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Rising inequality as a cause of the present crisis

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The article argues that the economic imbalances that caused the present crisis should be thought of as the outcome of the interaction of the effects of financial deregulation with the macroeconomic effects of rising inequality. In this sense rising inequality should be regarded as a root cause of the present crisis. I identify four channels by which it has contributed to the crisis. First, rising inequality creates a downwards pressure on aggregate demand since poorer income groups have high marginal propensities to consume. Second, international financial deregulation has allowed countries to run larger current account deficits and for longer time periods. Thus, in reaction to potentially stagnant demand, two growth models have emerged: a debt-led model and an export-led model. Third, (in the debt-led growth models) higher inequality has led to higher household debt as working-class families have tried to keep up with social consumption norms despite stagnating or falling real wages. Fourth, rising inequality has increased the propensity to speculate as richer households tend to hold riskier financial assets than other groups. The rise of hedge funds and of subprime derivatives in particular has been linked to rise of the super-rich.

Key words: Crisis, Distribution, Inequality, Effective demand, Growth regimes, Post-Keynesian economics
JEL classifications: E12, E25, E60

1. Introduction

The recession that began in 2008 has been the worst economic crisis since the 1930s. The discussion of its causes usually focusses on defects in the financial system: incentives of bank managers, financial instruments that lacked transparency, an exaggerated trust in the ability of sophisticated statistical models to insure against risks, the shift from the originate-and-hold to the originate-and-distribute module of banking made possible by mortgage-backed securities, increasing international imbalances. Whilst there can be no doubt that financial factors are critical in the making of the crisis, the present debate runs the danger of neglecting other socio-economic aspects. The rise of inequality

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has been one of the profound social changes since the early 1980s in all Organisation for Economic Co-operation and Development (OECD) countries. In the Anglo Saxon countries, we observe a sharp increase in personal income inequality. Top incomes have experienced a spectacular growth (Piketty and Saez, 2003, 2007; OECD, 2008). In continental European countries we see changes in the functional distribution of income with wage shares falling by around 10 percentage points (of national income). Given the extent of redistribution that has taken place, one might expect that there are macroeconomic effects. Whilst several authors have noticed that there might be a link between rising inequality and the crisis (e.g., Wade, 2009; Rajan, 2010; Stiglitz, 2010), there is as of yet little systematic analysis. This article gives a conceptual framework, based on post-Keynesian theory, for the different channels through which rising inequality may have contributed to the crisis and presents some preliminary evidence to substantiate these channels.

My hypothesis is that the crisis should be understood as the interaction of the deregulation of the financial sector (or financialisation, more generally) with the effects of rising inequality. The article is informed by Kaleckian macroeconomics and by French regulation theory. I identify four channels through which rising inequality has contributed to the crisis. First, rising inequality creates a downwards pressure on aggregate demand, since poorer income groups have higher marginal propensities to consume. Second, international financial deregulation has allowed countries to run large current account deficits (or surpluses) for extended time periods. Thus, in reaction to potentially stagnant domestic demand, two growth models have emerged: a debt-led model and an export-led model. Third, in the debt-led growth models higher inequality has led to higher household debt as working-class families have tried to keep up with social consumption norms despite stagnating or falling real wages. Fourth, rising inequality has increased the propensity to speculate as richer households tend to hold riskier financial assets than other groups. The rise of hedge funds and subprime derivatives in particular has been linked to rise of the super-rich.

The article will clarify these channels and present preliminary evidence to substantiate them. The analysis leads to the following research questions: is there evidence for the emergence of debt-led versus export-led growth models? Is there evidence for the effect of changes in income distribution on consumption demand and aggregate demand? Is there a link between rising inequality and rising debt levels? Has increased inequality contributed to a higher propensity for speculation? The article deals with how inequality contributed to the crisis. In doing so it touches on many broader issues, but I do not attempt an exhaustive discussion of the causes of the crisis.

The article is structured as follows. Section 2 gives an overview of the crisis and its different phases. Section 3 makes some comments on the debate on the origins of the crisis. Section 4 documents the rise in inequality in the past decades. Section 5 discusses four channels through which rising inequality has contributed to the crisis and presents evidence for these channels. Section 6 situates the overall argument with the literature, and Section 7 concludes.

2. The crisis 2007–12

In mid-2006 house prices in the USA started to decline. With hindsight, that probably marks the beginning of the crisis, but the US growth model had given rise to imbalances along several dimensions. Rapidly rising house prices, and the mortgage lending that came with it, had been the basis of a boom driven by credit-financed consumption and construction investment in the USA. The boom came with large current account surpluses and, due to financial innovation, the financial sector increased its assets and liabilities on a massive scale. This section gives a brief overview of the unfolding of the crisis.

The crisis broke out in spring 2007 in a seemingly obscure niche of the US financial system: the subprime market, which is the market for derivatives on low-quality mortgage credit, thus the initial name of the crisis as the subprime crisis. This is a rather small segment of the overall mortgage market, though it accounted for a substantial portion of the credit growth in the years before the crisis. As subprime credit is, by definition, of low quality, it was the natural field for a securitisation of these loans that was supposed to reduce risk (e.g., IMF, 2006). What was going on here was the extreme form of what happened on a much broader scale in the entire mortgage industry. In August 2007 the crisis spilt over into the interbank market, where banks lend to each other, usually very short term. The interbank market is at the very centre of the modern financial system. Interest rates rose to more than 1 percentage point above those on government bonds. This increase in the risk premium of lending reflected that banks did not trust each other. Rightly so, as it turned out. Central banks reacted quickly and pumped billions (of dollars and euros) into the market to maintain liquidity.

However, whilst the interbank market stabilised, the crisis evolved. In spring 2008 Bear Stearns, one of the leading investment banks, was bankrupt and could only be sold with the Fed guaranteeing some US$20 billion worth of assets. A first (small) fiscal stimulus packet was implemented in the USA. At this stage the effect of the crisis on the real economy outside the USA was limited. In August/September 2008 the crisis turned into a full-scale financial crisis—and it did so with a bang: Lehman Brothers, one of Wall Street's leading investment banks, went bankrupt. The end of the world (or at least of big finance) as we knew it seemed to have arrived. Interest rates soared (interest rate spreads rose to several percentage points) and liquidity froze.

Again, governments reacted. The principles of neoliberal free-market economics were suspended for a few weeks. Central banks provided more liquidity, but that proved insufficient to stabilise markets. Governments had to intervene directly: in the USA, AIG, an insurance firm that had insured huge volumes of credit derivatives, was taken over by the state, as were Fannie Mae and Freddie Mac, the two state-sponsored mortgage refinancing giants. Within a few weeks European countries followed suit with the recapitalisation of financial institutions and massive guarantees for interbank credits becoming mainstream economic policy. Recapitalisation meant that governments effectively nationalised (fully or partly) financial institutions—but governments abstained from interfering with the management of banks despite obvious management failures. In late October 2008 an EU summit issued a statement that no systemically important financial institutions would be allowed to fail—a capitalism without bankruptcies (of big banks) was declared!

By fall 2008 the financial crisis had turned into an economic crisis. World trade contracted by more than 20% and GDP in most developed countries shrank at a speed not seen since the 1930s (in most countries by around 5%). And it not only hit those countries that had experienced property bubbles, but also countries like Germany and Japan where property prices had been practically flat; it spread as well to emerging countries. Eastern European countries were severely hit, with the Baltic countries suffering GDP declines of around 20%. The IMF had to be called in to save Hungary, Pakistan and the Baltic states. But the most conspicuous symbol of the downturn was certainly the fall of GM: once the world's largest firm, it now had to rescued by the US government.

