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Financialisation, distribution, growth and crises – long-run tendencies

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Abstract: In this paper we review the empirical and theoretical literature on the effects of changes in the relationship between the financial sector and the non-financial sectors of the economy associated with 'financialisation' on distribution, growth, instability and crises. We take a macroeconomic perspective and examine four channels of transmission of financialisation to the macroeconomy: first, the effect on income distribution, second, the effects on investment in capital stock, third, the effects on household debt and consumption, and fourth, the effects on net exports and current account balances. For each of these channels we briefly review some empirical and econometric literature supporting the presumed channels, some theoretical and modelling literature examining the macroeconomic effects via these channels, and finally, we present small models generating the most important macroeconomic effects. We show that, against the background of redistribution of income at the expense of the labour income share and depressed investment in capital stock, each a major feature of financialisation, short- to medium-run dynamic 'profits without investment' regimes may emerge, which can be driven by flourishing consumption demand or by rising export surpluses, compensating for low or falling investment in capital stock. However, each type of these regimes, the 'debt-led consumption boom' type and the 'export-led mercantilist' type, contains internal contradictions, with respect to household debt in the first regime and with respect to foreign debt of the counterpart current account deficit countries in the second regime, which finally undermine the sustainability of these regimes and lead to financial and economic crises.

Keywords: financialisation, distribution, growth, instability, financial and economic crisis, Kaleckian models, current account imbalances

JEL classification: E12, E22, E24, E44, F41, G01

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1. Introduction

In this paper we provide a macroeconomic perspective on 'financialisation', as a long run trend which has dominated modern capitalism, to different degrees in different countries, roughly starting in the late 1970s/early 1980s in the US and the UK and later in other developed capitalist economies and also in emerging market economies. We will also link this trend with the recent financial and economic crises. From a macroeconomic point of view financialisation has affected long-run economic developments through the following channels (Hein 2012):

1. With regard to distribution, financialisation has been conducive to a rising gross profit share, including retained profits, dividends and interest payments, and thus a falling labour income share, on the one hand, and to increasing inequality of wages and top management salaries, on the other hand. The major reasons for this have been falling bargaining power of trade unions, rising profit claims imposed in particular by increasingly powerful rentiers, and a change in the sectoral composition of the economy in favour of the financial corporate sector.

2. Regarding investment in capital stock, financialisation has been characterised by increasing shareholder power vis-à-vis management and workers, an increasing rate of return on equity and bonds held by rentiers, and an alignment of management with shareholder interests through short-run performance-related pay schemes, bonuses, stock option programmes, and so on. On the one hand, this has imposed short-termism on management and has caused decreasing managements' animal spirits with respect to real investment in capital stock and long-run growth of the firm and increasing preference for financial investment generating high profits in the short run. On the other hand, it has drained internal means of finance for real investment purposes from the corporations, through increasing dividend payments and share buybacks in order to boost stock prices and thus shareholder value. These 'preference' and 'internal means of finance' channels have each had partially negative effects on firms real investment in capital stock, and hence also on the long-run growth potential of the economy to the extent that productivity growth is capital embodied.

3. Regarding consumption, financialisation has generated increasing potential for wealth-based and debt-financed consumption, thus creating the potential to compensate for the demand-depressing effects of financialisation, which were imposed on the economy via redistribution and the impact on real investment. Stock market and housing price booms have each increased notional wealth against which households were willing to borrow. Changing financial norms (conspicuous consumption, 'keeping up with the Joneses'), new financial instruments (credit card debt, home equity lending), and deterioration of creditworthiness standards, triggered by securitisation of debt and 'originate and distribute' strategies of banks, made credit increasingly available to low income,

low wealth households, in particular. This allowed for consumption to rise faster than the median income in several countries and thus to stabilise aggregate demand. But it also generated increasing debt-income ratios of private households and thus increasing financial fragility.

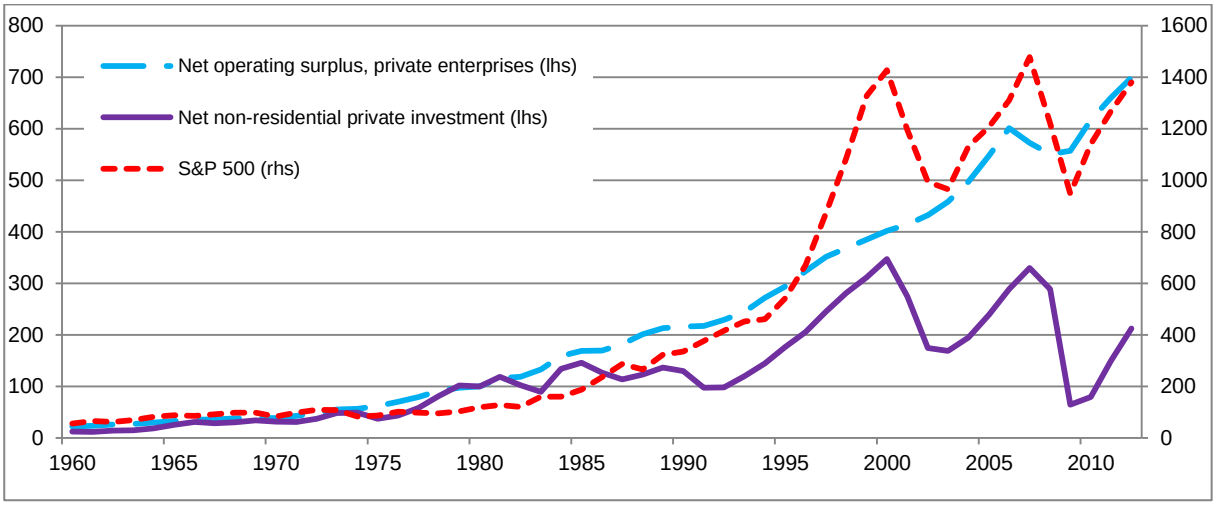
4. The deregulation and liberalisation of international capital markets and capital accounts, has created the potential to run and finance persistent current account deficits. Simultaneously it has created the problems of foreign indebtedness, speculative capital flows, exchange rate volatilities and related currency crises.

These characteristics of financialisation or 'finance-dominated capitalism' have led to the dominance of 'profits without investment' regimes in several countries during the pre-2007 crisis financialisation period, that is a long-run tendency of rising levels of profits (not only profit shares) but relatively weak investment in capital stock (Hein 2012, Chapter 6; Hein/Mundt 2012; van Treeck 2009b; van Treeck/Hein/Dünhaupt 2007; van Treeck/Sturn 2012). This is shown in Figure 1 for the US and in Figure 2 for Germany, as outstanding examples. In both countries investment and profits had increased broadly in line until the late 1970s/early 1980s. In the US the divergence of profits from investment started in the 1980s and was only interrupted during the new economy boom of the late 1990s. In Germany the divergence also started in the early 1980s and was briefly interrupted during the re-unification boom of the late 1980s/early 1990s.

'Profits without investment regimes' can be driven by flourishing consumption demand, by rising export surpluses or also by increasing government deficits, each compensating for low or falling investment in capital stock. This is so because from a macroeconomic perspective the following equation, derived from national income accounting, has to hold, as pointed out by Kalecki (1971, p. 82):

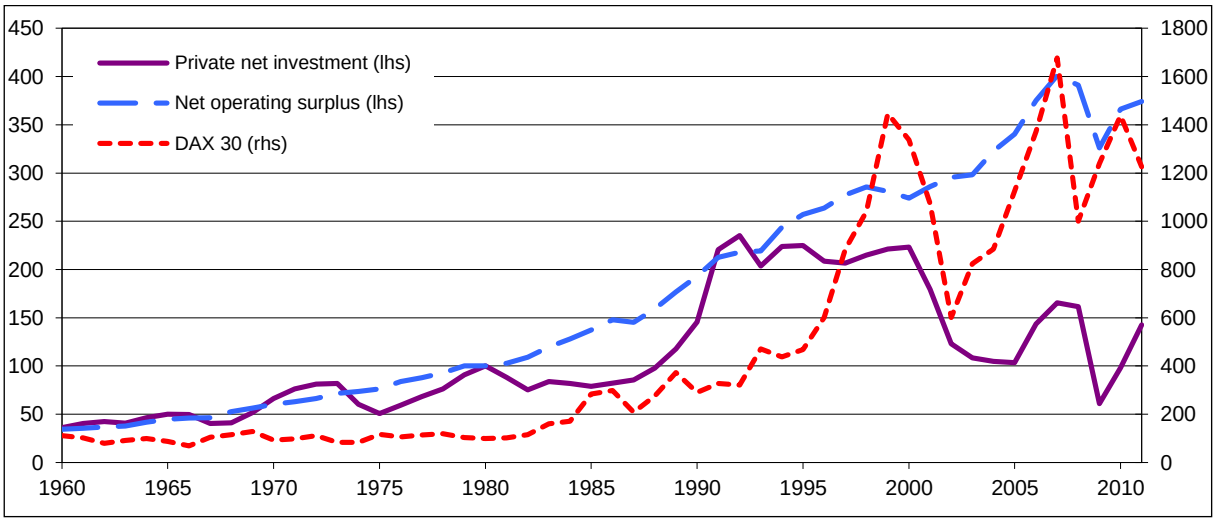
$$\text{Gross profits net of taxes} = \text{Gross investment} + \text{Capitalists' consumption} + \text{Government budget deficit} + \text{Export surplus} - \text{Workers' saving}$$

Figure 1: Investment, profits (Index 1980=100), and share prices, USA, 1960 – 2012



Source: Bureau of Economic Analysis (2013), Federal Reserve Bank of St. Louis (2013); authors' calculations.

Figure 2: Investment, profits (Index 1980 = 100), and share prices, Germany, 1960 – 2012



Source: European Commission (2012), Börse.de (2012), authors' calculations.

Empirically, several countries, like the US, the UK, Spain, Ireland and Greece, have relied on a 'debt-led consumption boom' type of development in the face of low investment in capital stock and re-distribution at the expense of labour incomes, making use of the increasing potential for wealth-based and debt-financed consumption generated by financialisation, Turning to the international dimension of financialisation, 'profits without investment' regimes can also be driven by net exports and current account surpluses. In the face of redistribution at the expense of (low) labour incomes, stagnating consumption demand and weak real investment, 'mercantilist export-

led' strategies, relying on nominal wage moderation and suppressed domestic demand, are thus an alternative to generating aggregate demand. This type of development has been found in countries like Austria, Belgium, Germany, the Netherlands, Sweden, Japan and China during the pre-2007 crisis financialisation period.[1]

Against the background of these basic macroeconomic tendencies of finance-dominated capitalism, rising current account imbalances at the global, but also at the European level, have developed, which then contributed to the world-wide Great Recession 2007-2009 and the euro crisis thereafter. The countries which have relied on debt-led soaring private consumption demand as the main driver of aggregate demand and GDP growth generated and accepted concomitant rising deficits in their trade and current account balances. The countries focussing on mercantilist export-led strategies as an alternative to generating demand have accumulated increasing surpluses in their trade and current account balances.

The financial crisis, which was triggered by over-indebtedness problems of private households in the leading 'debt-led consumption boom' economy, the US, could thus quickly spread to the 'export-led mercantilist' economies through the foreign trade channel (collapse of exports) and the financial contagion channel (devaluation of financial assets) and thus cause the world-wide Great Recession.

Based on stylized facts and econometric results obtained from a literature review supporting the relevance of the macroeconomic financialisation transmission channels mentioned above, we will provide an overview of theoretical models which have included these channels of transmission of financialisation into distribution and growth models. Basically, two types of models have been used so far: 1. demand-driven small analytical models,[2] and 2. large scale, so-called stock-flow consistent (SFC) models[3]. Whereas the first type of models allows for general analytical results regarding the distribution and growth effects of changes in parameters related to financialisation, in the second type the effects can only be obtained through numerical simulations. However, the advantage of the second type of models is that it can take into account the features of the financial and economic sectors of the economy in a more detailed way. Of course, both types are complementary and the results obtained should, in principal, not contradict each other. Small

[1] For the analysis of 'debt-led consumption boom' and 'export-led mercantilist' economies see, for example among others Hein (2012, Chapter 6), Hein/Mundt (2012), Stockhammer (2010a; 2010b; 2012a; 2012b), and van Treeck/Sturn (2012), with slightly different terminologies.

[2] See, for example Boyer (2000), Cordonnier (2006), Dutt (1995, 2005, 2006), Hein (2012), Isaac/Kim (2013), and Lavoie (1995, 2009).

[3] SFC models treating financialisation issues have been presented by Dallery/van Treeck (2011), Lavoie (2008), Skott/Ryoo (2008a; 2008b), van Treeck (2009a), and Zezza (2008), among others.

analytical models should be stock-flow consistent, too, and SFC models can be simplified, so that analytical solutions can be computed. Each of these model types allow the generation of different types of regimes, depending on the model parameters and coefficients in the behavioural equations: 'finance-led growth regimes', 'profits without investment regimes' and 'restrictive regimes' in the face of increasing dominance of finance and shareholders. And they allow for the treatment of the sustainability of certain regimes.

In this paper we will proceed as follows. In Section 2 we will review and interpret the effects of financialisation on income distribution. In Section 3 we will integrate the distribution effects with the effects on investment in capital stock and on consumption and will discuss the outcomes in a closed economy framework. Section 4 will then introduce the open economy dimension, and Section 5 will summarize and conclude.

2. Financialisation and redistribution of income since the early 1980s[4]

2.1. Empirical evidence

The period of finance-dominated capitalism has been associated with a massive redistribution of income. First, functional income distribution has changed at the expense of labour and in favour of broad capital income. The labour income share, as a measure taken from the national accounts and corrected for the changes in the composition of employment regarding employees and self-employed, shows a falling trend in the developed capitalist economies considered here from the early 1980s until the Great Recession. This is shown in Table 1, which presents cyclical averages in order to eliminate cyclical fluctuations due to the well- known counter-cyclical properties of the labour income share.

