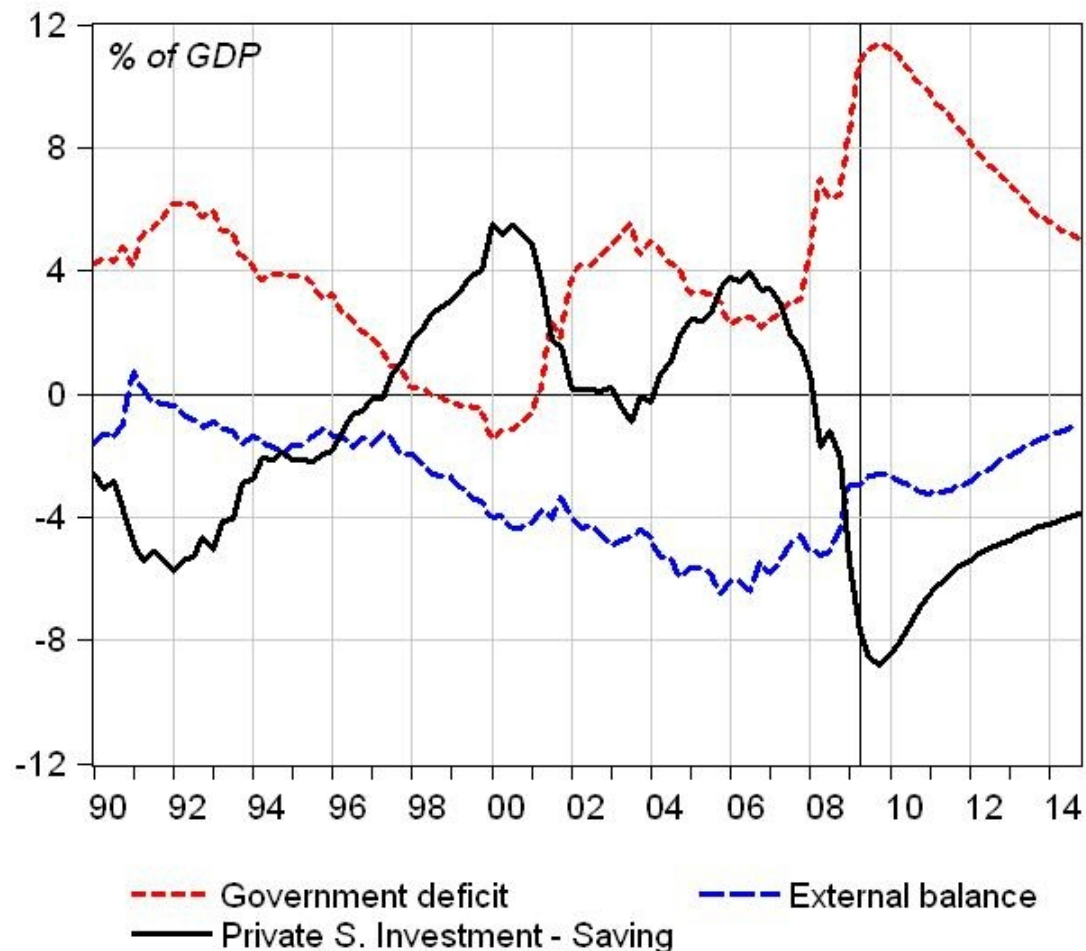
Policies

- One way to handle the foreign imbalance is through protectionism

- …or expansionary policies in surplus countries (Germany, China)

- It would be worth exploring other ways, such as a reform of the international monetary system which introduces automatic stabilizers for deficit (and surplus!) countries, along the lines of the Clearing Union proposed by Keynes

Restoring the balance between real wages and productivity

- Little attention is given to the relationship between the dynamics of income distribution, aggregate demand and household borrowing and debt