Whilst complete meltdown seemed imminent in fall 2008, in the course of spring 2009 it became clear that the (historically unprecedented) scale of government intervention had prevented outright collapse. A cascade of bank breakdowns could only be prevented by rescue packages that amounted to 80% of GDP in the USA and the UK (UNCTAD, 2009, Table 1.8) and by the Fed expanding its balance sheet by US$1 trillion, mostly by acquiring assets that it would not have touched in normal times. Risk premia remained elevated, banks were making phenomenal losses, unemployment started rising, but normality of a sort returned. The pressure to reform the system had receded. Earlier declarations of a fundamental restructuring of the financial system (e.g., the G20 meeting of November 2008) had been forgotten and the debate on reform turned into specialists' debate about technicalities, with all but private bankers and central bankers being excluded from decision-making circles. The arrogance of the financial elite, however, is best captured by the fact that in spite of the obvious disaster in finance, bankers' bonuses returned to pre-crisis levels.

But the normality that was about to restore itself was not quite the normality existing before the crisis. After all, the crisis was by no means over, though for the bankers it seemed so. For large parts of the population, it had only just had begun. Production fell and unemployment rose. In the USA foreclosures were rising. People lost their jobs and their homes. There was another devastating effect of the crisis: budget deficits were increasing, surpassing 10% of GDP in many cases, with public debt increasing accordingly. Financial markets started to worry whether governments would be able to pay their debts. So in the course of 2009 the crisis thus took its next turn: a sovereign debt crisis. Its most prominent victim was Greece and with it the euro system. In terms of economic policy, there has been a shift towards austerity.

In early 2010 Greece faced punitive interest rates on its (public) debt issues. Greece had fudged public debt statistics (with the help of leading Wall Street banks) and now had difficulties refinancing its debt. Indeed, what had been exposed was a fundamental flaw in the construction of the euro system. With exchange rates frozen, the southern countries had, despite much lower inflation since adopting the euro, slowly but steadily lost competitiveness to Germany and its economic satellites. Germany's net exports amounted to more than 5% of GDP, achieved largely by wage suppression and, consequently, low inflation rates (Lapavitsas *et al.*, 2010). The euro area had no instruments to deal with the internal imbalances that emerged, other than trusting in labour market flexibility to adjust price levels in the nations of the euro area to bring about stability (Stockhammer, 2011B).

Whilst the Greek crisis could be blamed on fiscal deficits, the structural problems of the euro area were illustrated by the Irish crisis shortly thereafter. Ireland had government surpluses before the crisis but still needed a huge rescue package (€85 billion, more than half of Irish GDP). As in Greece, the rescue package was really one for the European financial sector rather than for states. Ireland had experienced an enormous real estate bubble that burst and effectively bankrupted its banks. Because of the bank bailouts, Irish debt soared by 40 percentage points of GDP from 2007 to 2010. Literally all of the obligations of the bust Irish banking system were guaranteed (Eichengreen, 2010).

The euro crisis is still going on at the time of writing. Whilst the economic situation is desperate in Greece, the bigger danger for the euro is posed by Italian and Spanish debt markets. But the underlying problem is a European one: European countries have given up on independent monetary policy, but there are no effective institutions and fiscal transfers in place that would stabilise these countries in times of crisis. Rather, the crisis is amplified by pro-cyclical austerity policies that are increasingly imposed by Brussels and Berlin.

3. The debate on causes of the crisis

Many contributions to the debate on the causes of the crisis emphasise microeconomic factors. They come in different versions. First, there are contributions that highlight incentives for bank managers that encourage risk taking (Roubini and Mihm, 2010) and the extensive use of statistical models that were aimed at diversifying risk and equated risks with past volatility (based on short time series) and underestimated the correlation of risks in the event of a crisis. These arguments discuss problems within the private sector and, typically, assume rational behaviour. Second, there is group of arguments highlighting wrong incentives created by government institutions. A prime example is the Basle II accord, which is thought to have created incentives for private banks to shift activities off-balance to minimise adherence to capital requirements. Rajan (2010) argues that successive US governments have encouraged lending to the poor through state-backed mortgage refinancing institutions. Implicitly these arguments assume rational behaviour on the part of private actors. Third, there is a growing behavioural finance literature that suggests that people, even financial investors, often don't act rationally and are prone to irrational exuberance (Akerlof and Shiller, 2009).

Because modern economics is dominated by a microeconomic approach, it is perhaps not surprising that the macroeconomic dimension is less prominent. Two factors stand out in the debate. First, there is a growing interest in debt-cycle and debt-deflation models (Jordá *et al.*, 2011; Borio, 2012; Eggertsson and Krugman, 2012). Rising property prices (in the USA) are a key element, helping engender a substantial rise in household debt. The private savings ratio had been on a declining trend in the decades before the crisis—consumption was in part being financed by rising debt. Rising house prices were also central for the (residential) investment boom that parts of the USA, Spain and Ireland had witnessed.

Mainstream economists try to explain this increase in consumption assuming rational. The falling saving rates were first explained by a wealth effect due to the stock market boom. In the late 1990s a 5% marginal propensity to consume out of financial wealth was often quoted (with some more qualification for European countries; e.g., Boone *et al.*, 1998). The stock market crash in 2000, however, did not result in a slowdown in consumption growth. The unabated consumption boom in the USA was then explained by booming house prices. Residential property was now identified as the key source of the wealth effect because it is more widely accepted as collateral. Case *et al.* (2001), Catte *et al.* (2004) and Girouard *et al.* (2006) find substantially higher marginal propensity to consume out of property wealth than out of financial wealth.

A second macroeconomic factor that has received widespread attention has been the rising international trade imbalances and increases in capital flows. The USA had experienced massive capital inflows (and trade deficits) prior to the crisis. There is no consensus as to whether trade imbalances or savings decisions drove capital flows or whether capital flows have been driving asset prices and macroeconomic performance, but there is a widespread perception that international imbalances had something to do with the crisis. The 'savings glut' hypothesis of Bernanke (2005) essentially blamed Southeast Asian central banks for the imbalances (as if the inflows were forced on the USA). Borio and Disyatat (2011) argue that capital flows are due not to savings decisions but to portfolio decisions and that they are prone to large swings because of what they call an excess elasticity of the financial system. Without much theoretical ado, Reinhart and Reinhart (2008) have shown that episodes of capital inflows ('capital flow bonanzas') typically lead to speculative bubbles on financial markets and property markets and, ultimately, to financial crises.

Figure 1 graphically summarises the macroeconomic mechanisms of the crisis that have been highlighted in the literature. Changes in the financial system, due to the deregulation (or wrong regulation) allowed for a bubble on financial and property markets, which in turn allowed for the massive increase in household debt. Rising household debt levels fuelled consumption expenditures and residential investment and thus led to economic growth that also resulted in current account deficits. The resulting capital inflows, in turn, helped keep interest rates low and fuelled the bubbles.

There is disagreement about the microeconomic dimension for these developments. These range from neoclassical approaches that highlight government (regulation failure); behavioural economics, which highlights irrational behaviour; to post-Keynesian approaches that highlight, in the tradition of Hyman Minsky, the intrinsic and endogenous instability of the financial system, which has been amplified by financial deregulation. Some commentators have emphasised a parallel between the rising inequality of the 1920s and the present crisis (Livingston, 2009; Wisman and Baker, 2010). The discussion that follows presents a post-Keynesian and regulationist framework for the inequality argument and substantiates some the channels empirically.