Second, personal income distribution has become more unequal in most countries from the mid-1980s until the late 2000s. Taking the Gini coefficient as an indicator, this is true for the distribution of market income, with the Netherlands being the only exception in the data set (Table 2). If redistribution via taxes and social policies by the state is included and the distribution of disposable income is considered, Belgium, France, Greece, Ireland, and Spain have not seen an increase in their Gini coefficients. The other countries, however, have also experienced increasing inequality in the distribution of disposable income during the period of finance-dominated capitalism.

[4] This section draws on Hein (2013).

Table 1

Labour income share as percentage of GDP at current factor costs, average values over the trade cycle, early 1980s – 2008				
	1. Early 1980s – early 1990s	2. Early 1990s – early 2000s	3. Early 2000s – 2008	Change (3. – 1.), percentage points
Austria	75.66	70.74	65.20	-10.46
Belgium	70.63	70.74	69.16	-1.47
France	71.44	66.88	65.91	-5.53
Germany	67.11	66.04	63.34	-3.77
Greece[a)]	67.26	62.00	60.60	-6.66
Ireland	70.34	60.90	55.72	-14.61
Italy	68.31	63.25	62.37	-5.95
Netherlands	68.74	67.21	65.57	-3.17
Portugal	65.73	70.60	71.10	5.37
Spain	68.32	66.13	62.41	-5.91
Sweden	71.65	67.04	69.16	-2.48
UK	72.79	71.99	70.67	-2.12
US	68.20	67.12	65.79	-2.41
Japan[a)]	72.38	70.47	65.75	-6.64

Notes: The labour income share is given by the compensation per employee divided by GDP at factor costs per person employed. The beginning of a trade cycle is given by a local minimum of annual real GDP growth in the respective country.
[a)] adjusted to fit in 3 cycle pattern
Data source: European Commission (2010), author's calculations
Source: Hein (2012, p. 13)

Third, as data based on tax reports provided by Alvaredo et al. (2012) have shown, there has been an explosion of the shares of the very top incomes since the early 1980s in the US and the UK, which prior to the present crisis have again reached levels of the mid-1920s in the US and the mid-1930s in the UK (Figure 3). In France, Germany, the Netherlands, Spain, Portugal, Italy, Ireland, Japan, and Sweden (Figures 4-7), however, the shares of the top 0.1 per cent have not returned to the high levels of the period prior to World War II. But, with the exception of Germany, Ireland and the Netherlands, a slightly upward trend can be observed in these countries since the early 1980s, too. Although Germany has not yet seen such an increase, it should be noted that the share of the top 0.1 per cent has been substantially higher in this country longer periods of time and that it was only surpassed by the US and the UK in the mid 1980s and the mid 1990s, respectively (Figure 4).[5]

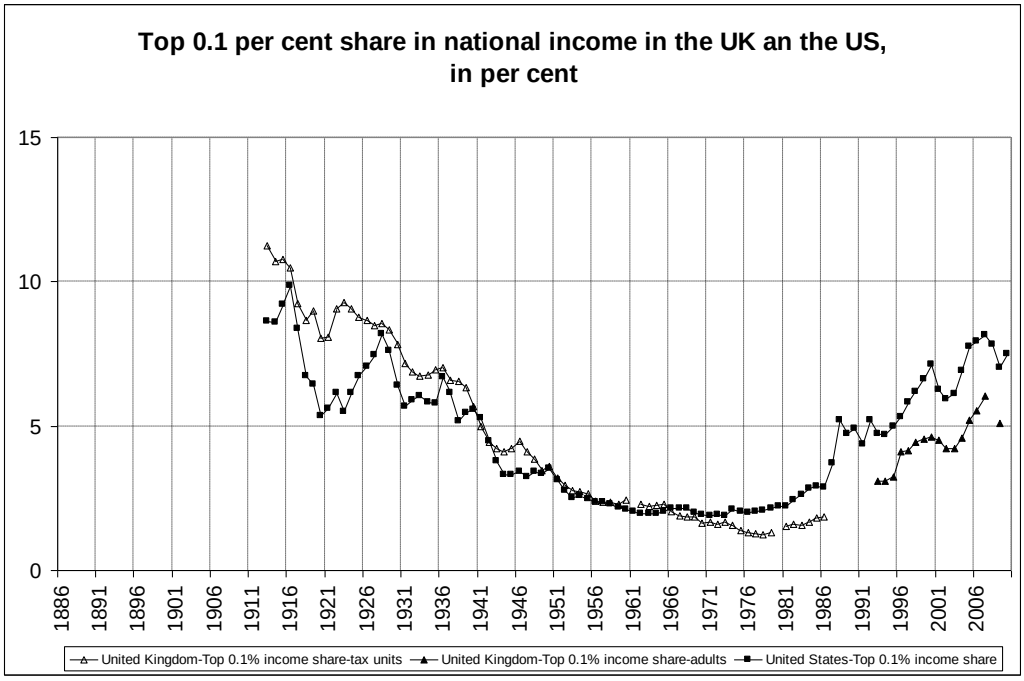
[5] See Hein (2013) for results on further countries.

Table 2

Gini coefficient before taxes for households' market income							
Country	mid-80s	around 1990	mid-90s	around 2000	mid-2000s	late 2000s	Change from mid-80s/around 1990/mid 90s until late 2000s
Austria	..	..	..	..	0.433	0.472	..
Belgium	0.449	..	0.472	0.464	0.494	0.469	0.020
Finland	0.387	..	0.479	0.478	0.483	0.465	0.078
France	..	..	0.473	0.490	0.485	0.483	0.010
Germany	0.439	0.429	0.459	0.471	0.499	0.504	0.065
Greece	0.426	..	0.446	0.466	0.454	0.436	0.010
Ireland	..	..	..	..	..	..	..
Italy	0.420	0.437	0.508	0.516	0.557	0.534	0.114
Nether-lands	0.473	0.474	0.484	0.424	0.426	0.426	-0.047
Portugal	..	0.436	0.490	0.479	0.542	0.521	0.085
Spain	..	..	..	..	..	0.461	..
Sweden	0.404	0.408	0.438	0.446	0.432	0.426	0.022
UK	0.419	0.439	0.453	0.512	0.500	0.506	0.087
US	0.436	0.450	0.477	0.476	0.486	0.486	0.050
Japan	0.345	..	0.403	0.432	0.443	0.462	0.117
Gini coefficient after taxes for households' disposable income							
Country	mid-80s	around 1990	mid-90s	around 2000	mid-2000s	late 2000s	Change mid-80s/around 1990 until late 2000s
Austria	0.236	..	0.238	0.252	0.265	0.261	0.025
Belgium	0.274	..	0.287	0.289	0.271	0.259	-0.015
Finland	0.209	..	0.218	0.247	0.254	0.259	0.050
France	0.300	0.290	0.277	0.287	0.288	0.293	-0.007
Germany	0.251	0.256	0.266	0.264	0.285	0.295	0.044
Greece	0.336	..	0.336	0.345	0.321	0.307	-0.029
Ireland	0.331	..	0.324	0.304	0.314	0.293	-0.038
Italy	0.309	0.297	0.348	0.343	0.352	0.337	0.028
Nether-lands	0.272	0.292	0.297	0.292	0.284	0.294	0.022
Portugal	..	0.329	0.359	0.356	0.385	0.353	0.024
Spain	0.371	0.337	0.343	0.342	0.319	0.317	-0.054
Sweden	0.198	0.209	0.211	0.243	0.234	0.259	0.061
UK	0.309	0.354	0.336	0.352	0.331	0.342	0.033
US	0.337	0.348	0.361	0.357	0.38	0.378	0.041
Japan	0.304	..	0.323	0.337	0.321	0.329	0.025

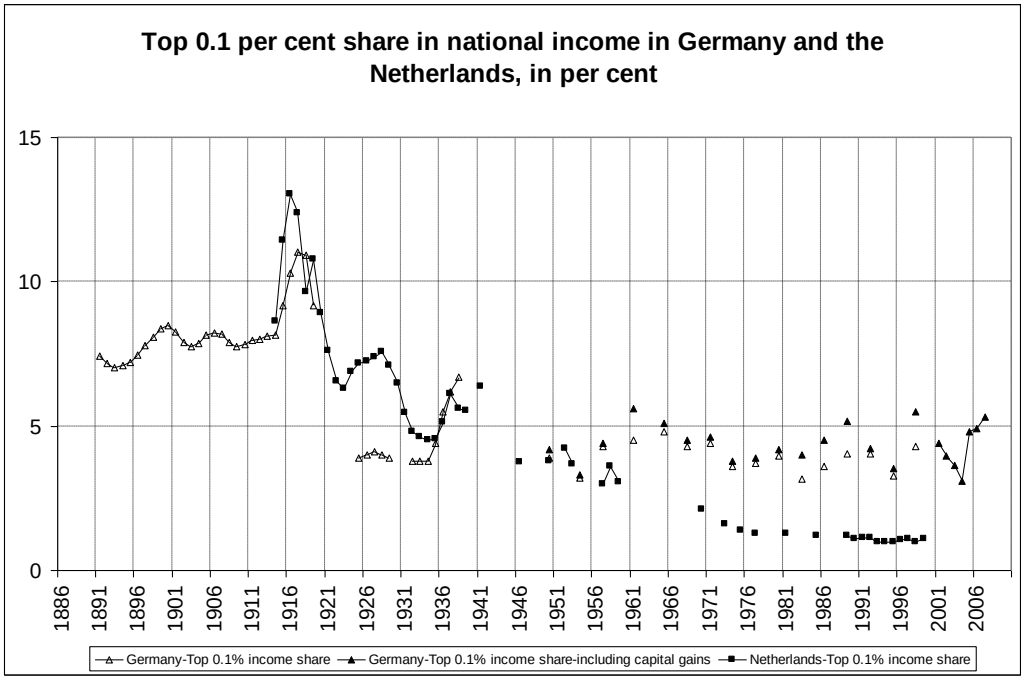
Note: Gini coefficient is based on equivalised household income
Data: OECD (2012), author's calculations
Source: Hein (2013, p. 7)

Figure 3



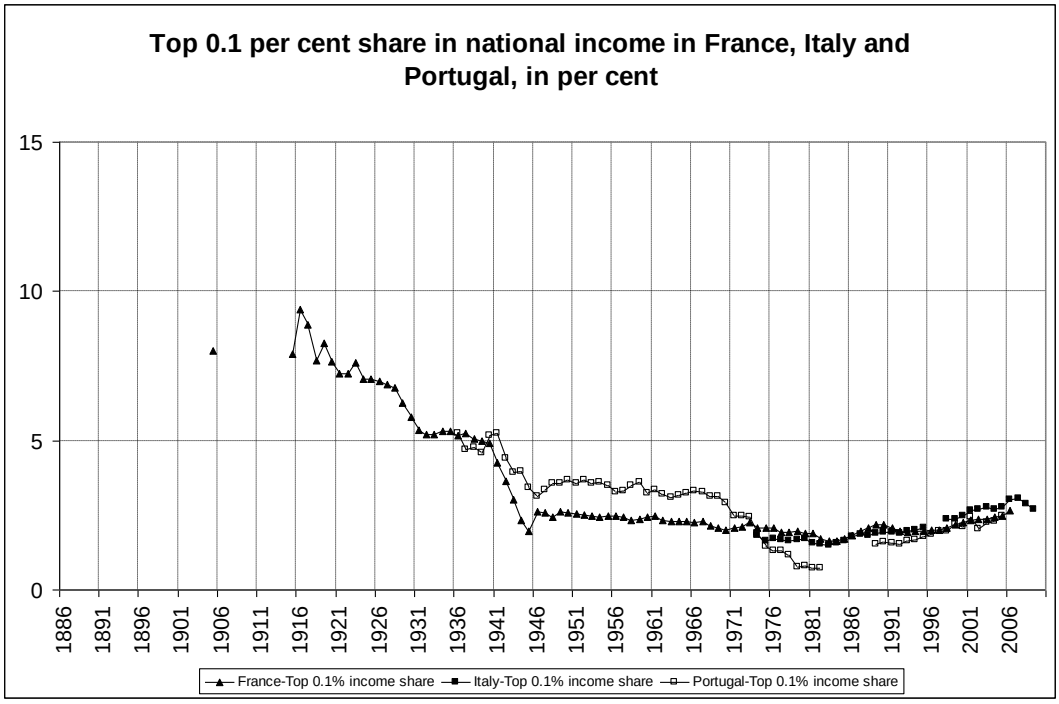
Source: Hein (2013, p. 9), data from Alvaredo et al. (2012)

Figure 4



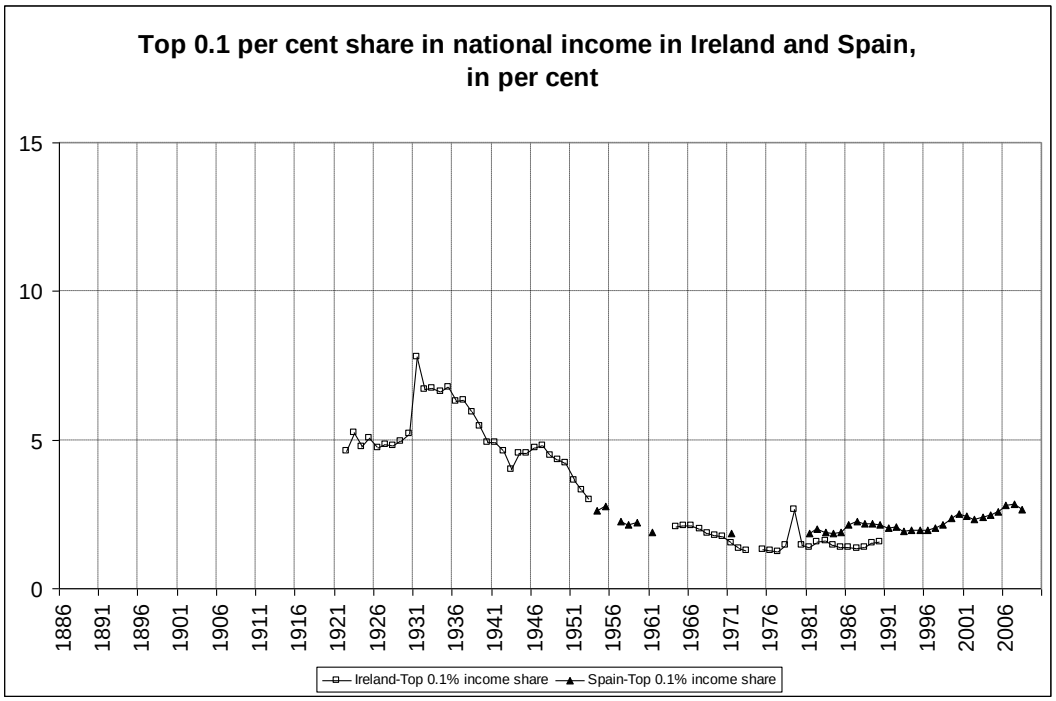
Source: Hein (2013, p. 9), data from Alvaredo et al. (2012)