- In our view, if real wages keep growing less than productivity, economies will remain on unsustainable growth paths
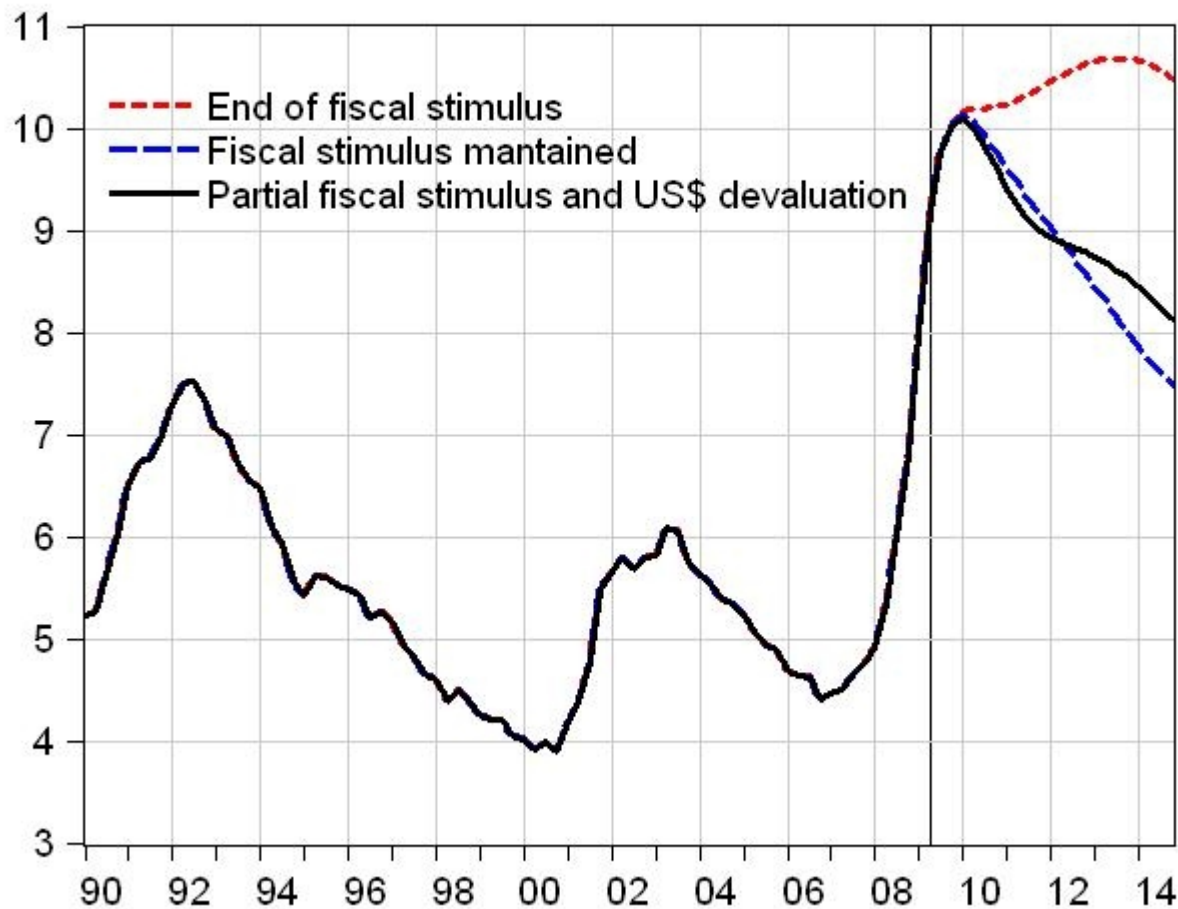
Our last projection - balances
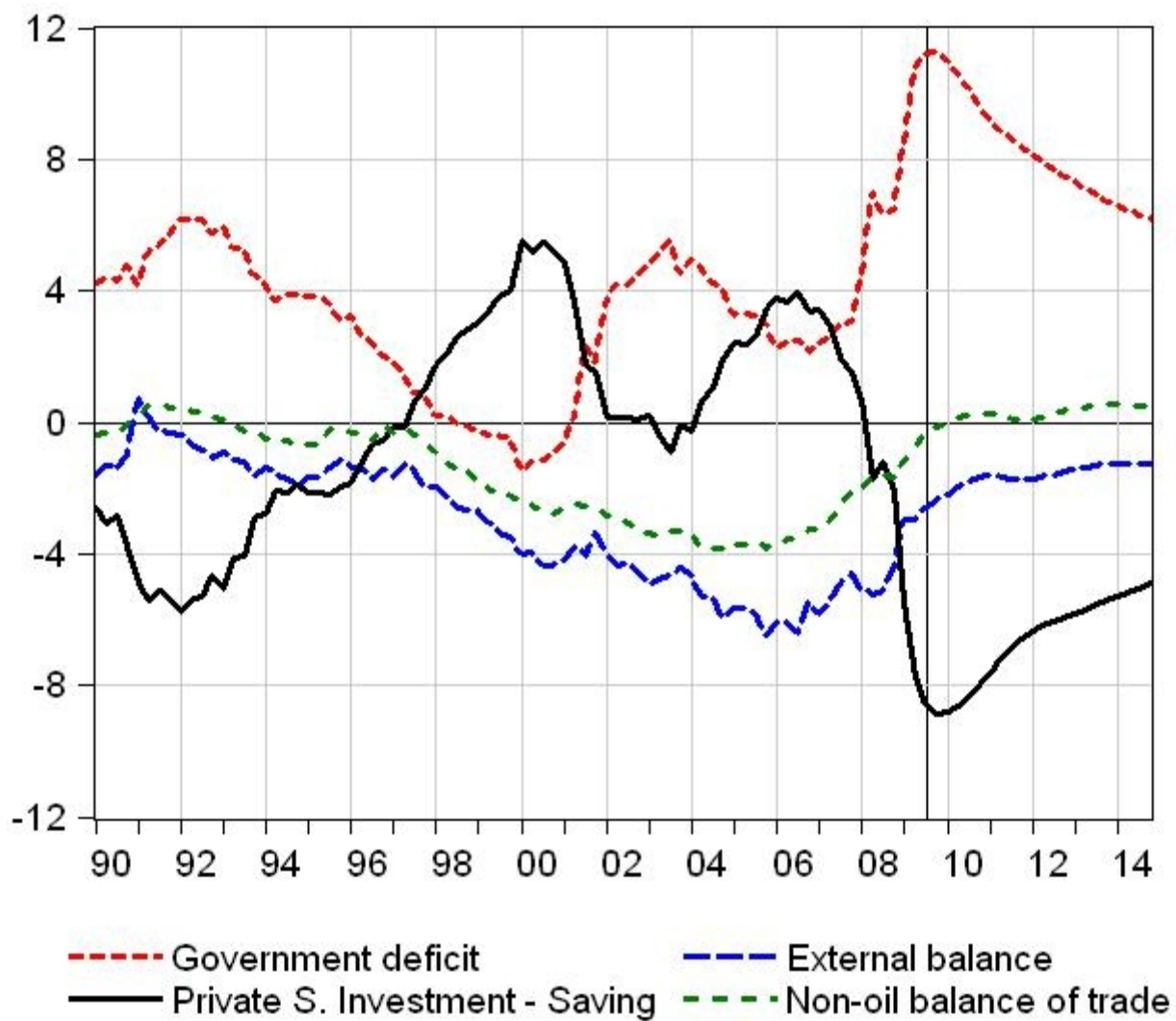
2.5. U.S. Main Sector Balances