4. Rising inequality

Income distribution has experienced dramatic changes in thepast decades. There are remarkable differences across countries. Since 1980 (adjusted) wage shares have fallen by some 10 percentage points in continental European countries, and even more in Japan (Figure 2). The decline in the USA and the UK was moderate and is around 5 percentage points. The Anglo Saxon countries, on the other hand, experienced a much more dramatic change in personal income distribution (Figure 3; Atkinson et al 2011). In the USA the top 1% of the income distribution has increased its share in national income from 8% (1980) to more than 21% (2005). Developments in other English-speaking

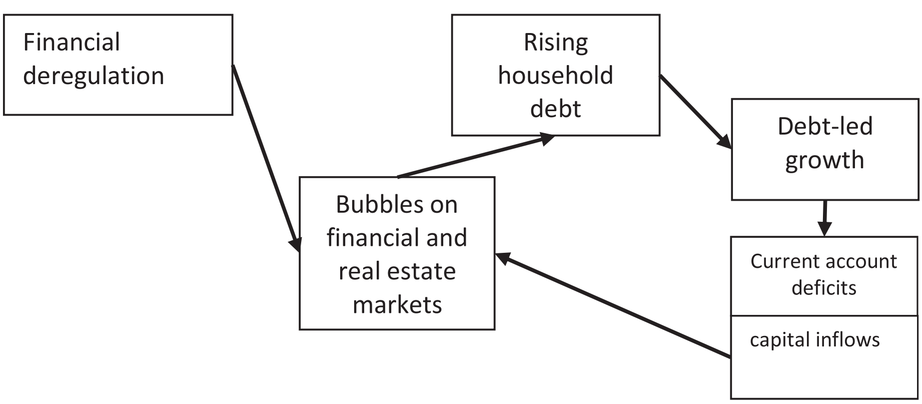

Fig. 1. *The standard view of the crisis.*

countries are similar. In continental European countries and Japan, personal income has become more unequal, but to a much more moderate degree. The dramatic rise in personal inequality is, to a significant extent, due to sharply rising management remuneration (in English-speaking countries). These are counted as labour costs in the national account and thus form part of the wage share. If management salaries were counted as distributed profits, that is, adjusting the US wage share for the wage payments of top income percentile, it looks much more like European wage shares.[1] Overall, increasing inequality has thus resulted in stagnating incomes for the working classes (in the USA real median wages have grown by a total of 2.8% in the quarter century from 1980 to 2005; OECD, 2008), whereas profit incomes have increased sharply, even as the form that this increase has taken differs across countries.

These dramatic changes in income distribution still await satisfactory explanation. Several studies have tried to quantitatively identify its causes. Remarkably, recently several mainstream studies have addressed the issue of changes in functional income distribution. The IMF (2007A) and European Commission (2007) identify technological change as the main determinant of changes in the wage share in OECD countries; globalisation is considered a secondary factor. Financialisation has been highlighted by the ILO (2008), though without econometric evidence. Rodrik (1998), Harrison (2002) and Jayadev (2007) showed for a sample of developing and developed economies that globalisation has had negative effects on the wage share. Onaran (2009) shows for four emerging economies that financial crisis have long-lasting effects on income distribution. Stockhammer (2013) performs a panel analysis for 71 developing and advanced economies and finds that financialisation, globalisation and welfare state retrenchment all have contributed to falling wages shares and that technological change only had moderate effects.

5. Rising inequality and the causes of the crisis: four channels

There is an obvious parallel between the present crisis and that of the 1930s: both were preceded by sharp increases in inequality. This has led some authors to speculate about a possible connection between the two phenomena (Livingston, 2009), but few studies detail the causal relation. This section discusses four channels through which rising inequality has contributed to the imbalances that caused the crisis. These channels operate in interaction with financial factors. The explanation has some similarities with Hein (2012) Horn and van Treeck (2011); their relation to the literature is discussed in Section 6.

Channel 1: Rising inequality has led to stagnating domestic demand, namely consumption demand

Section 4 presented evidence for the dramatic changes in income distribution that occurred in the past 30 years. What are the macroeconomic effects of this redistribution? More precisely, what are its effects on aggregate demand? First, other things equal, one would expect a falling wage share to have a negative effect on consumption demand: wage earners, especially the poor, will have a higher consumption propensity than recipients of profit incomes. Second, a falling wage share, that is, a rising profit share, ought to have positive effect on investment expenditures (at least for a

[1] Glyn (2009) presents wage shares corrected for top incomes for the USA and Dünhaupt (2011) for selected years for Germany. Mohun (2006) presents wage shares for non-supervisory workers.

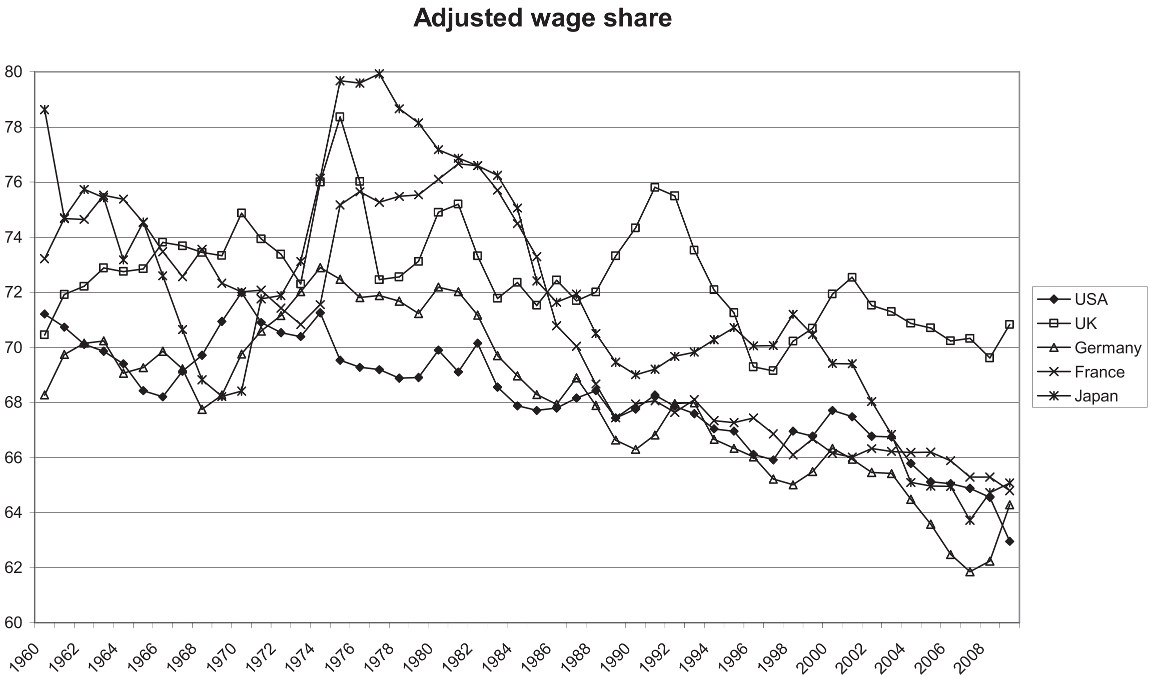

Fig. 2. *Adjusted wage share in major economies.*
Source: AMECO (http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm).