Figure 5



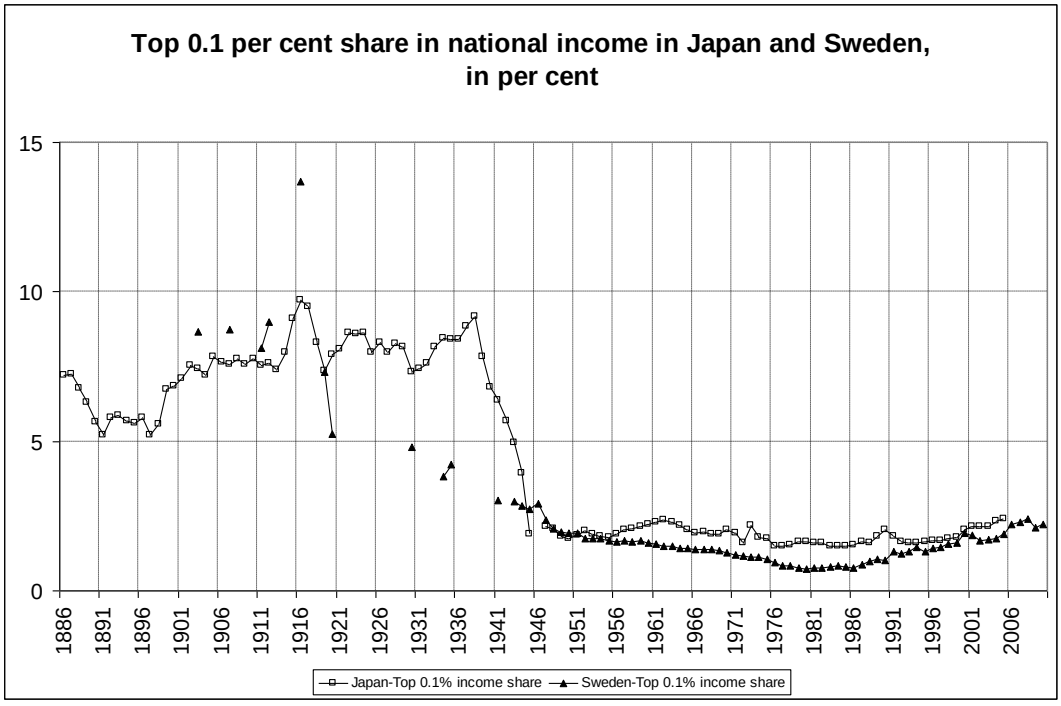
Source: Hein (2013, p. 10), data from Alvaredo et al. (2012)

Figure 6



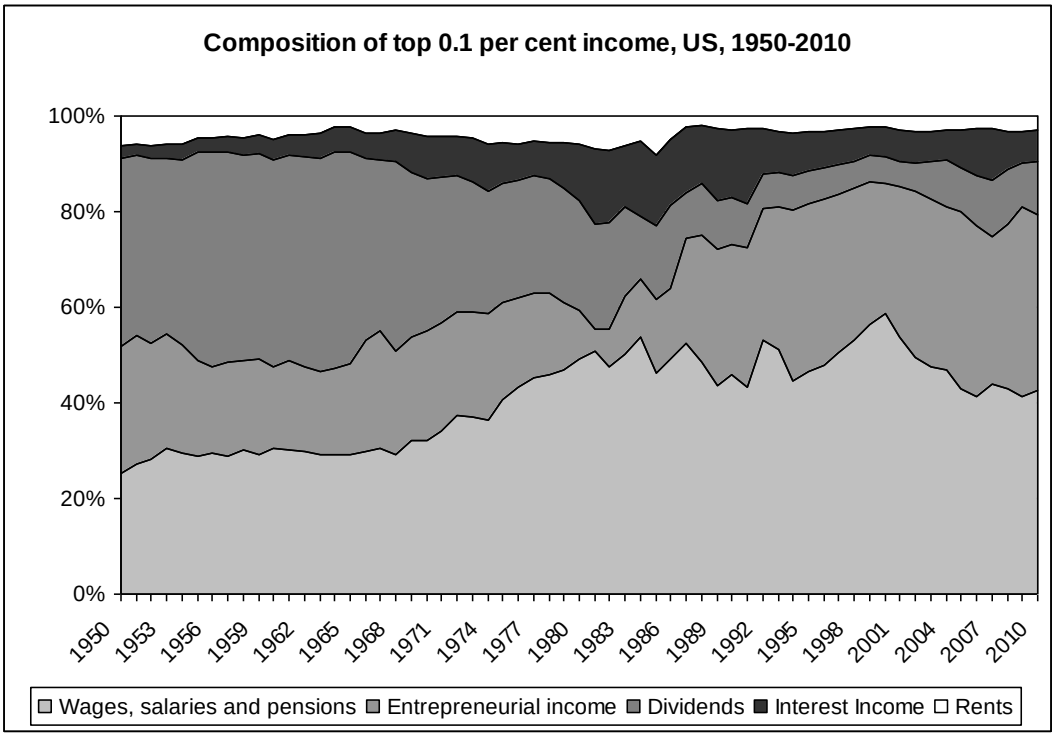
Source: Hein (2013, p. 10), data from Alvaredo et al. (2012)

Figure 7



Source: Hein (2013, p. 11), data from Alvaredo et al. (2012)

Figure 8



Source: Hein (2013, p. 12), data from Alvaredo et al. (2012)

Taking a look at the composition of top incomes, the increase in the income share of the top 0.1 per cent in the US has mainly been driven by an increase in top salaries (wages and salaries, bonuses, exercised stock-options and pensions) since the 1970s, and since the mid-1980s also in entrepreneurial income (Figure 8). Remuneration of top management ('working rich') has therefore contributed significantly, but not exclusively, to rising inequality in the US from the early 1980s until 2006. The decomposition of top incomes is only provided for a few countries in the data set by Alvaredo et al. (2012). Out of these, the 'working rich' phenomenon can also be found in Spain, where the share of top management salaries in top 0.1 per cent incomes has seen a rising trend from the early 1980s until the early 2000s, and in the Netherlands where such an increase could be observed in the course of the 1990s. In Italy we only find a slight increasing tendency since the early 1980s and in France there has not been such an increase at all.[6] Whereas top management salaries have contributed up to more than 50 per cent to the income of the top 0.1 per cent income share in the US, in Germany top management salaries have played a minor role. However, their share increased from 15 per cent in 1992 to 22.4 per cent in 2003 (Bach et al., 2009). Therefore, the 'working rich' phenomenon seems to arise in Germany as well.

Since top management salaries are part of compensation of employees in the national accounts and are thus included in the labour income share considered above, the increase in top management salaries has dampened the fall in the measured labour income share since the early 1980s. Excluding top management salaries from the labour income share would therefore give an even more pronounced fall in the share of 'direct labour', as has been shown by Buchele/Christiansen (2007) and Glyn (2009) for the US and by Dünhaupt (2011) for Germany and the US.

2.2. A Kaleckian interpretation of the effects of financialisation on income shares

According to Atkinson (2009), the trends and determinants of functional income distribution provide the key to the explanation of the other dimensions of redistribution. The analysis of factor shares provides the link between incomes at the macroeconomic or the national accounting level and incomes at the level of a household, thus helping to understand the development of inequality in personal distribution, and providing an indicator of the relative powers of different groups. For example, an increase in the profit share and a decrease in the wage share will also increase the inequality of income distribution across households, if financial and economic wealth generating profits is distributed unequally. Hein (2013) has therefore reviewed the recent empirical literature

[6] See Hein (2013) for results and figures for these countries.

on the determinants of income shares against the background of the Kaleckian theory of distribution, in order to identify the channels through which financialisation and neo-liberalism have affected functional income distribution (Table 3).[7]

According to the Kaleckian approach (Kalecki 1954, Part I), the gross profit share in national income, which includes retained earnings, dividend, interest and rent payments, as well as overhead costs (and thus, top management salaries) has three major determinants.

First, the profit share is affected by firms' pricing in incompletely competitive goods markets, i.e. by the mark-up on unit variable costs. The mark-up itself is determined by three different factors:

a) by the degree of industrial concentration and by the relevance of price competition relative to other instruments of competition (marketing, product differentiation) in the respective industries or sectors, i.e. by the degree of price competition in the goods market;

b) by the bargaining power of trade unions, because in a heterogeneous environment with differences in unit wage cost growth between firms, industries or sectors, the firm's or the industry's ability to shift changes in nominal wage costs to prices is constrained by competition with other firms or industries which do not have to face the same increase in unit wage costs;

and c) by overhead costs and gross profit targets, because the mark-up has to cover overhead costs and distributed profits.

Second, with mark-up pricing on unit variable costs, i.e. material plus wage costs, the profit share in national income is affected by unit imported material costs relative to unit wage costs. With a constant mark-up an increase in unit material costs will thus increase the profit share in national income.

And third, the aggregate profit share of the economy as a whole is a weighted average of the industry or sector profit shares. Since profit shares differ among industries and sectors, the aggregate profit share is therefore affected by the industry or sector composition of the economy.

[7] Neo-liberalism is a broader concept than financialisation, aiming at the deregulation of labour, financial and goods markets, a reduction of government intervention in the market economy and of government demand management, and at a re-distribution of income from wages to profits.

Table 3

Financialisation and the gross profit share – a Kaleckian perspective					
	Determinants of the gross profit share (including (top) management salaries)				
	1) Mark-up			2) Price of imported raw materials and semi-finished products	3) Sectoral composition of the domestic economy
Stylized facts of financialisation (1.-7.) and neo-liberalism (8.-9.)	1.a) Degree of price competition in the goods market	1.b) Bargaining power and activity of trade union	1.c) Overhead costs and gross profit targets		
1. Increasing shareholder value orientation and short-termism of management	…	+	+	…	…
2. Rising dividend payments	…	…	+	…	…
3. Increasing interest rates or interest payments	…	…	+	…	…
4. Increasing top management salaries	…	…	+	…	…
5. Increasing relevance of financial to non-financial sector (investment)	…	+	…	**...**	+
6. Mergers and acquisitions	+	**...**	…	**...**	**...**
7. Liberalisation and globalisation of international finance and trade	–	+	…	+/–	+/–
8. Deregulation of the labour market	…	+	…	…	…
9. Downsizing of government	…	+	**...**	…	+
Notes: + positive effect on the gross profit share, – negative effect on the gross profit share, … no direct effect on the gross profit share					

Source: based on Hein (2013, p. 15)

Integrating some stylized facts of financialisation and neo-liberalism into this approach and reviewing the respective empirical literature, it can be argued that there is some convincing empirical evidence that financialisation and neo-liberalism have contributed to the rising gross profit share and hence to the falling labour income share since the early 1980s through three main channels:

First, the shift in the sector composition of the economy from the public sector and the non-financial business sector with higher labour income shares towards the financial business sector with a lower labour income share has contributed to the fall in the labour income share for the economy as a whole.

Second, the increase in management salaries as a part of overhead costs together with rising profit claims of rentiers, i.e. rising interest and dividend payments of the corporate sector, have in sum been associated with a falling labour income share, although management salaries are part of compensation of employees in the national accounts, and thus of the labour income share.

Third, financialisation and neo-liberalism have weakened trade union bargaining power through several channels: increasing shareholder value and short-term profitability orientation of management, sectoral shifts away from the public sector and the non-financial business sector with stronger trade unions in many countries to the financial sector with weaker unions, abandonment of government demand management and full employment policies, deregulation of the labour market, and liberalisation and globalisation of international trade and finance.

These developments have not only triggered falling labour income shares, but they also should have been conducive to the observed increases in inequality of personal/household incomes.