Legend:
- --- Government deficit
- ——— Private S. Investment - Saving
- --- External balance

Our last projection - unemployment

U.S. Unemployment rate

U.S. Main Sector Balances

Legend:
- Government deficit
- Private S. Investment - Saving
- External balance
- Non-oil balance of trade

The "New Cambridge hypothesis"

In the 1970s, Godley and his group used the financial balances identity as the basis for a model of the UK economy. For the private sector as a whole, the difference between saving and investment is equal to the net acquisition of financial assets (NAFA), which in turn are equal on (the increase in) liabilities of the government or the rest of the world

$$NAFA = GD + BP$$

This approach was unconventional, since it merged households and business analyzing the private sector as a whole.

The "New Cambridge hypothesis" was that NAFA was stable, relative to GDP, and this gave rise to a theory for "twin deficits", i.e. any imbalance in the foreign account was matched by an imbalance in the government account.

In the face of 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.

Effects of a fiscal stimulus
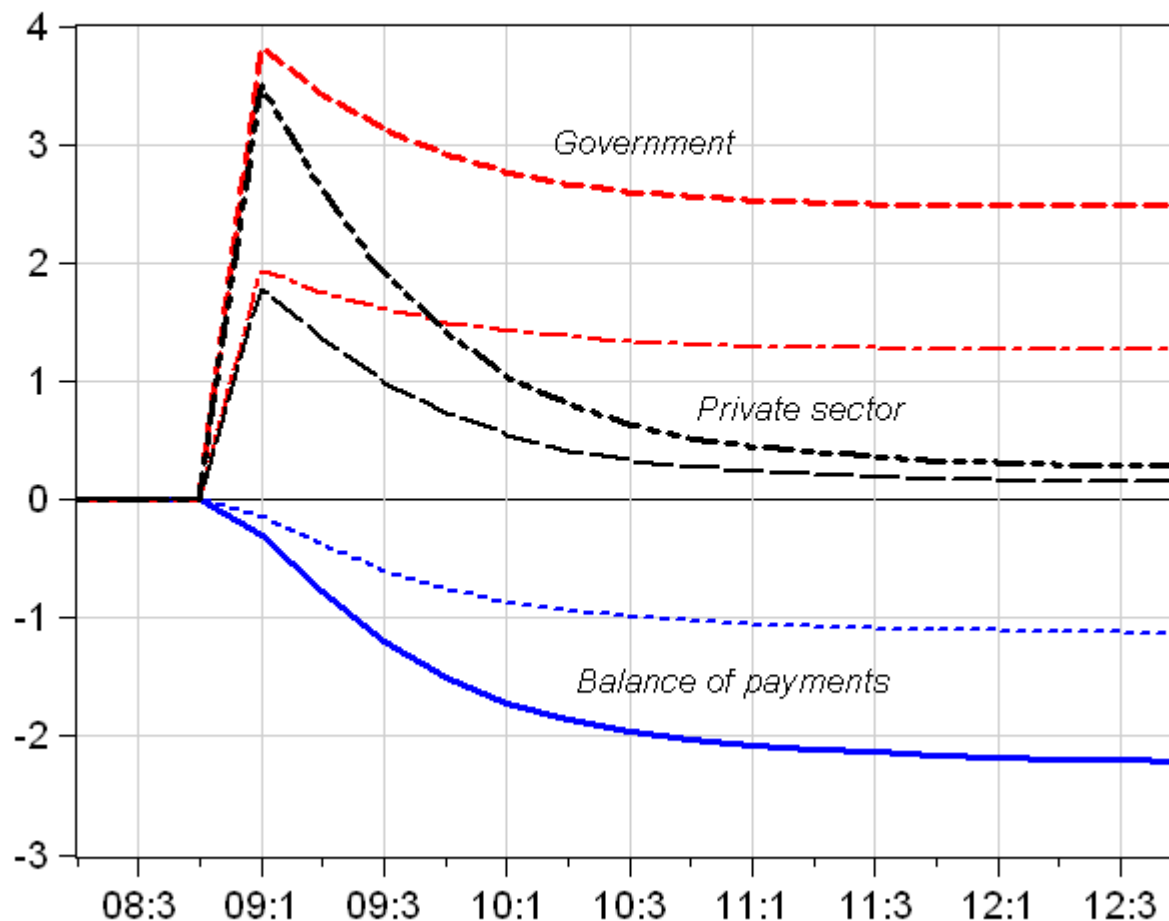
The "New Cambridge Hypothesis" does not hold in the short run, but holds in our model in the long-run.