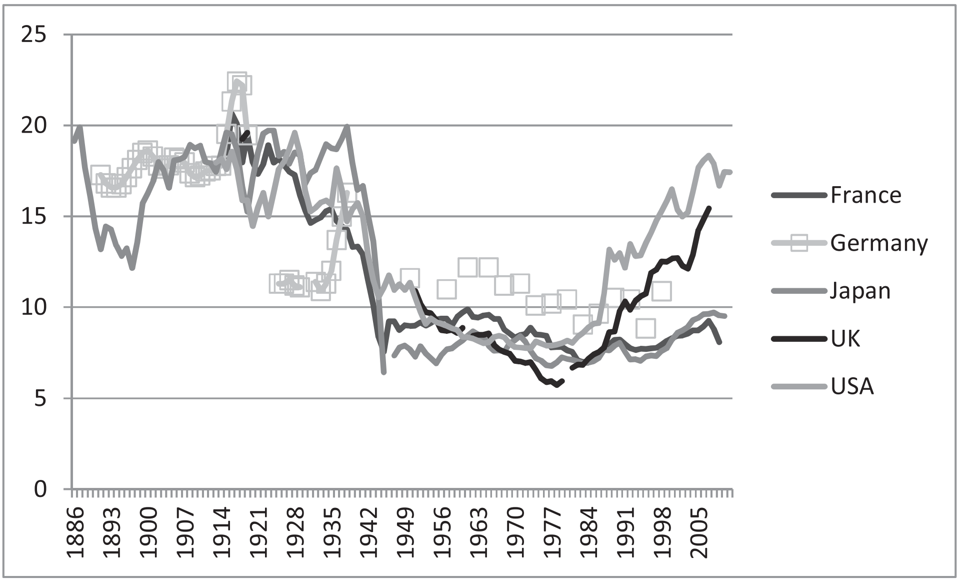

Fig. 3. *Income share of the top 1% of the income distribution in USA, UK, France, Sweden and Japan.*
Note: There is a (minor) break in the UK series in 1990.
Source: World Top Incomes Database, http://g-mond.parisschoolofeconomics.eu/topincomes (accessed 24 February 2012).

given level of demand). Third, a falling wage share in any one country ought to have a positive effect on net exports as competitiveness increases. This last effect, however, is not relevant in our context, as wage shares have fallen in all countries. The total or net effect of a change in wage share on aggregate demand is theoretically ambiguous and depends on the relative size of the partial effects. Bhaduri and Marglin (1990) proposed a post-Kaleckian macro model that encompasses these three effects. It allows for aggregate demand to be either wage-led or profit-led. A wage-led demand regime is one where an increase in the wage share leads to higher aggregate demand, which will occur if the consumption effect in larger than the investment and net export effect. A profit-led demand regime is one where an increase the wage share has a negative effect on aggregate demand. The Kaleckian hypothesis is that (at least as far as the domestic components are concerned) demand is wage-led.

This model has inspired a series of empirical studies, including Bowles and Boyer (1995), Stockhammer and Onaran (2004), Naastepad and Storm (2006/7), Hein and Vogel (2008), Stockhammer and Stehrer (2011) and Onaran and Galanis (2012). For example Stockhammer *et al.* (2009) find a consumption differential of around 0.4 for the euro area. Thus the decline in the wage share by around 10 percentage points would have led to a reduction of consumption by 4 percentage points of GDP.

The effects of changes in personal income distribution on consumption demand are more straightforward, as standard consumption theory predicts that the poor will have a higher marginal consumption propensity than the rich. To illustrate, Stein (2009) reports that for Germany, in 2007 the top quartile had an average saving rate of 15.8%, the second quartile of 9%, the third of 8% and the bottom quartile 4.1%. Indeed, saving differentials across income groups have increased, with the difference between the top and the bottom quartile increasing from 5.5% in 1995 to 11.7%. The increase in the saving differential is, according to Stein, due to increasing inequality in this period. Brenke (2011) argues that rising inequality has been an important contributing factor to Germany's weak consumption demand.

Channel 1 argues that rising inequality has, other things equal, a negative effect on consumption expenditures and thus on aggregate demand. Other things, however, were not equal during neoliberalism.

Channel 2: The deregulation of international capital flows has relaxed the external balance constraint and allowed countries to run larger current account deficits and surpluses. This has allowed for the development of two distinct growth models: a debt-led growth model that came with a consumption boom and current account deficits, and an export-led growth model.

Figure 4 plots the standard deviation of current account positions of OECD countries, which is a measure of international imbalances. This illustrates that imbalances did not occur recently but are part of a longer term trend: the liberalisation of capital flows after Bretton Woods did not lead to stable exchange rates, but to growing international imbalances because exchange rates are increasingly determined by capital flows rather than trade balances. Because capital flows often have financial motives and are typically pro-cyclical, the deregulation of international capital flows has loosened external trade constraints. It has allowed countries to run larger current account deficits for longer periods (compared to the Bretton Woods period). Reinhart and Reinhart (2008) show that episodes of strong capital inflows (capital flow bonanzas) usually come with speculative bubbles on financial and property markets and typically end in recessions.

Financial globalisation has thus ironically increased the room for different developments across countries. Current account imbalances can be maintained for longer—essentially as long as markets trust the situation. This is the background to the emergence of two different growth models.

The imbalances at the eve of the crisis are well known. In 2007 Germany had a current account surplus of 7.5% of GDP; the USA had a deficit of 5.07% (OECD.stats,

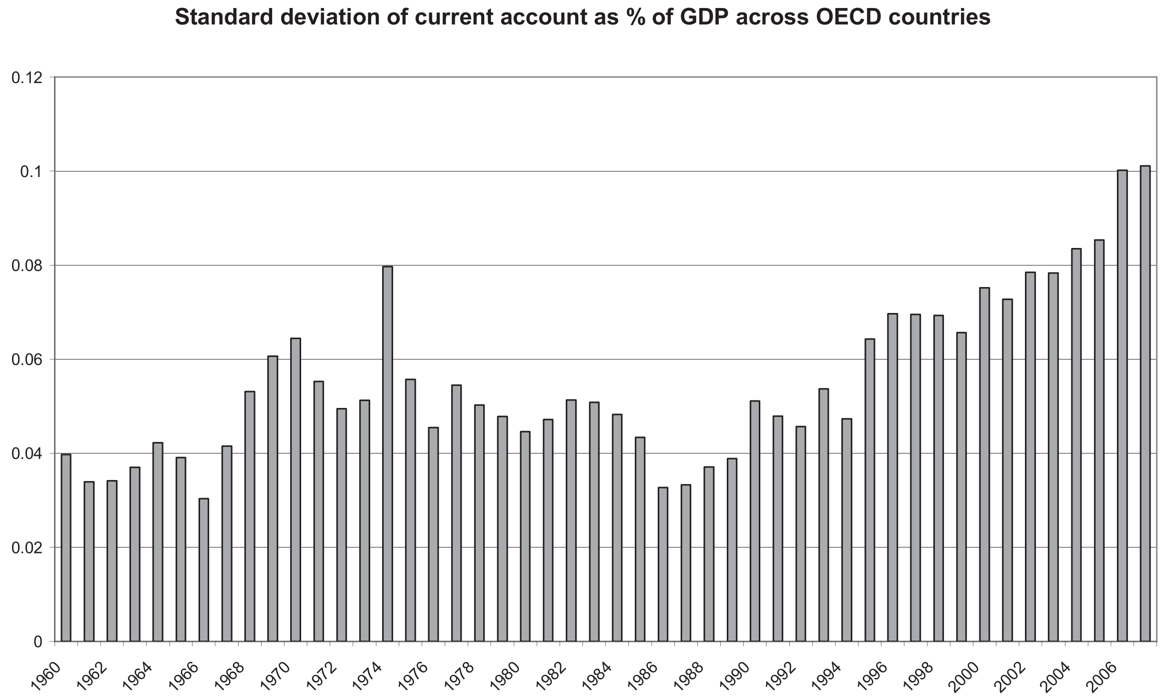

Fig. 4. *Standard deviation of the current account as % of GDP across OECD countries. Source:* AMECO.

Table 1. *Debt-led and export-led growth models in core and periphery*

	Growth model	
	Debt-led	Export-led
Core	USA, UK	Germany, Austria, Japan
Periphery	Greece, Ireland, Portugal, Spain	China

accessed February 2012). My hypothesis is that these imbalances are the expression and results of different growth models that developed in different countries. More specifically, I argue that countries can be usefully grouped in debt-led growth models and export-led growth models.[2] Importantly, I interpret these models as a reaction to the same underlying problem: stagnating domestic demand due to rising inequality. Table 1 classifies some important countries. Debt-led growth models exist in core as well as in peripheral countries. Whilst on a global scale the debt-led economies were at the core, within the euro area, the roles are reversed and the export-led economies are at the centre and debt-led growth took place in the periphery.