3. Financialisation, distribution, investment and consumption – macroeconomic effects

3.1. Financialisation, shareholder value orientation, and investment – macroeconomic effects

3.1.1 Empirical results

Econometric evidence in favour of the hypothesis that financialisation has caused a slowdown in capital accumulation through the ‘preference channel’ and the ‘internal means of finance channel’ has been presented by Stockhammer (2004), van Treeck (2008), Onaran/Stockhammer/Grafl (2011), and Orhangazi (2008). Stockhammer (2004) takes the share of interest and dividends in profits of non-financial business as an indicator for the dominance of short-term profits in firms’ or management’s preferences. Short-term financial investment is hence prefered over long-term real investment in capital stock and the share of dividends and interest in profits should therefore be negatively associated with real investment. Using annual data for the business sector and applying

time series estimations for France (1978-1997), Germany (1963-1990), the UK (1970-1996), and the US (1963-1997), Stockhammer finds evidence in favour of his hypothesis for France, the US and maybe also the UK, but not for Germany. Van Treeck (2008) introduces interest and dividend payments, each in relation to the capital stock, into the estimation of the determinants of the rate of capital accumulation in the non-financial corporate sector of the US (1965-2004) using annual data for his time series estimations. He finds that dividend and interest payments each have a statistically significant negative effect on capital accumulation, indicating the finance constraint given by internal means of finance. The value of the negative coefficient on dividend payments also exceeds that on interest payments which is interpreted as evidence for 'shareholder value orientation' of management: Dividend payments thus do not only negatively affect investment via internal means of finance but also via firms' (or management's) preferences. Onaran/Stockhammer/Grafl (2011) in their time series study for the US (1962-2007) find a positive effect of the non-rentier profit share on real gross private domestic investment, but a negative effect of the rentier profit share (net dividends and net interest payments of domestic industry as a share of nominal GDP), which severely dampens the positive impact of unit gross profits on investment through the 'internal means of finance' channel. Orhangazi (2008) has used firm-level data on non-financial firms in the US (1972-2003) with a focus on the manufacturing sector in a dynamic panel-estimation approach. He finds that financial profits have a negative impact on real investment for large firms, indicating a shift in favour of short-term financial profits and at the expense of long-term profits from investment in capital stock. For small firms, however, the effect of financial profits (the sum of interest and equity income in net earnings) on real investment is positive, because financial profits seem to ease the financing constraint for these firms. The effect of financial payments (interest expenses, cash dividends, purchase of firms' own stocks) on investment is negative for the whole panel.

3.1.2 Macroeconomic models deriving different regimes

Based on these effects of financialisation on investment in capital stock, including the effects on functional income distribution outlined in the previous section, Post-Keynesians have presented different models examining long-run growth and stability effects of financialisation, as reviewed in Hein (2012, Chapter 3) and in Hein/van Treeck (2010), without open economy issues yet.[8] Depending on the values of the model parameters, 'finance-led growth' regimes, as suggested by

[8] See for example Lavoie (2008), Skott/Ryoo (2008a, 2008b) and van Treeck (2008).

Boyer (2000), 'profits without investment' regimes, as found by Cordonnier (2006), or 'contractive' regimes may emerge.

Only in the 'finance-led growth' regime is increasing shareholder power overall expansive with respect to the rates of capacity utilisation, as an indicator for aggregate demand, profit and capital accumulation, whereas in the 'profits without investment' regime the effects on the rates of capacity utilisation and profit remain expansive but capital accumulation gets depressed, and in the 'contractive' regime there is a depressing effect on all three endogenous variables of the model. As will be shown below, only the 'finance-led growth' regime yields medium-run stability of the financial structure of the firm sector and of capital accumulation. This regime, however, requires a very special parameter constellation: only weakly negative effects of increasing shareholder power on management's animal spirits regarding real investment in capital stock; a low rentiers' propensity to save out of current income (based on strong wealth effects on consumption); a low profit share; a low elasticity of investment with respect to distributed profits and internal funds; and a high responsiveness with regard to capacity utilisation (and to Tobin's q in some models). In particular, a medium-run increase in the gross profit share associated with financialisation may turn the stable financial structure unstable. More realistic parameter constellations giving rise to 'profits without investment' or 'contractive' regimes have turned out to yield cumulatively unstable medium-run results regarding the financial structure of the firm sector and the rate of capital accumulation. In the face of rising shareholder power, a rising rentiers' rate of return, that is increasing dividend rates and/or interest rates, and falling managements' animal spirits regarding investment in capital stock, these regimes are liable to systemic instability characterised by increasing outside finance-capital ratios, i.e. rising debt plus rentiers' equity-capital ratios, and falling goods market equilibrium rates of capital accumulation. Falling labour income shares triggered by financialisation increase the likelihood of these unstable regimes. Therefore, under the conditions of the 'contractive' and the 'profits without investment' regimes there exists a considerable systemic medium-run instability potential regarding the financial structure of the corporate sector of the economy and regarding capital accumulation. These results can be demonstrated using a simple model with fixed prices in the goods and financial markets, as suggested by Hein (2013, Chapter 3).

3.1.3 A simple model of financialisation, shareholder dominance, distribution and growth[9]

The basic model

Let us assume a closed economy without economic activity of the state, which produces just one type of commodity, which can be used for consumption and investment purposes, with a fixed-coefficients production technology. The basic model can be described by the following equations.

Pricing and distribution:

$$p = [1 + m(\rho)]wa, \qquad m > 0, \frac{\partial m}{\partial \rho} \geq 0, \tag{1}$$

$$h = \frac{\Pi}{pY} = 1 - \frac{1}{1 + m(\rho)}, \qquad \frac{\partial h}{\partial \rho} \geq 0, \tag{2}$$

$$r = \frac{\Pi}{pK} = \frac{\Pi}{pY}\frac{Y}{Y^p}\frac{Y^p}{K} = hu\frac{1}{v}, \tag{3}$$

Financing of capital stock and rentiers' income:

$$pK = B + E_R + E_F, \tag{4}$$

$$\gamma = \frac{B + E_R}{pK}, \tag{5}$$

$$\phi = \frac{E_F}{pK}, \tag{6}$$

$$\Pi = \Pi_F + R, \tag{7}$$

$$R = \rho(E_R + B), \tag{8}$$

Saving, investment and goods market equilibrium:

$$\sigma = \frac{S}{pK} = \frac{\Pi - R + s_R R}{pK} = r - (1 - s_R)\rho\gamma, \qquad 0 < s_R \leq 1, \tag{9}$$

$$g = \frac{pI}{pK} = \alpha + \beta u + \tau h - \theta\rho\gamma, \qquad \beta, \tau, \theta \geq 0, \tag{10}$$

$$g = \sigma, \tag{11}$$

$$\frac{\partial \sigma}{\partial u} - \frac{\partial g}{\partial u} > 0 \quad \Rightarrow \quad \frac{h}{v} - \beta > 0. \tag{12}$$

Variables:

p: price; m: mark-up; ρ: rentiers' rate of return on equity and bonds; w: nominal wage rate; a: labour-output ratio; h: gross profit share; Π: gross profits; Y: real income; r: rate of profit; K: real

[9] This section draws on Hein (2012, Chapter 3).

capital stock; Y^p: full capacity output determined by the capital stock; u: rate of capacity utilisation; v: capital-full capacity output ratio; B: bonds held by rentiers; E_R: equity held by rentiers; E_F: equity held by firms/owner-managers; γ: outside finance-capital ratio; ϕ: inside finance-capital ratio; Π_F: retained profits by firms; R: rentiers' income; σ: saving-capital rate; S: saving; s_R: propensity to save out of rentiers' income; g: rate of capital accumulation; I: investment; α, β, τ, θ: coefficients in the investment function.

Firms set prices (p) according to a mark-up (m) on constant unit labour costs (wa) up to full capacity output. The mark-up is determined by the degree of price competition in the goods market, by the bargaining power of labour in the labour market, and by overhead costs and gross profit targets (equation 1, Table 3). The profit share (h), i.e. the proportion of profits (Π) in nominal output (pY), is therefore determined by the mark-up (equation 2). The mark-up and the profit share may become elastic with respect to the rentiers' rate of return on equity and bonds (ρ) in the medium run. The profit rate (r) relates the annual flow of profits to the nominal capital stock and can be decomposed into the rate of capacity utilisation (u), the profit share (h), and the inverse of the capital-full capacity output ratio (v) (equation 3).

Long-term finance of the capital stock consists of firms' accumulated retained earnings (E_F), long-term credit granted by rentiers' households (B), and equity issued by the firms and held by rentiers' households (E_R) (equation 4). The rentiers' share in capital stock, the outside finance-capital ratio, is given by γ (equation 5), whereas ϕ denotes the accumulated retained earnings-capital ratio or the inside finance-capital ratio (equation 6). It is assumed that these ratios are constant in the short run, but become variable and hence to be endogenously determined in the medium run of the model.

Total profits (Π) split into firms' retained profits (Π_F), on the one hand, and dividends plus interest paid to rentiers' households (R), on the other hand (equation 7). Interest payments to rentiers' households are given by the rate of interest and the stock of debt, with the rate of interest as a distribution parameter being an exogenous variable for income generation and capital accumulation, mainly determined by monetary policies and risk and liquidity assessments of banks and rentiers, following the Post-Keynesian 'horizontalist' view of endogenous money and credit.[10] Dividend payments, given by the dividend rate and the stock of equity held by rentiers' households, are also determined by the power struggle between rentiers (shareholders) and firms (management), with rentiers being interested in high dividends for income purposes and management being in

[10] The Post-Keynesian 'horizontalist' view of endogenous money was pioneered by Kaldor (1970, 1982, 1985), Lavoie (1984, 1992, pp. 149-216, 1996), and Moore (1988, 1989). For a survey of the Post-Keynesian endogenous money approach and its implementation into Post-Keynesian models of distribution and growth see Hein (2008).

favour of retained earnings for firms' real investment and growth purposes. In order to simplify further analysis, dividend and interest payments to rentiers are synthesized and just one rentiers' rate of return on bonds and equity (ρ) is considered, which together with the stock of equity and bonds held by rentiers determines rentiers' income (equation 8).

Changes in the rentiers' rate of return may cause a change in the mark-up in firms' pricing in incompletely competitive goods markets (equation 1). If these changes occur, distribution between gross profits, as the sum of retained firms' profits, and interest and dividends received by rentiers' households, on the one hand, and wages, on the other hand, will be affected (equation 2). In the face of increasing shareholder power, we consider the mark-up to be dividend-inelastic in the short run. Therefore, in the short run only the distribution of income between firms and rentiers is affected by rising shareholder power. But in the medium run, the mark-up and hence the profit share are likely to become dividend-elastic, for the reasons outlined in the previous section.

In order to simplify the analysis, workers are assumed not to save. The part of profits retained is completely saved by definition. The part of profits distributed to rentiers' households, the interest and dividend payments, is used by those households according to their propensity to save (s_R). Therefore, we get the saving-capital rate (σ) in equation (9) which relates total saving to the nominal capital stock. The accumulation rate (g) relates net investment (I) to the capital stock (equation 10). Investment decisions are assumed to be positively affected by 'animal spirits' (α), expected sales and by unit profits (or the profit share), because both increase the (expected) profit rate. Expected sales are determined by the rate of capacity utilisation. Unit profits are given by the profit share and are thus determined by the mark-up in firms' pricing in the goods market. Distributed profits, the dividends and interest payments to rentiers, have a negative impact on investment, because they reduce retained earnings and firms' own means of finance, which are required for investment following Kalecki's (1937) 'principle of increasing risk'.

Short-run equilibrium and the effects of financialisation and increasing shareholder power

The goods market equilibrium is determined by the equality of saving and investment decisions (equation 11). The goods market stability condition requires that the saving-capital rate responds more elastically to changes in capacity utilisation than the capital accumulation rate does (condition 12). The model generates the following goods market equilibrium values:

$$u^* = \frac{\alpha + \tau h + \rho\gamma(1 - s_R - \theta)}{\frac{h}{v} - \beta}, \tag{13}$$

$$r^* = \frac{\frac{h}{v}\left[\alpha + \tau h + \rho\gamma(1 - s_R - \theta)\right]}{\frac{h}{v} - \beta}, \tag{14}$$

$$g^* = \frac{\frac{h}{v}(\alpha + \tau h) + \rho\gamma\left[\beta(1 - s_R) - \theta\frac{h}{v}\right]}{\frac{h}{v} - \beta}. \tag{15}$$

For the short-run analysis firms' outside finance-capital ratio is assumed to be constant (or only slowly changing), and the mark-up and hence the profit share are considered to be dividend-inelastic, because the determinants of the mark-up change rather slowly. An increase in shareholder power will thus affect the goods market equilibrium, firstly through the effects on managements' preferences regarding real investment in capital stock (as compared to more profitable financial investments in the short run) and hence through the animal spirit variable in the accumulation function, and secondly through the effects of an increasing rentiers' rate of return (higher dividend payments) on firms internal means of finance in the accumulation function. An increase in shareholder value orientation of management, and hence a decrease in animal spirits, as indicated by α in the investment function, has uniquely negative effects on the endogenous variables, as can easily be seen from equations (13) - (15): $\frac{\partial u}{\partial \alpha} > 0$, $\frac{\partial r}{\partial \alpha} > 0$ and $\frac{\partial g}{\partial \alpha} > 0$. An increase in the rentiers' rate of return, however, has ambiguous effects. It affects firms' investment through the availability of internal funds and the access to external financing, but it also has an influence on the income of rentiers' households and hence on consumption:

$$\frac{\partial u^*}{\partial \rho} = \frac{(1 - s_R - \theta)\gamma}{\frac{h}{v} - \beta}, \tag{13a}$$

$$\frac{\partial r^*}{\partial \rho} = \frac{\frac{h}{v}(1 - s_R - \theta)\gamma}{\frac{h}{v} - \beta}, \tag{14a}$$

$$\frac{\partial g^*}{\partial \rho} = \frac{\gamma\left[\beta(1 - s_R) - \theta\frac{h}{v}\right]}{\frac{h}{v} - \beta}. \tag{15a}$$

Assuming the stability condition (12) for the goods market equilibrium to hold, 'normal', 'intermediate' and 'puzzling' are obtained for the effects of increasing shareholder power through

the ‘internal means of finance channel’, as shown in Table 4. Adding the effects of increasing shareholder power through the ‘preference channel’, the regimes shown in Table 5 may emerge.