The historical paths that led the countries to their positions in Table 1 are complex, and this is not the place to explain them. Financial institutions as well as industrial

[2] What I label 'debt-led' has also been called financialised or finance-led models. The 'export-led' model has also been called neo-mercantilist. The conceptual distinction is found in Becker (2002). Hein (2011) points out that the export-led growth model also relies on increasing debt in the trade deficit countries. Nishi (2012) theoretically analyses the interaction of wage/profit-led demand regimes and debt-led/burdened regimes.

relations and industrial policy play a role. The USA and the UK have long been leading examples of market-based financial systems and they led the way in neoliberal financial deregulation of the 1970s and 1980s (Helleiner, 1994; Schaberg, 1999). In particular in the USA home ownership has a special economic and ideological connotation. For the countries of the European periphery, financial liberalisation was very much an outcome of European integration, one that imposed the liberalisation of capital flows and provided the framework for capital inflows (Grahl, 2009). There is a strong aspect of historical continuity on the side of the export-led models, but they have gained a new leverage due to international financial deregulation. Germany has long had an export-oriented growth strategy. The entire era of European integration is marked by German surpluses and subsequent revaluations. However, German demand composition only tilts decisively towards an export-led growth model after unification and the introduction of the euro (Horn *et al.*, 2010). In Japan the export-led growth model is arguably a reaction to its debt-led growth model going into reverse after 1992 (Peck and Miyamachi, 1994). In the emerging economies of Southeast Asia, the model of development has had a strong export orientation (Amsden, 2001; Chang, 2002), but export-led growth has become more pronounced in reaction to the humiliating experience of the crisis of 1997/98 and, certainly in the case of China, the result of strategy of under-valuation to accumulate reserves (Hung, 2008; Zuh and Kotz, 2011). UNCTAD (2008, chapter 3) points out that under-valuation has been an effective development strategy in many cases.

I suggest a flexible concept neoliberalism and financialisation that recognised that they can have different effects in different countries and interact in complex ways with existing institutions and strategies. Thus different neoliberal growth models can emerge. These growth models interact. In particular, capital account liberalisation permitted excessively large long-term financial flows into the financial markets of deficit countries, and this in turn permitted a much larger generation of debt flows to households to finance a consumption boom that otherwise would not have been possible. It also allowed a second group of countries to pursue mercantilist stratgies without relying on domestic credit booms.

Given the contrasting current account positions, it is hardly surprising that countries have different compositions of final demand. Figure 5 illustrates the stark difference in the development of consumption shares across countries. Whereas debt-led economies have typically experienced a substantial increase in the consumption share, export-led economies have experienced a decline in the consumption share.

Increases in the consumption share have typically been accompanied by increases in household debt. Table 2 shows the level of household debt in percent of GDP as well as its change from 2000 to 2008. I focus on the change in household debt rather than on its level, because, arguably increases in debt (rather than a level of debt) can feed consumption expenditures. For the stability of the growth regime, of course the change as well as the level of debt may be important. Whilst household debt declined in Germany from 2000 to 2008 by 11 percentage points of GDP (and increased in Austria by a moderate 7 percentage points), household debt rose by 26 percentage points in the USA and 28 percentage points in the UK. In peripheral Europe the increases were even sharper (though levels in Mediterranean Europe were usually low). In Ireland it rose by 61, in Spain by 33 percentage points.[3]

[3] I was unable to find comparable data for Japan. Girouard *et al.* (2006, Figure 1) report falling household debt levels from 1995 to 2004.

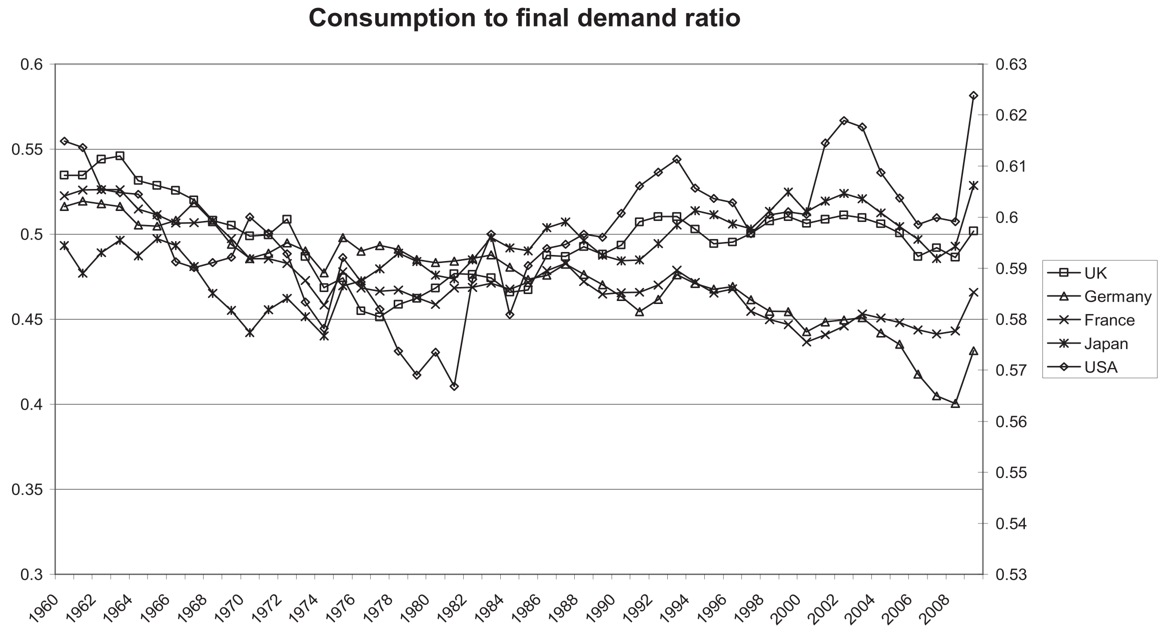

Fig. 5. *Consumption as a share of final demand in the USA, UK, Germany, France and Japan.* *Source:* AMECO.

Table 2. *Household debt (% of GDP)*

	2000	2008	Change 2000–8
USA	70.21	96.35	26.13
UK	75.16	107.43	32.27
Ireland	51.55	114.26	62.71
Greece	19.83	55.29	35.46
Spain	54.22	88.06	33.84
Portugal	74.96	102.34	27.38
Italy	35.29	53.61	18.32
Germany	73.41	61.70	-11.71
Austria	47.13	55.04	7.91
Switzerland	74.76	77.70	2.94
Netherlands	86.98	119.81	32.83

Note: Ireland 2001–8.
Source: Eurostat, expect USA (Flows of Funds).

Overall, my crude classification in debt-led and export-led growth models seems consistent with the data: countries with current account deficits are also those with higher increases in household debt. The USA and the UK on one side and Germany and Japan on the other are prime examples of these growth models. Hein and Mundt (2012) offer a more detailed analysis of debt-led and export-led growth models, also distinguishing two intermediate cases: domestic demand-led regimes and weakly export-led regimes. The basic classification is also helpful in understanding developments in Greece, Portugal, Ireland and Spain. The Irish case admittedly is somewhat more complicated because Ireland had at the same time current account deficits and net export surpluses, the difference being explained by repatriated profits. The Irish external position deteriorated in the decade prior to the crisis. Several countries would, however, not fit neatly into this dichotomy, for example, the new member states in

Central and Eastern Europe, but also the Netherlands and Denmark, which seem to have had, at the same time, sharp increases in household debt and export surpluses. Notably these are small economies.

Channel 3. Rising inequality contributed to household debt (in the debt-led models).

The distribution of household debt is an under-researched topic. Primary data are often not readily available and, where they are, are usually not reported in a form that would encourage distributional analysis. For the USA, data are available and will be discussed.

In the literature there are opposite views on the distributional dimension of rising household debt in the USA. On the one hand, Barba and Pivetti argue that '*rising household indebtedness should be seen principally as a response to stagnant real wages and retrenchments in the welfare state, i.e. as the counterpart of enduring changes in income distribution*' (Barba and Pivetti, 2009, p 114); rising inequality has thus contributed to household debt in that the poor were driven into debt by declining wages and social services. On the other hand, it has been argued that rising household debt, and more precisely falling saving rates, is due to the behaviour of the rich. Maki and Palumbo claim that 'all of the consumption boom really can be attributed to the richest groups of households' (Maki and Palumbo, 2001, p 22). This argument has been cited widely, including by Marxist authors (Brenner, 2003; Glyn, 2006). Whilst rising household debt is related to rising inequality in this story, it is not the poor who are accumulating debt, but the top end of the distribution.

The study by Maki and Palumbo was one of the first on this topic. They analyse wealth effects in the consumption behaviour of US households based on data of the Survey of Consumer Finances (SCF) from 1992 to 2000. The SCF also formed the basis for later studies that yielded different results. Some comments are in order. First, their study focusses on saving rates rather than debt levels. Whilst it is tempting to assume that the groups that reduced their saving rates are also the ones whose debt levels increased, this need not be the case. Second, their study focusses on the 1990s, that is, the period in the run-up to the dot-com bubble. In this period, arguably gains in wealth were concentrated in financial assets that are more highly concentrated than the gains in housing wealth that took place in the 2000s. Third, later studies are unable to replicate the findings of Maki and Palumbo. Bibow (2010) finds that the decline in the saving can be attributed to homeowners. Cynamon and Fazzari (2013) present estimates for the saving propensity for the top 5% and the bottom 95% of the income distribution (for the USA) and find evidence that the saving rates for the top 5% of the income distribution have been stable, whereas those for the bottom 95% have increased sharply. This coincided with the stagnation of the income of the bottom whilst incomes at the top increased. Wolff (2010) offers extensive analysis of primary data. He argues that the increase in household debt is due mostly to the attempts of middle-class households to maintain their consumption position in the face of falling or stagnating real wages. Maintaining social status was only possible through increasing debt.

Kennickell (2009) gives an extensive overview of the results of various cohorts of SCF data from 1989 to 2007. I use this study to illustrate the different points. Table 3 summarises the share of debt held by different income groups. Kennickell groups them into the bottom 50%, the 50–90th percentile, the 90–95th percentile, the 95–99th percentile and the top percentile. Looking at the distribution of debt over time, the overall impression is one of stability. (Because the SCF is based on a small sample, not all fluctuations necessarily reflect changes in the underlying population.) The bottom 90% of the distribution had 74.9% of all household debt in 1989 and 73.3% in 2007.

Debt has to be serviced out of current income. The distribution of current income had changed in the relevant period. Table 4 thus summarises the debt-to-income ratio by income group. This gives a very different picture. There is a clear trend: relative to income, debt has increased more sharply in lower income groups. The debt-to-income ratio for the bottom 50% increased from 61% (1989) to 137% (2007); for the next 40 percentiles it increased from 81% to 148%; whilst the debt-to-income ratios also increased for the top 10% of the income distribution, the dynamic was much weaker Table 5.

Thus whilst the distribution of debt has remained rather stable, debt relative to income has increased more for lower income groups. In this sense the hypothesis that lower income groups have been driven into debt by falling wages (and social services) is consistent with the data.

Channel 4. Rising inequality has increased the propensity to speculate.

There is a widespread perception that increasing inequality, and in particular the growth of small group of super-rich individuals, has contributed to the total ‘propensity to speculate’. The intuition behind this perception is that with increasing income, the consumption possibilities get exhausted and speculative use of wealth increases. For example, Huffschmid (2002) argues that increasing inequality has resulted in ‘excess liquidity’ that has had an inflationary effect on the prices of financial assets. The term *excess liquidity* is rather confusing in this context, but the intuition is clear enough: because of the growth of the super-rich there is an increased volume of wealth that is looking for risky investment.

However, there are few empirical studies on this topic. This is due to conceptual as well as empirical difficulties. Conceptually it is difficult to operationalise the concept of speculation. I use the term pragmatically, in the sense of risky investment strategies. Empirically the problem is that data availability on wealth distribution are extremely poor.

SCF data confirm that rich household hold riskier assets. In 2007 the top 10% of the income held 60.5% of the holdings of checking, savings, money market and call accounts and 50.3% of the holdings of certificates of deposits, but 90.4% of direct

Table 3. *Debt shares by income group, USA 1989–2007*

	Percentile of the distribution of family net worth				
	0–50	50–90	90–95	95–99	99–100
1989	23.4	51.5	9.9	9.8	5.4
1992	25.7	46.7	9.1	12.4	6.1
1995	30.4	45.9	8.6	9.0	6.1
1998	28.8	45.3	8.2	12.2	5.5
2001	26.0	48.0	8.6	11.5	5.9
2004	24.2	48.6	8.3	11.5	7.3
2007	26.7	46.6	7.7	13.7	5.3

Source: Kennickell (2009).

Table 4. *Debt-to-income by income groups, USA 1989–2007*

	Percentile of the distribution of family net worth				
	0–50	50–90	90–95	95–99	99–100
1989	0.61	0.81	0.71	0.5	0.25
1992	0.72	0.88	0.8	0.77	0.57
1995	0.89	0.92	0.77	0.67	0.43
1998	1.0	0.97	0.92	0.81	0.4
2001	0.89	0.99	0.73	0.59	0.32
2004	1.14	1.36	1.1	0.91	0.6
2007	1.37	1.48	1.07	0.95	0.37

Source: Kennickell (2009).

Table 5. *Distribution of financial assets across income groups, USA 2007*

	Percentile of the distribution of family net worth				
	0–50	50–90	90–95	95–99	99–100
Holdings of checking, savings, money market and call accounts	6.5	33.0	11.4	26.2	22.9
Holdings of certificates of deposit	3.1	46.6	11.5	23.7	15.1
Direct holdings of publicly traded stocks	0.6	9.0	8.0	30.5	51.9
Mutual funds other than money market mutual funds, and hedge funds	0.4	11.6	10.3	30.9	46.7

Source: Kennickell (2009), Table A3a.

holdings of stocks and 87.9% of bonds, 51.9% of mutual funds and hedge funds (Kennickell, 2009, Figure A3a). This lends itself to the conclusion that a shift in wealth distribution in favour of the rich would also result in a shift towards riskier portfolios of financial assets. Things are more complicated regarding to non-financial wealth: principal residences are the largest form of non-financial wealth and the bottom 90% hold (in 2007) 61.5% of that wealth—and they have turned out to be quite a risky asset.

Dymski (2010) extends a Minsky approach to analyse the subprime crisis and highlights a particular form of inequality: racial inequality. He argues that subprime loans were developed for black communities that had hitherto been excluded from access to regular credit. There is thus a unique role that inequality played in the subprime crisis.

Lysandrou (2011A, 2011B) highlights one particular mechanism by which rising (wealth) inequality has contributed to the crisis. Lysandrou argues that, first, the crisis broke out in the market for derivatives on subprime loans. Second, this market segment developed so substantially because hedge funds demanded these high-risk and (at the time it seemed) high-return assets. These assets are not off the shelf but were created by investment banks to fit the demands of hedge funds. Third, hedge funds are by and large an investment vehicle for the super-rich (at a later stage institutional investors increasingly invested in hedge funds): ‘the chief driving force behind the creation of the structured credit products that triggered the crisis was a global excess demand for investable securities and that key to the build-up of this excess demand was the huge accumulation of private wealth' (Lysandrou 2011A, p 3).