Table 4

Short-run cases for a change in the rentiers’ rate of return			
	‘Normal’ case	*‘Intermediate’ case*	*‘Puzzling’ case*
	$1-s_R<\theta$	$\theta<1-s_R<\frac{\theta h}{v\beta}$	$\frac{\theta h}{v\beta}<1-s_R$
$\frac{\partial u}{\partial \rho}$	–	+	+
$\frac{\partial r}{\partial \rho}$	–	+	+
$\frac{\partial g}{\partial \rho}$	–	–	+

Source: Hein (2012, p. 52)

Table 5

Short-run accumulation regimes under the conditions of financialisation and rising shareholder power			
	‘Contractive’ regime	*‘Profits without investment’ regime*	*‘Finance-led growth’ regime*
Effect via management’s animal spirits	weak/strong	weak	weak
Effect via rentiers’ rate of return	‘normal’ case	‘intermediate’ case	‘puzzling’ case

Source: Hein (2012, p. 53)

The ‘normal’ case of a negative impact of an increase in the rentiers’ rate of return throughout on the equilibrium values of capacity utilisation, the profit rate and the rate of capital accumulation will be given if: $1-s_R<\theta$. Therefore, this case is the more likely the higher the rentiers’ propensity to save and the higher the responsiveness of firms’ real investment with respect to distributed profits and hence to internal funds is. With this parameter constellation, the increase in consumption demand associated with redistribution of income from firms to rentiers’ households is insufficient to compensate for the negative effects on firms’ investment. In the ‘normal’ case, the effect of an increasing rentiers’ rate of return on the equilibrium rates of capacity utilisation, profit and capital accumulation amplifies the negative effects of rising shareholder power via management’s animal spirits on these variables and we obtain the overall ‘contractive’ regime.

In the 'puzzling' case, we have an opposite parameter constellation: $1-s_R > \theta\frac{h}{v\beta}$. A low propensity to save out of rentiers' income, a low responsiveness of investment with respect to distributed profits and internal funds, and a high elasticity with respect to capacity utilisation allow for a positive effect of an increasing rentiers' rate of return on the equilibrium rates of capacity utilisation, profit and capital accumulation. In the 'puzzling' case, the effects of an increasing rentiers' rate of return on the equilibrium rates of capacity utilisation, profit and capital accumulation may over-compensate for the negative effects of rising shareholder power via management's animal spirits. If this condition holds, we will obtain a 'finance-led' accumulation regime, and hence, an overall positive effect of increasing shareholder power on the rates of capacity utilisation, profit and capital accumulation.

Finally, an 'intermediate' case may arise if: $\theta < 1-s_R < \theta\frac{h}{v\beta}$. In this case, an increase in the rentiers' rate of return is accompanied by rising rates of capacity utilisation and profit, but by a falling equilibrium rate of capital accumulation. What is required for the 'intermediate' case, on the one hand, is a low rentiers' propensity to save, which boosts consumption demand in the face of redistribution in favour of rentiers, and a low responsiveness of firms' investment with respect to distributed profits, and hence, internal funds, which limits the negative effects of redistribution on firms' investment. On the other hand, however, in the 'intermediate' case we also have a low responsiveness of investment with respect to capacity utilisation, which, in sum, is not able to over-compensate for the negative effects of a rise in the rentiers' rate of return through internal funds. Under the conditions of the 'intermediate' case, the negative effects of increasing shareholder power via management's preferences (animal spirits) may be over-compensated by the effects of a rising rentiers' rate of return with respect to capacity utilisation and the profit rate, but the negative effect on capital accumulation is not. For the former, it is again required that increasing shareholder power is associated with a strong effect of the increase in the rentiers' rate of return, but with a low effect via management's animal spirits. If these conditions hold, we will obtain a 'profits without investment' regime.

Medium-run (in)stability

In the medium run of the model, the financial structure of the economy and hence the inside and outside finance-capital ratios are no longer exogenous, but have to be determined endogenously. Since $\gamma + \phi = 1$, it is sufficient to analyse the dynamics of γ in the face of changing shareholder

power and rentiers' rates of return. The accumulation of bonds and equity held by rentiers is given by rentiers' income and the propensity to save out of this income:

$$\Delta(E_R + B) = s_R \rho (E_R + B). \tag{16}$$

For the growth rate of debt plus equity held by rentiers we get:

$$\frac{\Delta(E_R + B)}{(E_R + B)} = s_R \rho . \tag{17}$$

If we assume that prices remain constant, which means that mark-ups and distribution may change but not the price level, the growth rate of the outside finance-capital ratio depends on the growth rate of outside finance and on the growth rate of the real capital stock. From equation (6) we get:

$$\hat{\gamma} = \frac{\Delta(E_R + B)}{(E_R + B)} - \hat{K} = s_R \rho - g . \tag{18}$$

In medium-run equilibrium the endogenously determined value of γ has to be constant, hence $\hat{\gamma} = 0$ has to hold. Introducing this condition into equation (18) and making use of equation (15) yields the following medium-run equilibrium value for the outside finance-capital ratio:

$$\gamma^* = \frac{s_R \rho \left(\frac{h}{v} - \beta \right) - \frac{h}{v}(\alpha + \tau h)}{\rho \left[\beta (1 - s_R) - \theta \frac{h}{v} \right]} . \tag{19}$$

This medium-run equilibrium will be stable if $\frac{\partial \hat{\gamma}}{\partial \gamma} < 0$. Starting from equations (18) and making use of equation (15) yields:

$$\frac{\partial \hat{\gamma}}{\partial \gamma} = \frac{-\rho \left[\beta (1 - s_R) - \theta \frac{h}{v} \right]}{\frac{h}{v} - \beta} . \tag{20}$$

Taking into account that we assume the goods market equilibrium to be stable, it follows for the medium-run stability condition of the outside finance-capital ratio:

$$\frac{\partial \hat{\gamma}}{\partial \gamma} < 0 \text{ if: } \quad \beta (1 - s_R) - \theta \frac{h}{v} > 0 \Leftrightarrow 1 - s_R > \frac{\theta h}{v \beta} . \tag{20'}$$

As can easily be checked with Tables 4 and 5, this is the condition which gives the 'puzzling case' and the 'finance-led growth' regime. Only in this regime the financial structure will hence be stable in the medium run, whereas the financial structure in the 'contractive' and the 'profit without investment' regimes will be unstable. In these regimes, slight deviations of the actual outside finance-capital ratio from its equilibrium value will make it further diverge from this value. As is discussed more extensively in Hein (2012, Chapter 3), these disequilibrium processes may then

show a macroeconomic 'paradox of outside finance': a rise (fall) in the outside finance-capital ratio will induce firms to reduce (raise) capital accumulation in order to reduce (raise) their individual outside finance-capital ratio, however, the macroeconomic outcome will be such that the outside finance-capital ratio will continue to rise (fall). Furthermore, it should be noted that a rise in the mark-up and the profit share in the medium run may turn a stable 'finance-led growth regime' into an unstable 'profits without investment regime'.[11] These are the major results of this simple model: Even if the goods markets are stable, 'contractive regimes' and 'profits without investment' regimes, the latter having prevailed during the pre-2007 crisis financialisation period in several economies (Hein 2012, Chapter 6; Hein/Mundt 2012; van Treeck 2009a; 2009b; van Treeck/Hein/Dünhaupt 2007; van Treeck/Sturn 2012), are liable to a considerable systemic medium-run instability potentials regarding the financial structure of the corporate sector of the economy and regarding capital accumulation. Of course, there may be other forces in the economy which either dampen or exacerbate instability in more complex models.[12]

So far, 'profits without investment' regimes in this section were based on low propensities to save out of distributed profits, without considering wealth effects on consumption and household debt yet. This will be the focus of the next section.

3.2. Financialisation, household debt and consumption – macroeconomic effects

3.2.1 Empirical evidence

Econometric studies have shown that (financial and housing) wealth is a statistically significant determinant of consumption – not only in the US. For the US, Ludvigson/Steindel (1999) and Mehra (2001) have estimated marginal propensities to consume out of wealth between 3 and 7 per cent, applying time series econometrics to different periods. Onaran/Stockhammer/Grafl (2011) carefully distinguishing between propensities to consume out of wages, non-rentier profits, rentier profits, financial wealth and housing wealth, find smaller values for the US (1962-2007): The propensity to consume out of net financial wealth is estimated to be 0.7 per cent, whereas the estimate for the propensity to consume out of gross housing wealth is 2 per cent. Boone/Girouard (2002) find marginal propensities to consume out of wealth between 2 and 4 per cent for the US, the UK, France, Italy and Japan (1980-1999), with a higher value only for Canada. Applying dynamic panel regression for 14 OECD countries (1979-1999), Dreger/Slacalek (2007) obtain that the

[11] For further effects of a medium-run increase in the profit share see Hein (2012, Chapter 3).

[12] See for example, Charles (2008a, 2008b), Fujita/Sasaki (2011), Lima/Meirelles (2007), Meirelles/Lima (2006), and Ryoo (2013), who have added the Minskyan distinction between 'hedge', 'speculative' and 'Ponzi' finance to similar models and derived more differentiated results for the (in)stability issues.

marginal propensity to consume out of financial and housing wealth in capital-market based countries has been 3.7 per cent, whereas in bank-based countries it has only been 0.7 per cent.

Furthermore, Barba/Pivetti (2009), Cynnamon/Fazzari (2008; 2013), Guttmann/Plihon (2010), Palley (2012, Chapter 3), van Treeck/Sturn (2012) and Zezza (2008) have presented extensive case studies on the importance of wealth-based and debt-financed consumption focusing on the USA.[13] Some of them are highlighting in particular imitation and conspicuous consumption effects in the face of increasing inequality of household incomes ('keeping up with the Joneses') building on the relative income hypothesis (Duesenberry 1949), others are focusing on the role of financial innovations, in particular, securitisation of credit card and mortgage debt. With respect to consumption demand, increases in household debt, based on (notional) financial or housing wealth and/or conspicuous consumption may thus become a substitute for higher wages:

> "Household debt thus appears to be capable of providing the solution to the fundamental contradiction between the necessity of high and rising levels of consumption, for the growth of the system's actual output, and a framework of antagonistic conditions of distribution, which keeps within limits the real income of the vast majority of the society." (Barba/Pivetti 2009, p. 127)

However, in a recent empirical study, Kim (2013) has found that although new credit to households will boost aggregate demand and output, the effect of household debt variables on output in the US was negative for the 1982-2009 period, whereas for the 1951-81 period no effect could be detected.

3.2.2 Debt-financed consumption in macroeconomic models

Bhaduri/Laski/Riese (2006) have explicitly focussed on the wealth-effect on consumption in their model, implying that increases in financial wealth stimulate households' willingness to consume. However, stock market wealth (and also housing wealth) is purely 'virtual wealth' and increasing consumption is hence associated with increasing gross indebtedness of private households. Therefore, a wealth-based credit boom may be maintained over a considerable period of time. Finally, however, the expansive effects of consumer borrowing may be overwhelmed in the medium run by rising interest obligations, which reduce households' creditworthiness and eventually require higher saving. A debt-led consumption boom will then turn into a debt-burdened recession. Although the authors consider the debt-income ratio of households as a major determinant of creditworthiness and hence of access to new borrowing, the dynamics of this ratio are not traced in the medium or long run of their model. Potential 'paradoxes of debt' are not at

[13] See also Rajan (2010) and Stiglitz (2012)

issue, and distributional and investment effects of 'finance-dominated capitalism' on household indebtedness and growth are also missing in the medium- to long-run dynamics. The same is true for Bhaduri's (2011a, 2011b) extensions of this approach, which attempt to show how a debt-financed consumption boom supported by rising asset prices ultimately leads to a credit crunch and debt deflation.

Kapeller/Schütz (2012) have integrated the Veblenian concept of conspicuous consumption into a Post-Keynesian distribution and growth model in the tradition of Bhaduri/Marglin (1990). They argue that relative consumption and imitation concerns matter primarily within a social group, here within the working class. It is assumed that an increase in the profit share is distributed unevenly among workers. Efforts to 'keep up with the Joneses' may then increase consumption and generate a 'consumption-driven profit-led' regime. However, this regime is based on increasing debt of those workers who have suffered from income losses, and thus may not be sustainable. However, the debt dynamics and the sustainability conditions are not examined explicitly.

The contradictory macroeconomic effects of household indebtedness for consumption purposes have already been included by Palley (1994) into a multiplier-accelerator business cycle model: An increase in household debt initially stimulates aggregate demand transferring purchasing power from lending high-income households with a low marginal propensity to consume to borrowing low-income households with a high propensity to consume. But interest payments on debt subsequently become a burden on aggregate demand, because purchasing power is redistributed in the opposite direction. This model is then extended to include Minskyan 'tranquillity' effects and to examine interactions of financial fragility and tranquillity. However, this business cycle model in level variables does not treat the development of stock-flow (debt-income) or stock-stock (debt-capital) ratios, neither are the changes in income distribution or in the propensities to invest in real capital stock examined.

Kim et al. (2014) applying the relative income hypothesis to a stationary economy with zero net investment, have slightly modified Palley's basic result, arguing that the dampening effects of the stock of household debt on consumption only shows up if debtor households do not or cannot use their saving as a buffer in order to service debt and to maintain the level of consumption simultaneously. The obvious limitation of this argument is that we have increasing debt (and hence debt services) but constant income in the model, so that such kind of behaviour will only be able to postpone, but not to eliminate the depressing effect of the stock of debt on consumption. As soon as net debt servicing obligations exceed saving out of current income, consumption has to contract – or debtor households have to default – and the economy will have to face a 'sudden stop' and/or a financial crisis. The assumption of a stationary economy is an obvious limitation to this model – the

dynamics and effects of household debt should better be analysed within the framework of a growing economy.

Dutt (2005, 2006) has analysed the effects of conspicuous consumption and easier access to consumer credit associated with deregulation of the financial sector within a Steindlian model of growth and income distribution, making use of a mechanism similar to Palley (1994). Credit-based consumption of workers, facilitated by the deregulation of the financial system allowing home equity lending, adjustable consumer loans and securitisation, stimulates effective demand and growth in the short run. However, in the medium run, contractive effects arise because interest payments imply redistribution of income from workers to capitalists who have a lower propensity to consume. These effects may overwhelm the expansive effects so that higher workers' debt has medium-run contractive effects on capital accumulation and growth under certain conditions. However, with a low rate of interest, high levels of autonomous investment and a low profit share, the medium-run effects of workers' debt may remain expansive, according to Dutt. The model sketched below is similar to Dutt's models. However, Dutt's models include a built-in stabiliser, because he assumes that the desired lending of capitalists (or rentiers) to workers households, or the desired debt of workers households from the perspective of the capitalists (or rentiers), is determined, and thus restricted by workers' income net of interest payments. He thus excludes cumulative increases, and hence instability, of workers' debt-income or -capital ratios. The model below will not make such a restrictive assumption and rather assume that creditors, because of the institutional changes in the age of financialisation mentioned above, do not care much about workers' net income or wealth when granting credit. This allows to focus on the issue of medium-run stability of workers' debt-capital ratios, and to treat the major effects of finance-dominated capitalism in a direct and explicit way.