Hedge funds held about half of all collateralized debt obligations (Lysandrou, 2011A, Figure 9). The assets managed by hedge funds grow four-fold between 2000 and 2007, which explained their strong demand for exotic financial instruments. Because of their high minimum investment requirements, hedge funds are primarily for super-rich individuals and, more recently, institutional investors, who want to hold some high-risk assets. Whereas hedge funds were essentially catering to rich individuals in 2000, by 2007 almost half of their assets came from institutional investors. Lysandrou identifies the super-rich as what is called high net wealth individuals (HNWIs), who own net wealth of more than US$1 million. HNWIs own about one fifth of all financial assets, but more than half of alternative investment assets, which include collateralized debt obligations and other derivatives (Lysandrou, 2011B, Table 1). Lysandrou concludes: 'A major policy implication that follows from the above analysis is that the world's wealth has to be more equitably distributed if global financial crises are to be avoided' (Lysandrou, 2011B, p 204).

Lysandrou probably overstates the role of hedge funds in the creation of subprime securities. First, the share of hedge funds in these assets was below 50% in 2006 (Lysandrou, 2011A, Figure 9) and institutional investors increased their role within hedge funds after 2000 (Lysandrou, 2011A, Figure 13). Second, several other institutions (namely, investment banks and credit rating agencies) also played a key role in engineering the securities. Nonetheless, he deserves credit for pioneering the analysis of wealth inequality on financial innovation and the demand for risky assets.

6. Overall argument and contextualisation in the literature

This article has investigated the question of whether rising inequality has contributed to the imbalances that erupted in the present crisis—in other words, whether rising inequality is a cause of the crisis. I have discussed four channels through which inequality may have contributed. This is not to be understood as an alternative to financial factors, but as a complementary explanation that highlights the interaction of financial and social factors. First, increasing inequality leads potentially to a stagnation of demand, since lower income groups have higher consumption propensity. Second, countries developed two alternative strategies to deal with this shortfall of demand. In the English-speaking countries (and Mediterranean countries), a debt-led growth model emerged, in contrast with the export-led growth model in countries such as Germany, Japan or China. These two growth models became feasible because financial liberalisation of international capital flows allowed for unprecedented international imbalances. Third, in debt-led countries, rising inequality contributed to the growth of debt as the poor have increased their debt levels relative to income faster than the rich. For the USA this can be clearly seen in debt-to-income ratios for different income groups. Financialisation has meant debt growth instead of wage growth. This growth model that is not sustainable. Fourth, increasing inequality has increased the propensity to speculate, that is, it has led to a shift to more risky financial assets. One particular aspect of these developments is that subprime derivatives, the segment where the financial crisis broke out in 2008, were developed to cater to the demands of hedge funds that manage the assets of the super-rich. Increasing inequality has thus played a role in the origin of the imbalances that erupted in the crisis as well as in the demand for the very assets in which the crisis broke out. My conclusion that increasing inequality, in interaction with financial deregulation, should be seen as root causes of the crisis. Figure 6 summarises the argument graphically.

How novel is the argument advanced in this article? The section will contextualise the four channels in the mainstream, Marxist and post-Keynesian literature. Mainstream economics regards the crisis foremost as issue of the financial sector (e.g., Blanchard, 2009; Brunnermeier, 2009; Roubini and Mihm, 2010); distributional considerations overwhelmingly do not enter the stage. However, there are some exceptions, in particular regarding the US experience. Rajan (2010) was one of the first to highlight the links between income distribution and the crisis. Rajan contends that rising income inequality induced governments to look for new ways to raise aggregate demand. The US administration fostered a new 'ownership society' by encouraging credit growth and, ultimately, subprime mortgages. According to this argument, it is not the rise in inequality itself that caused the crisis, but the government's reaction to rising inequality. This was interpreted by several economists as blaming the poor for the crisis. Acemoglu (2011) and Johnson (2011) replied in presentations and opinion pieces. They argue that the timing does not fit Rajan's story and that those parts of the (de)regulation of financial sector and the mortgage industry that are related to the crisis were due to the lobbying of the financial industry rather than concerns about inequality. Kumhof and Ranciere (2010) develop a DSGE model with investors and workers, both maximising lifetime utility. They simulate an increase in inequality, which leads to increasing leverage of workers, which is financed from increased savings from investors. The increased leverage leads to increased fragility, which eventually erupts in a higher number of defaults. Lending, in this model, is driven by savings; there is no asset price or property price bubble and no endogenous money supply.

Amongst the mainstream economists, Joseph Stiglitz (2012) has made the strongest case for a role of inequality in the crisis. For Stiglitz the negative effects of rising

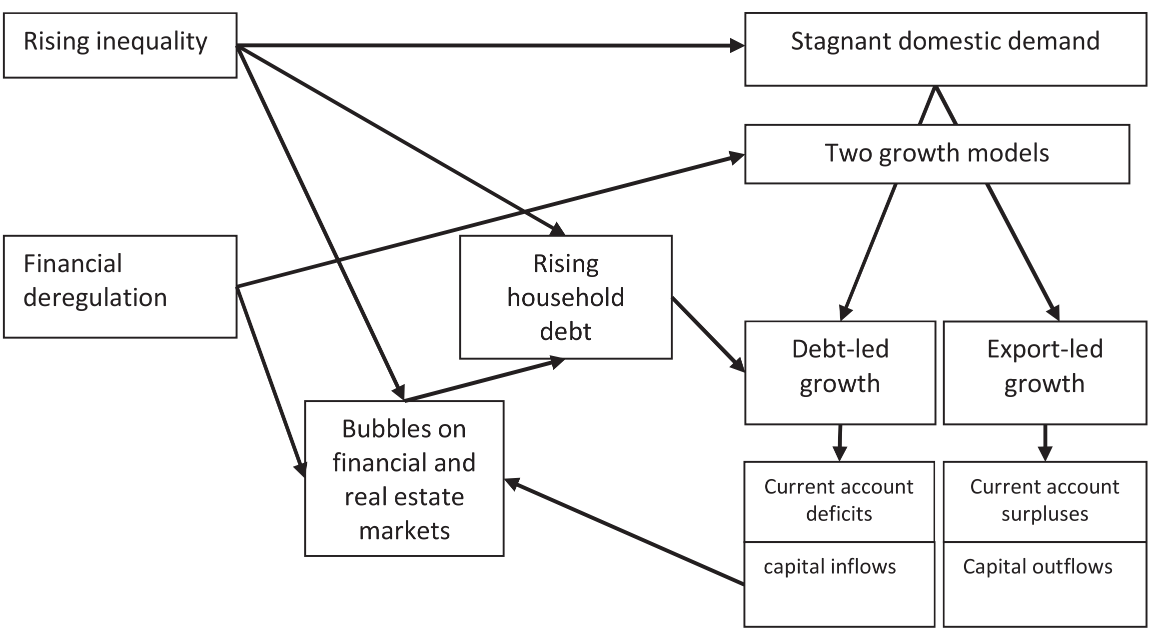

Fig. 6. *Rising inequality and financial deregulation as causes of the crisis.*

inequality are mostly to be found on the supply side (such as negative effects on human capital due to limited access to higher education) and on its effect on the political process via lobbying, but he also mentions demand effects (see also Fitoussi and Stiglitz, 2009).

All these mainstream contributions focus on what this article discusses as channels 1 and 3 (inequality driving debt); all of them essentially deal with the US experience. There is no recognition of the emergence of different growth regimes and of a role of inequality in contributing to international imbalances (channel 2). The exception here is Kumhof *et al.* (2012), who extend the Kumhof and Ranciere model to a two-country case where the rich in one country finance the debt of the poor in another country that exhibits capital inflows. I am not aware of mainstream contributions that discuss the link between inequality and speculation (channel 4).

Amongst the Marxist literature, much of the argument is contested. In Marxist terminology my argument is a specific version of under-consumptionist crisis theory. Some Marxists would dispute the overall picture and regard a declining profit rate as the prime cause underlying the crisis. Brenner (2003) argues that profits rates have been declining due to over-accumulation driven by increased competition and globalisation. Dumenil and Levy (2011) argue that profit rates have recovered since the early 1980s. Basu and Vasudevan (2013) offer the most careful analysis of the development profit rates for the USA and find a recovery in the neoliberal period for all but a historic cost measure of the capital stock. Marxists also have a different assessment of the effect of increasing inequality on aggregate demand. Dumenil and Levy (2011, p 151) and Brenner (2009, p 191) argue that the declining saving rate in the USA has been driven by the behaviour of the top income groups. Increasing inequality stimulated demand in this argument.

The Marxist literature rarely distinguishes between different growth regimes. In part this may be due to the implicit strong focus on US developments. In Brenner (2003, 2009) and Dumenil and Levy (2011) international imbalances play an important role, but surprisingly little is said about the developments in, say, China and Germany beyond their effect on the USA. Dumenil and Levy (2011, chapters 10 and 11 and Appendix A) distinguishes between different regimes according to the ability of countries to create domestic consumer credit and their ability to get international financing. At no point is the situation in surplus countries explained by distributional factors. Ivanova (2011) rejects Keynesian explanations of the crisis, which she sees centred around financial deregulation, and argues that financialisation is the expression of the over-accumulation of capital due to globalisation. Rising inequality does not play an active role in this story, but is a side effect of financialisation. There are discussion of German neo-mercantilism in Marxist analyses of European integration (e.g., Bellofiore *et al.*, 2011), but the export-led model is not perceived of as a genuine neoliberal growth model.

Amongst post-Keynesian economists the issue of income distribution has featured more prominently. The argument of this article, in particular regarding channels 1 and 3, is now widely accepted amongst post-Keynesian economists. Wade (2009), Horn *et al.*, (2009), Hein (2012), Palley (2012) and van Treeck and Sturn (2012) have put forward similar arguments.

The closest in the literature is Hein (2012), who identifies rising inequality, financial deregulation and global imbalances as the main causes of the crisis. His analysis, much like this article, is based on a Kaleckian approach and presents in-depth empirical evidence for these different growth regimes, also distinguishing two intermediate cases (Hein and Mundt, 2012). The centre of Hein's analysis is the effects of financialisation rather than income distribution. Horn and van Treeck (2011) offer a very similar but less in-depth analysis. Palley (2012) argues that what he calls 'emergency Keynesianism'—expansionary monetary and fiscal policies in crisis periods—is unlikely to succeed because it ignores the underlying problem, that of the structural lack of aggregate demand, caused by excessively low wages and overly large income dispersion. However, he does not provide systematic evidence for this claim. James Galbraith (2012) presents a novel measure of economic inequality and argues that inequality is due to financial rather than real forces. He repeatedly stresses inequality as a cause of the crisis, but is rather vague on the mechanisms and criticises the Bush administration and its drive for an ownership society for a deterioration of lending standards.

For the USA, Cynamon and Fazzari (2013) have made the most detailed empirical case for what we have called channel 3 in the USA; Barba and Pivetti (2009) make the general case for debt growth instead of wage growth.

Whilst there is long-standing critical post-Keynesian discussion of international monetary regime, issues of income distribution usually do not play a prominent role there. Several authors (e.g., Lucarelli, 2012) have analysed individual countries, particularly Germany, where wage suppression and a neo-mercantilist strategy have been highlighted. But this is rarely developed into a more general argument. Cowling *et al.* (2011) offer an analysis in the spirit of Galbraith, which highlights the role of corporate (US) power that has fostered unsustainable consumptionist tendencies and resulted in current account deficits. They argue that rebalancing will require industrial policies and confronting corporate power, but they do not analyse export-led regimes. Hein and Mundt (2012) take an approach close to the one in this article and distinguish between debt-led consumption boom, domestic demand-led, weakly export-led and strongly export-led mercantilist regimes by analysing the composition of demand growth and household debt in the decade prior to the crisis.

It is surprisingly difficult to find in-depth discussion of the link between rising inequality and financial speculation. (Lysandrou 2011A, 2011B) argues that the increasing wealth inequality promoted financial instability as it fuelled hedge funds which pushed for the development of high-yield (and thus high-risk) financial assets. Wisman and Baker (2010) make the argument that rising inequality decreased real investment opportunities and thereby increased speculation. The make their case based on a comparative historical discussion of the 1929 and 2008 crises and highlight that in the 2008 crisis speculation in particular came with securitisation.

Tridico (2012) offers an analysis in the tradition of the French regulation theory that is broadly in line with the argument made here, in particular as regards the analysis of the USA. Tridico offers a similar analysis of debt-led growth (under the heading of 'finance-led growth') and highlights different degrees of financialisation across countries, but stops short of identifying other growth model. Thus my channels 2 and 4 play no role in his analysis. Similarly, Boyer (2013) discusses the shift from the Fordist compromise to the finance-led growth in an analysis that is similar to this one, but does not indicate a role for channels 2 and 4.

Overall, many elements of my argument can be found in the literature. In particular the link between inequality and rising household debt has become widely accepted amongst post-Keynesians and is also discussed at the critical fringes of the mainstream. Marxists often give differing accounts of the demand effects of rising inequality. The emergence of debt-led versus export-led growth regimes is much less widely recognised. Most of the related literature focusses on the experience of the USA. My approach differs, first, in systematically highlighting the link between distribution and demand formation, in particular the effect of inequality, and on debt and consumption growth. Second, I take an internationally comparative approach and highlight that different countries have adopted different strategies in dealing with the rise in equality. The US debt-led growth model is only one variant. Other countries have pursued export-led growth strategies. Both strategies do rely in rising imbalances (the former on rising debt ratios, the latter on rising trade imbalances). From the literature review, two topics for future research emerge: First, the interaction between the different growth regimes needs further analysis. In particular the contribution of capital inflows to asset and property price bubbles in advanced economies is under-researched. Second, the effect of inequality on financial innovation, speculation and fragility deserves a lot more attention than it has hitherto received.

7. Conclusion

My argument has direct implications for economic policy. A broad consensus exists that financial reform is necessary to avert similar crises in the future (even if little has yet changed in the regulation of financial markets). The analysis here highlights that income distribution will have to be a central consideration in policies dealing with domestic and international macroeconomic stabilisation. The avoidance of crises similar to the recent one and the generation of stable growth regimes will involve simultaneous consideration of income and wealth distribution, financial regulation and aggregate demand. This first element—the distribution of income and wealth—has not conventionally been incorporated in macroeconomic analysis. Put more bluntly, creating a more equal society is not an economic luxury that can be taken care of after the real issues, such as financial regulation, have been sorted out. Rather, a far more equitable distribution of income and wealth than presently exists would be an essential aspect of a stable growth regime: wage growth is a precondition of an increase in consumption that does not rely on the growth of debt. And financial assets are less likely to be used for speculation if wealth is more broadly distributed.

A more equitable distribution of income and wealth will involve changes in tax as well as wage policy. Reformed tax policies will include increases in upper income tax rates, rises in wealth taxes and the closure of tax loopholes and of tax havens (Shaxson, 2011). In the area of wage policy, far-reaching changes are necessary. Present policy prescriptions aim at cutting wages in a recession. But higher wage growth is a necessary aspect of a balanced economy. It can only be achieved by strengthening of labour union and collective bargaining structures.

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