3.2.3 A simple model of financialisation, redistribution, household debt and growth[14]

The basic model and short-run equilibrium

The assumptions regarding production, pricing and distribution are as in the model outlined in Section 3.1.3: We assume a closed one-good economy without a government, operating with a fixed coefficient technology in which functional income distribution is determined by mark-up pricing of firms in the incompletely competitive goods market. The share of profits in national income ($h = \Pi / Y$) is therefore a function of those variables determining the mark-up (m), in particular the

[14] This section draws on Hein (2012, Chapter 5).

degree of competition in the goods market, the bargaining power of trade unions in the labour market, and overhead costs and gross profit targets:

$$h = h(m). \tag{21}$$

There are two types of households, rentiers and workers, and a firm sector in the model. It is assumed that the capital stock of the firm sector (pK) is completely financed by equity issued by the firms and held by the rentiers' households (E_R). Rentiers receive all the profits made by the firms (Π) as dividend payments (Π_R), and there are no retained earnings of the firm sector in this model:

$$\Pi = \Pi_R = hpY. \tag{22}$$

From this it also follows that the dividend rate ($d = \Pi_R / E_R$) is equal to the rate of profit on capital stock ($r = \Pi / pK$), which can be decomposed into the profit share (h), the rate of utilisation of productive capacities given by the capital stock (u), and the capital-potential output ratio (v):

$$d = \frac{\Pi_R}{E_R} = \frac{\Pi}{pK} = \frac{\Pi}{pY}\frac{Y}{Y^p}\frac{Y^p}{K} = hu\frac{1}{v} = r. \tag{23}$$

Workers' consumption (pC_W) is determined by their wage income [$W = (1-h)Y$], on the one hand, and by credit received from rentiers (ΔB_W) net of interest payments on their stock of debt (iB_W) to rentiers, on the other hand:

$$pC_W = W + \Delta B_W - iB_W = (1-h)Y + \Delta B_W - iB_W. \tag{24}$$

Loans from rentiers to workers thus have a twofold effect. On the one hand, they increase available financial resources and boost consumption. On the other hand, they increase workers households' stock of debt, and thus interest payments which reduce workers' consumption. The net effect may be positive or negative. The rate of interest is again given by monetary policies of the central bank, setting the base rate of interest in the money market, and by rentiers' liquidity and risk assessments as well as the degree of competition in the credit and financial markets, determining the mark-up on the base rate, and thus the rate(s) of interest in these markets. The rate of interest is an exogenous variable in the model.

Rentiers' consumption (pC_R) is determined by their total income, consisting of distributed profits of firms ($hpY = \Pi_R$) plus the interest payments from workers households (iB_W), and their propensity to consume (c_R):

$$pC_R = c_R(hpY + iB_W), \qquad 0 < c_R < 1. \tag{25}$$

There are only two types of assets available for rentiers' saving: equity issued by the firm sector and debt of workers' households. It is assumed that rentiers' saving (S_R), determined by their propensity to save ($s_R = 1 - c_R$) out of total income, is split into fixed proportions between additional lending to workers and buying additional equity issued by the firms:

$$\Delta B_W = \delta S_R = \delta s_R (hpY + iB_W), \tag{26}$$

$$\Delta E_R = (1-\delta) S_R = (1-\delta) s_R (hpY + iB_W). \tag{27}$$

Different from Dutt (2005, 2006), because of the institutional changes in the age of financialisation, rentiers tend not to care much about workers' net income or indebtedness when granting credit. Therefore, as a first approximation, rentiers' loans to workers are considered to be a fixed proportion (δ) of rentiers' saving. This proportion is determined by several factors: workers households' willingness to go into debt, rentiers households' willingness to supply credit to workers, hence, workers households' creditworthiness as perceived by rentiers and affected potentially, but not necessarily, by workers' debt-capital or -income ratios, the regulation of the credit market, and thus, the standards for creditworthiness, and other factors influencing creditworthiness.

Normalising equations (24)-(26) by the capital stock yields:

$$\frac{pC_W}{pK} = (1-h)\frac{u}{v} + \hat{B}_W \lambda_W - i\lambda_W, \tag{28}$$

$$\frac{pC_R}{pK} = c_R\left(h\frac{u}{v} + i\lambda_W\right), \tag{29}$$

$$\frac{\Delta B_W}{pK} = \hat{B}_W \lambda_W = \delta s_R\left(h\frac{u}{v} + i\lambda_W\right). \tag{30}$$

The workers' debt-capital ratio ($\lambda_W = B_W / pK$) is treated as a constant in the short-run analysis but will be endogenously determined in the medium run of the model. Finally, $\hat{B}_W = \Delta B_W / B_W$ is the rate of change of workers' debt. Including the creditor-debtor relationship between rentiers' households and workers' households into the three basic equations of the Kaleckian model and the stability condition for the goods market equilibrium yields:

$$g = \frac{pI}{pK} = \alpha + \beta u, \qquad 0 < \beta, \tag{31}$$

$$\sigma = \frac{S}{pK} = s_R\left(h\frac{u}{v} + i\lambda_W\right), \qquad 0 < s_R < 1, \tag{32}$$

$$g = (1-\delta)\sigma, \tag{33}$$

$$(1-\delta) s_R \frac{h}{v} - \beta > 0. \tag{34}$$

The rate of investment (I) in capital stock (g) is determined by (expected) sales, and hence, by the rate of capacity utilisation and by animal spirits of the firm sector (α), so that a basic Kaleckian function for capital accumulation in equation (31) is obtained. Equation (32) defines the saving rate

(σ), i.e. saving in relation to the capital stock, which is determined by rentiers' income normalised by the capital stock and their propensity to save. Equation (33) is the goods market equilibrium condition, and condition (34) presents the usual Kaleckian/Keynesian goods market stability condition.

For the short-run equilibrium the workers' debt-capital ratio is taken as given and constant. From equations (31) – (33), the short-run equilibrium rates of capacity utilisation (u^*) and capital accumulation (g^*) are obtained:

$$u^* = \frac{\alpha - (1-\delta)s_R i\lambda_W}{(1-\delta)s_R \frac{h}{v} - \beta}, \tag{35}$$

$$g^* = \frac{(1-\delta)s_R\left(\alpha\frac{h}{v} - \beta i\lambda_W\right)}{(1-\delta)s_R \frac{h}{v} - \beta}. \tag{36}$$

Medium-run equilibrium and stability

In the medium run, the workers' debt-capital ratio is considered to be variable and has to be determined endogenously. Medium-run equilibrium requires the endogenously determined value of this ratio to be constant. If we assume goods market prices to be constant – mark-ups may change but the price level remains the same, which means that unit labour costs will have to vary inversely with the mark-up – the rate of change in the workers' debt-capital ratio is given as:

$$\hat{\lambda}_W = \hat{B}_W - \hat{K} = \hat{B}_W - g. \tag{37}$$

In medium-run equilibrium $\hat{\lambda}_W = 0$ is required, and therefore:

$$\hat{B}_W = g. \tag{38}$$

From equations (30) and (35) it is obtained:

$$\hat{B}_W = \frac{\delta s_R\left(\alpha\frac{h}{v} - \beta i\lambda_W\right)}{\lambda_W\left[(1-\delta)s_R \frac{h}{v} - \beta\right]}. \tag{39}$$

Inserting equation (36) and equation (39) into equation (38) yields two medium-run equilibrium values for the workers' debt-capital ratio:

$$\lambda_{W1}^{**} = \frac{\delta}{1-\delta} \tag{40}$$

and

$$\lambda_{W2}^{**} = \frac{\alpha h}{\beta i v}. \tag{41}$$

Stability of the medium-run equilibrium workers' debt-capital ratio requires:

$$\frac{\partial \hat{\lambda}_W}{\partial \lambda_W} < 0. \tag{42}$$

Starting from equation (37), inserting equations (36) and (39) yields:

$$\hat{\lambda}_W = \frac{s_R\left[\alpha\delta\frac{h}{v}\lambda_W^{-1} + \beta(1-\delta)i\lambda_W - \alpha(1-\delta)\frac{h}{v} - \beta\delta i\right]}{(1-\delta)s_R\frac{h}{v} - \beta}. \tag{43}$$

From this it is obtained:

$$\frac{\partial \hat{\lambda}_W}{\partial \lambda_W} = \frac{s_R\left[\beta(1-\delta)i - \alpha\delta\frac{h}{v}\lambda_W^{-2}\right]}{(1-\delta)s_R\frac{h}{v} - \beta}. \tag{43a}$$

Since the denominator will be positive, if only stable short-run goods market equilibria are considered, stability of medium-run equilibrium is given if the numerator in equation (43a) is negative. Therefore, stability is obtained under the following condition:

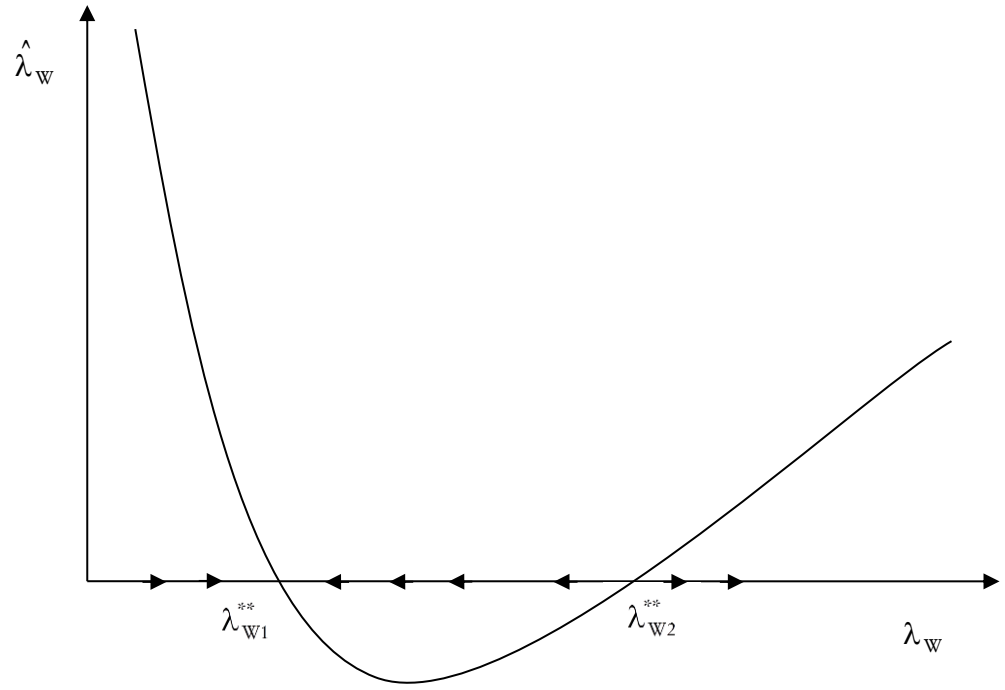
$$\frac{\partial \hat{\lambda}_W}{\partial \lambda_W} < 0 \quad \text{if}: \lambda_W < \sqrt{\frac{\delta}{(1-\delta)}\frac{\alpha h}{\beta i v}} \qquad \Rightarrow \qquad \lambda_W < \sqrt{\lambda_{W1}^{**}\lambda_{W2}^{**}}\,. \tag{43a'}$$

Instability will hence prevail under the following condition:

$$\frac{\partial \hat{\lambda}_W}{\partial \lambda_W} > 0 \quad \text{if}: \lambda_W > \sqrt{\frac{\delta}{(1-\delta)}\frac{\alpha h}{\beta i v}} \qquad \Rightarrow \qquad \lambda_W > \sqrt{\lambda_{W1}^{**}\lambda_{W2}^{**}}\,. \tag{43a''}$$

Since two equilibrium values for the workers' debt-capital ratio are obtained and the benchmark for stability is given by the root of the product of these two values, only the lower value is stable whereas the upper value is unstable. This is shown in Figure 9, where it is assumed that $\lambda_{W1}^{**} = \delta/(1-\delta) < \lambda_{W2}^{**} = (\alpha h)/(\beta i v)$. In this case, λ_{W1}^{**} is stable, whereas λ_{W2}^{**} is unstable. As shown below this is the only constellation which is consistent with economically meaningful stable goods market equilibrium values for capacity utilisation and capital accumulation.

Figure 9: Medium-run equilibrium values for workers' debt-capital ratio and their stability with positive stable goods market equilibrium at λ_{W1}^{**}



The medium-run equilibrium values for capacity utilisation (u_i^{**}) and capital accumulation (g_i^{**}) associated with the first medium-run equilibrium value for the workers' debt-capital ratio in equation (40) are:

$$u_1^{**} = \frac{\alpha - \delta s_R i}{(1-\delta)s_R \frac{h}{v} - \beta}, \tag{44}$$

$$g_1^{**} = \frac{s_R\left[\alpha(1-\delta)\frac{h}{v} - \beta\delta i\right]}{(1-\delta)s_R \frac{h}{v} - \beta}. \tag{45}$$

For a positive medium-run equilibrium rate of capacity utilisation, with short-run goods market stability assumed to hold, we need: $\alpha > \theta s_R i$, and for a positive equilibrium rate of capital accumulation it is required that: $\alpha > [\delta/(1-\delta)][(\beta i v)/h]$. Note that the latter implies that:

$$\lambda_{W1}^{**} = \frac{\delta}{1-\delta} < \lambda_{W2}^{**} = \frac{\alpha h}{\beta i v}. \tag{46}$$

For the second (unstable) medium-run equilibrium value for the workers' debt-capital ratio given in equation (41) the related medium-run equilibrium rates of capacity utilisation and capital accumulation are:

$$u_2^{**} = \frac{\alpha\left[1-(1-\delta)\frac{s_R h}{\beta v}\right]}{(1-\delta)s_R\frac{h}{v}-\beta}, \tag{47}$$

$$g_2^{**} = 0. \tag{48}$$

Short- and medium-run effects of financialisation

Table 6 summarises the short- and medium-run effects of financialisation on capacity utilisation, capital accumulation and workers' debt-capital ratio. In the short run, taking the workers' debt-capital ratio as given, falling animal spirits of the firm sector with respect to investment in real capital and redistribution at the expense of workers have both negative effects on capacity utilisation and capital accumulation. However, these contractive effects of financialisation may be compensated by increasing lending of rentiers to workers for consumption purposes. Also a lower rentiers' propensity to save and a lower rate of interest on workers' debt help to stabilise private consumption and thus contribute to compensate for the depressing effects of low animal spirits and redistribution of income at the expense of workers.

In the medium run, the endogeneity of workers' debt-capital ratio has to be taken into account. The model yields two potential medium-run equilibrium values for this ratio. For economically meaningful results for stable equilibrium capacity utilisation, the lower equilibrium value for workers' debt-capital ratio is stable, whereas the upper value is unstable. Therefore, within the limits given by the unstable upper equilibrium value, the workers' debt-capital (and -income) ratio will converge towards a definite value. Only if it exceeds the upper equilibrium will it become unstable and explode.

Lower animal spirits of the firm sector with respect to real investment as well as a higher rate of interest each have a negative effect on the upper equilibrium value for workers' debt-capital ratio and thus compress the corridor of stability, whereas a higher profit share extends it. A higher proportion of rentiers' saving lent to workers increases the stable equilibrium value of workers' debt-capital ratio, but this compresses the corridor of upwards stability.

Table 6

Short-run and medium-run effects of changes in exogenous model variables, assuming $\alpha > \delta s_R i$						
	α	**h**	**δ**	**i**	**s_R**	**λ_W**
Short run						
u^* (stable)	+	– (wage-led)	+ (debt-led)	–	–	–
g^* (stable)	+	– (wage-led)	+ (debt-led)	–	–	–
Medium run						
λ_{W1}^{**} (stable)	0	0	+	0	0	…
λ_{W2}^{**} (unstable)	+	+	0	–	0	…
u_1^{**} (stable)	+	– (wage-led)	+ for $r_1^{**} = d_1^{**} > i$ (debt-led) – for $r_1^{**} = d_1^{**} < i$ (debt-burdened)	–	–	…
g_1^{**} (stable)	+	– (wage-led)	+ for $r_1^{**} = d_1^{**} > i$ (debt-led) – for $r_1^{**} = d_1^{**} < i$ (debt-burdened)	–	–	…

Source: Hein (2012, p. 105)

The medium-run effects of lower animal spirits, a higher profit share – and also a higher rate of interest or a higher rentiers' propensity to save – on equilibrium capacity utilisation and capital accumulation are each negative. However, increasing lending of rentiers to workers can be expansive also in the medium run, taking the negative feedback effects of increasing debt and higher interest payments on workers' consumption into account, provided that the exogenous rate of interest is lower than the endogenously determined rate of profit. But if the rate of interest is higher than the rate of profit, the negative feedback effect of increasing debt and higher interest payments over-compensates the short-run expansive effect of increasing lending to workers and turns it contractive in the medium run.

Depending on the rate of interest relative to the rate of profit, we may therefore have two stable medium-run constellations in the face of higher lending of rentiers to workers. With a relatively low rate of interest a higher proportion of rentiers' saving being lent to workers, causing a higher workers' debt-capital ratio, will be accompanied by higher rates of capacity utilisation and capital accumulation. Aggregate demand and growth will hence be debt-led. With a relatively high rate of interest, however, a higher proportion of rentiers' saving lent to workers causing a higher workers' debt-capital ratio will be accompanied by lower rates of capacity utilisation and capital

accumulation. In this case, aggregate demand and growth will be debt-burdened. Both constellations are locally stable. However, the upwards corridor of stability will shrink due to the increase in the equilibrium workers' debt-capital ratio in each constellation.

Since the model economy in the short run is always debt-led, a higher proportion of rentiers' saving lent to workers will always be accompanied by higher rates of capacity utilisation and capital accumulation. Moving from the short to the medium run, the stock-flow dynamics may turn the short-run debt-led into a medium-run debt-burdened constellation if the rate of interest is too high relative to the rate of profit. With a low rate of interest, relative to the rate of profit, however, this will not happen and the economy remains debt-led in the medium run, too.

In the medium run, a shift from debt-led aggregate demand and growth to a debt-burdened constellation will only take place if there is a change in parameters which affect the medium-run equilibrium rate of profit relative to the rate of interest. A fall in animal spirits, a rise in the profit share, an increase in the rentiers' propensity to save, or a rise in the exogenous rate of interest will each lower the medium-run equilibrium rate of profit and may make it fall below the rate of interest.

It should be noted that the considerations so far only apply if $\alpha > \delta s_R i$, because this condition assures that there is a stable and economically meaningful goods market equilibrium associated with a stable medium-run workers' debt-capital ratio. If this condition is violated in the course of finance-dominated capitalism, either by the decrease in animal spirits, by the increase in the proportion of rentiers' saving lent to workers, by an increasing rate of interest or an increasing rentiers' propensity to save, economically meaningful goods market equilibria would have to be unstable (or the stable goods market equilibrium rate of capacity utilisation would be negative), and the system would turn unstable in the short and in the medium run.

Summing up, what this little model shows is that increasing (workers') household debt for consumption purposes may indeed have expansionary effects, over-compensating the contractive effects of financialisation on aggregate demand and growth via redistribution and via repressed capital accumulation, both in the short and in the long run.[15] However, the conditions for such expansionary and stable effects are highly restrictive. And even if they exist, they tend to be undermined by financialisation itself, through redistribution at the expense of the labour income share, which has a depressing effect on income growth in a wage-led economy and may turn a debt-

[15] For the treatment of household debt in more complex models, simultaneously with corporate debt, see Isaac/Kim (2013) and also the earlier work, using simulations in stock-flow consistent models, by Godley/Lavoie (2007, Chapter 11), Lavoie (2008), and van Treeck (2009a).

led economy debt-burdened, through lending too much to deficit households and through depressing animal spirit, which may each turn a stable workers' debt-capital ratio unstable.

4. Financialisation, open economy effects and current account imbalances

4.1. Empirical evidence

The interconnectedness of rising income inequality, widening global current account imbalances, and crises has come to the fore during recent developments in the world economy. Wage moderation[16] and the polarisation of income distribution led to deficiencies in effective demand in most countries. To cope with this, countries adopted different strategies, based on institutional, macroeconomic and other factors which will be discussed below. Broadly speaking, two 'types of capitalism under financialisation' developed: the 'debt-led consumption boom' and the 'export-led mercantilist' type.[17] These two types mutually reinforced each other and, in the context of financial liberalisation, contributed to rising global current account imbalances. The 'debt-led consumption boom' generated a 'profits without investment regime' relying on debt-financed consumption demand for the realisation of profits, as we have outlined in Section 3.2. Since this strategy was associated with higher unit labour cost growth, higher inflation and more dynamic domestic demand than in the 'export-led mercantilist' economies, it meant large current account deficits as a consequence. The 'export-led mercantilist' type, which may also give rise to a 'profits without investment' regime, relies instead on export and current account surpluses as an alternative for generating demand and realising profits.

These two types of development were complementary. The dynamic 'debt-led consumption boom' type of development in the US and the other countries following this model, relied on the willingness and the ability of private households to go into debt, and thus on ever rising notional wealth, in particular rising residential property prices, (seemingly) providing collateral for credit, and on the willingness of the rest of the world - notably the 'export-led mercantilist' countries - to run current account surpluses and thus to supply credit in order to finance the related current account deficits in the 'debt-led consumption boom' economies. The slowly growing or stagnating 'export-led mercantilist' economies, on the other hand, relied on the willingness and the ability of the rest of the world - notably the 'debt-led consumption boom' economies - to go into debt,

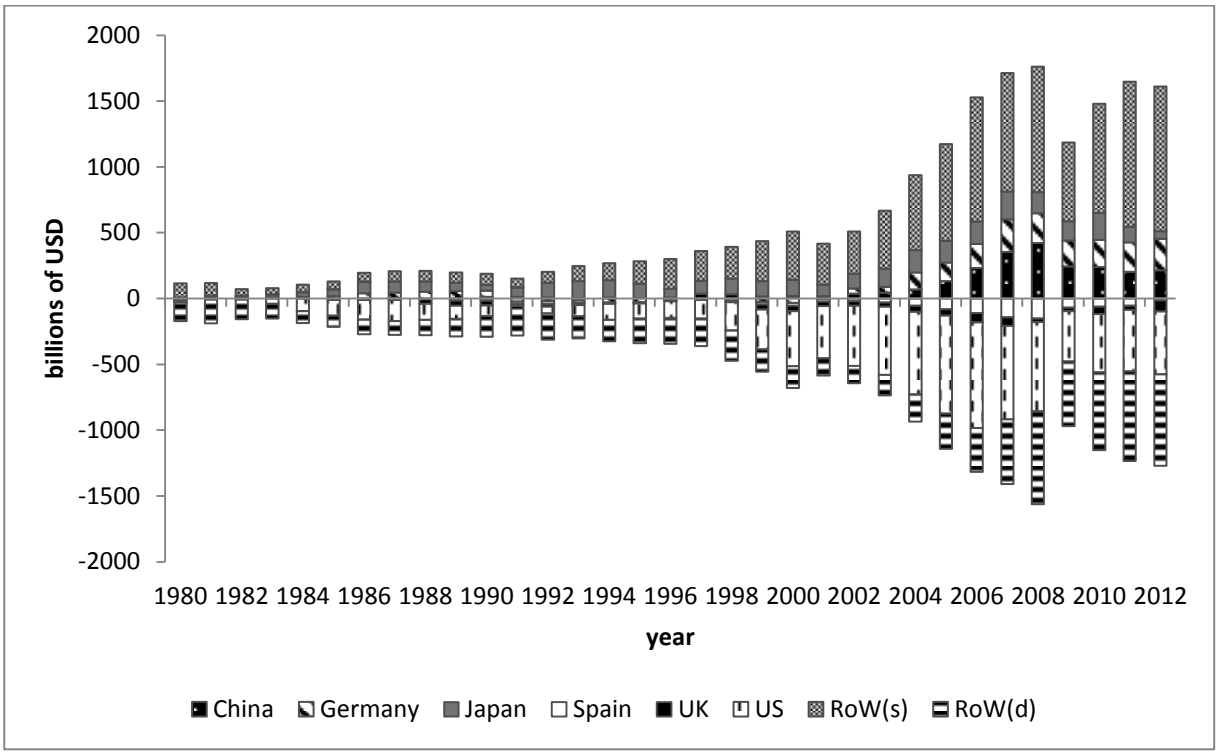
[16] Wage moderation means that real wages do not increase in line with increases in productivity, or that nominal wages do not increase in line with productivity plus inflation.

[17] For similar analysis see van Treeck/Hein/Dünhaupt (2007), Bibow (2008), Fitoussi/Stiglitz (2009), Horn et al. (2009), Sapir (2009), UNCTAD (2009), van Treeck (2009b), Wade (2009), Hein/Truger (2010, 2011, 2012/13), and Stockhammer (2010a, 2010b).

because their moderate or weak growth rates were dependent on dynamic growth of world demand and their export markets.

Figure 10 illustrates the development of the global current account imbalances since 1980. In the course of the recovery from the bursting of the new economy boom of the late 1990s, the global current account imbalances exploded from the early 2000s until the outbreak of the global financial crisis in 2007-08. Particularly large were US current account deficits towards Asian countries, primarily towards China and Japan. As Fitoussi/Stiglitz (2009) pointed out, in the US growth was maintained through increasing private and public indebtedness. This was financed partly by East Asia, where the People's Bank of China kept the currency artificially undervalued, leading to current account surpluses and, by definition, higher savings, and partly by Europe. The current account of the Euro area as a whole was relatively balanced, but in reality massive intra-Euro area imbalances had built-up, with Germany in particular accumulating surpluses, and the countries of Southern Europe experiencing rising current account deficits (Hein/Truger/van Treeck 2012; Stockhammer 2010a, 2010b).

Figure 10: Current account balances, 1980-2012, in billions of US dollars



Source: IMF (2013), own calculations

In the period from 2008 to 2012, world imbalances were partly reduced, due primarily to the worldwide recession (Figure 10). US imports fell, as did Chinese surpluses; the latter, however, was also due to the strengthening of domestic demand in China. Spain and Japan have meanwhile eliminated most of their current account deficits and surpluses, respectively. The strong reduction of global imbalances in 2009 was partially offset, though, and in 2011-2012 an increase in current account imbalances can be observed. In particular the surpluses of Germany increased in these two years, as did the deficits of the UK.

In Hein (2012, Chapter 6) cyclical average data for the trade cycle of the early 2000s were analysed with the aim of distinguishing the two types mentioned above - the 'debt-led consumption boom' and the 'export-led mercantilist' type - and identifying the countries which followed each of these patterns. The US, the UK, Greece, Ireland and Spain have been found to have followed the 'debt-led consumption boom' type of aggregate demand and growth. It is notable that all these economies have seen considerable increases in residential property prices and/or in wealth-income ratios in the cycle of the early 2000s. This was conducive to soaring consumption demand, and hence to considerable growth contributions of private consumption and domestic demand. Strong domestic demand growth in the 'debt-led consumption boom countries' was accompanied by negative growth contributions of the balance of goods and services in all of these countries.[18] The 'debt-led consumption boom' economies were thus the world demand engines of the cycle from the early 2000s to 2008. As a counterpart to these economies, an 'export-led mercantilist' group was identified containing the economies of, notably China and Germany, but also of Austria, Belgium, the Netherlands, Sweden, and Japan. These economies were characterised by surpluses in the balances of goods and services and in the current accounts. The financial balances of the private sectors were strongly positive in each of these countries.

Empirically, the link between rising inequality of personal incomes and current account imbalances was tested recently. In the face of rising inequality and falling labour income shares, financial globalisation – so the argument goes – provided the conditions for 'debt-led consumption boom economies' running into persistent current account deficits, and 'export-led mercantilist economies' with persistent current account surpluses, thus fuelling global current account imbalances. In the former group of countries, increasing inequality of personal incomes triggered imitation effects where lower income groups went into debt to 'keep up with the Joneses', dynamic economic activity but also higher inflation rates, which contributed to a rise of current account

[18] The exception here is Ireland, where the growth contribution of external demand was positive. Its current account deficit (and the positive financial balance of the external sector) was not due to a deficit in external trade but rather a deficit in the cross-border flows of primary incomes.

deficits. In the latter group, stagnating domestic demand and lower inflation contributed to increasing current account surpluses. In a cross-sectional econometric study for 18 OECD countries, Kumhof et al. (2012) confirm that an increase in top income shares and financial liberalisation are associated with larger current account deficits. One percentage point increase in the top 5 per cent income share is associated with current account-GDP deterioration of 0.8 percentage points. Similarly, Behringer/van Treeck (2013) find a strong negative link between top-end income inequality and the current account balance in a panel regression of 20 countries in the period from 1972 to 2007. In addition, they show that an increase in the corporate financial balance – associated with a falling wage share – leads to an improvement of the current account.

Against the background of financialisation and income re-distribution at the expense of lower-wage incomes and the labour income share , the unprecedented widening of the global current account imbalances that took place in the period from the early 2000s until the Great Recession created a highly fragile constellation at national, regional (Euro area) and global levels. The financial crisis was triggered by problems associated with the over-indebtedness of private households in the leading 'debt-led consumption boom' economy, the US. The fact that the US was able to run such large current account deficits stems from the role of the dollar as the international reserve currency (Wade 2009). This, however, undermined international financial stability and allowed for the quick spreading of the crisis worldwide once it broke out in the US (UNCTAD 2009). The collapse of the 'debt-led consumption boom' economies therefore also infected the 'export-led mercantilist' economies through the collapse of their export markets (foreign trade channel) and through devaluation of their capital exports in risky financial markets in the course of the financial crisis (financial contagion channel).

4.2. Inequality and current account imbalances in macroeconomic models

In an open-economy DSGE model, Kumhof/Ranciere (2010) analyse the links between increasing inequality, current account imbalances and crisis. In the model, the top 5 per cent group (investors), whose income and wealth increases relative to the bottom 95 per cent group (workers), finances the bottom group as well as foreigners. In a country with less developed financial markets or institutional impediments to private household debt, financing of foreigners is predominant and the country's growth model turns export-driven (as, for example, in China). Otherwise (as, for example, in the US), the bottom group will be able to sustain its consumption despite decreasing real wages, increasing the bottom households' debt-income ratios over time. Higher leverage in turn increases financial fragility, leading eventually to a financial crisis: In a run-up to the crisis, both inequality

and leverage increase simultaneously, as was the case prior to the Great Depression as well as the Great Recession.

Open-economy SFC models, as in Godley/Lavoie (2007a, Chapters 6 and 12), provide a framework for the study of the interactions between two countries/regions, and for the emanating current account imbalances. For example, the build-up of the US current account deficits vis-à-vis Chinese surpluses can be well examined in this framework, as was done by Barbosa de Carvalho (2012). The models have since been enlarged to include three countries, which appears particularly suitable for the analysis of world current account imbalances between the three major players: the US, China, and the Euro area. Among these models, the only one which takes into explicit account the effects that rising income inequality can have on the build-up of current account imbalances is provided by Belabed et al. (2013). Here the developments in both personal and functional income distribution are analysed and used to explain various patterns of consumption in different countries. The authors employ an extended version of Duesenberry's (1949) relative income hypothesis, where the household's consumption depends not only on disposable income, but also on consumption of the household's social reference group.[19] With upward looking comparisons, the model gives rise to expenditure cascades, as proposed by Frank et al. (2010), whose appearance and scope depend crucially on where in the (personal) income distribution inequality begins to rise. In order to analyse the effects of rising inequality on current account (im)balances, Belabed et al. (2013) essentially examine two hypotheses. The first one states that an increase in personal inequality (in particular in top income shares) leads, ceteris paribus, to a decrease in households' savings and an increase in household debt, which has a negative effect on the current account balance. The US economy fits very well with this proposition. The second hypothesis states that a shift in functional income distribution at the expense of wages leads, ceteris paribus, to an improvement of the current account due to the lack of consumption (and concomitant increase of private sector saving since firms and rich households save more than poor households). This is broadly the description of developments in surplus economies of Germany and China. For China in particular, the authors argue that personal inequality has increased as well, but given the under-development of financial markets where the lower and middle classes are not able to borrow in order to finance consumption, expenditure cascades cannot develop as in the case of the US. The other effect – changing functional income distribution – thus prevails, leading to an export-oriented growth model in the face of weak domestic demand. Their model simulations confirm both hypotheses.

[19] More technically, it depends on a parameter capturing consumption emulation, which itself depends again on the institutional context, e.g. corporate and government veils, labour market, etc.

In Barbosa de Carvalho (2012) the debt-led (consumption boom) economy (the US) issues the international reserve currency, whereas the central bank of the export-led (mercantilist) economy (China) pegs the exchange rate to the debt-led economy's currency, the US dollar, and purchases US long-term bonds. Consumption of the private sector in the debt-led country is based on income and gross wealth, thus it has a debt-led component enabled by strong (gross) wealth effects on consumption. Reserve accumulation in the export-led economy contributes to an increase in US bond prices, entailing therefore higher capital gains for the domestic US bond owners. Due to a wealth-based increase in consumption, the US current account deficit widens. Barbosa de Carvalho (2012) argues that in this framework any traditional attempt of re-balancing will come at the expense of growth: According to her simulation results, if the debt-led economy takes the path of depreciation (or there is a decrease in the propensity to import), a rebalancing of the current account will be achieved but bond prices will stabilise at a lower value and – in the medium to long run – consumption and GDP will be somewhat lower than in the baseline scenario. If, on the other hand, the export-led economy increases its propensity to consume, rebalancing as well as higher GDP growth for both countries will be achieved, but only temporarily. Positive effects on disposable income and consumption in the US due to a decreasing trade deficit will soon be overcome by a negative effect on wealth-based consumption given the (much) lower rise in the US bond prices. A slower growth of the US economy will eventually, via negative effects on exports for China, result in slower growth for China than in the baseline scenario with permanent imbalances. More importantly, in the medium to long run rebalancing will not be maintained.

4.3. A simple model of financialisation, redistribution, current account imbalances and growth

In this section we sketch a simple open economy distribution and growth model without economic activity by the government, in which a 'profits without investment' regime under the conditions of increasing financialisation is driven by net exports or current account surpluses. For this purpose we consider two economies, a domestic economy and a foreign economy without government economic activity each, based on the models by Bhaduri/Marglin (1990), Blecker (1989) and Hein/Vogel (2008).[20] We assume fixed coefficient production technologies, no technological progress, and functional income to be mainly determined by mark-up pricing of firms in incompletely competitive goods markets. Financialisation is assumed to have the following effects: first, a redistribution of income at the expense of the wage share in favour of the gross profit share,

[20] For more elaborated open economy models of a similar type see Blecker(1998; 2011).

as outlined in Section 2; second, decreasing animal spirits of firms with respect to investment in capital stock ('preference channel'), as outlined in Section 3.1 – for the sake of simplicity we do not explicitly consider the effect of increasing dividend payments and share buybacks ('internal means of finance channel') here; and third, rising demand in the foreign economy which is assumed to follow a 'debt-led consumption boom' type of development, that is rising consumption demand based on increasing (workers') household debt, as discussed in Section 3.2. We will analyse the effects on domestic capacity utilisation and capital stock growth, derive the conditions for a 'profits without investment' regime of the domestic economy driven by net exports and current account surpluses and finally consider the sustainability of such a regime.

Let us start with the well-known goods market equilibrium condition for an open economy without economic activity of the state: Planned saving (S) has to be equal to net investment (pI) plus net exports (NX), the difference between exports (X) and imports (M) of goods and services:

$$S = pI + X - M = pI + NX. \tag{49}$$

Normalising equation (49) by the nominal capital stock (pK) yields the following goods market equilibrium relationship between the saving rate ($\sigma = S/pK$), the accumulation rate ($g = I/K$) and the net export rate ($b = NX/pK$):

$$\sigma = g + b. \tag{50}$$

For the sake of simplicity we assume that saving only consists of saving out of profits (S_Π) – workers are assumed not to save. Since the rate of capacity utilisation is the relation of output to potential output ($u = Y/Y^p$) and the capital-potential output ratio relates the capital stock to potential output ($v = K/Y^p$), we obtain for the saving rate:

$$\sigma = \frac{S_\Pi}{pK} = \frac{s_\Pi \Pi}{pK} = s_\Pi h \frac{u}{v}, \qquad 0 < s_\Pi \leq 1. \tag{51}$$

Investment is modelled following the Rowthorn (1981) and Dutt (1984; 1987) version of the Kaleckian model, making investment decisions of firms dependent on 'animal spirits' (α) and on aggregate demand relative to productive capacities and hence on the rate of capacity utilisation:

$$g = \alpha + \beta u, \qquad \alpha, \beta > 0. \tag{52}$$

As will be shown below, this investment function makes sure that the effect of a change in functional income distribution on domestic demand and accumulation – leaving the effects on net exports aside – is wage-led; an increase in the profit share causes lower rates of capacity utilisation, profit and capital accumulation. This is the result found for most examined countries in many empirical studies applying a more extensive investment function including the profit share or unit

profits as a positive determinant following Bhaduri/Marglin (1990) (Naastepad/Storm 2007; Hein/Vogel 2008; Stockhammer et al. 2009; 2011; Onaran et al. 2011; Onaran/Galanis 2012).

The net export rate is positively affected by international price competitiveness, provided that the Marshall-Lerner condition can be assumed to hold and the sum of the price elasticities of exports and imports exceeds unity. Under this condition, the real exchange rate will have a positive effect on net exports. The real exchange rate itself is assumed to be positively related with the profit share.[21] But net exports also depend on the developments of foreign and domestic demand. An increase in domestic demand, and hence in the domestic rate of capacity utilisation has a negative impact on net exports, ceteris paribus, and an increase in foreign demand and hence in the foreign rate of capacity utilisation (u_f) has a positive effect, with the coefficients being affected by the income elasticities of the demand for exports and imports, respectively:

$$b = \psi e_r(h) - \phi u + \varepsilon u_f, \qquad \psi, \phi, \varepsilon > 0. \tag{53}$$

Stability of the goods market equilibrium requires that saving responds more elastically towards a change in the endogenous variable, the rate of capacity utilisation, than investment and net exports do together:

$$\frac{\partial \sigma}{\partial u} - \frac{\partial g}{\partial u} - \frac{\partial b}{\partial u} > 0 \qquad \Rightarrow \qquad s_\Pi \frac{h}{v} - \beta + \phi > 0. \tag{54}$$

The equilibrium rates (*) of capacity utilisation, capital accumulation and net exports are given by:

$$u^* = \frac{\alpha + \psi e_r(h) + \varepsilon u_f}{s_\Pi \frac{h}{v} - \beta + \phi}, \tag{55}$$

$$g^* = \frac{\alpha\left(s_\Pi \frac{h}{v} + \phi\right) + \beta\left[\psi e_r(h) + \varepsilon u_f\right]}{s_\Pi \frac{h}{v} - \beta + \phi}. \tag{56}$$

$$b^* = \frac{\left(s_\Pi \frac{h}{v} - \beta\right)\left[\psi e_r(h) + \varepsilon u_f\right] - \phi\alpha}{s_\Pi \frac{h}{v} - \beta + \phi}. \tag{57}$$

Whereas equilibrium capacity utilisation indicates equilibrium activity with given productive capacities, equilibrium capital accumulation determines the development of productive capacities or

[21] As shown in Hein/Vogel (2008), an increase in the real exchange rate, and hence, in price competitiveness, may be associated with a fall in the profit share, if it is based on a fall in the mark-up. However, the econometric estimations by Stockhammer et al. (2009; 2011) do not find such an effect; their results suggest that improved price competitiveness is obtained by means of nominal wage moderation or nominal devaluation of the currency, which are both associated with an increase in the profit share.

potential output. The effect of a change in the profit share on the equilibrium rates of capacity utilisation, capital accumulation and net exports are as follows:

$$\frac{\partial u^*}{\partial h} = \frac{\psi \frac{\partial e_r}{\partial h} - s_\Pi \frac{u}{v}}{s_\Pi \frac{h}{v} - \beta + \phi}, \tag{55a}$$

$$\frac{\partial g^*}{\partial h} = \frac{\beta\left(\psi \frac{\partial e_r}{\partial h} - s_\Pi \frac{u}{v}\right)}{s_\Pi \frac{h}{v} - \beta + \phi}, \tag{56a}$$

$$\frac{\partial b^*}{\partial h} = \frac{\left(s_\Pi \frac{h}{v} - \beta\right)\psi \frac{\partial e_r}{\partial h} + \phi s_\Pi \frac{u}{v}}{s_\Pi \frac{h}{v} - \beta + \phi}. \tag{57a}$$

As equations (55a) and (56a) show, the negative effect of a change in the profit share on the rates of capacity utilisation and capital accumulation via domestic demand may be over-compensated by the positive effect on net exports via improved price competitiveness, so that the total demand and growth regime may turn profit-led. In this case equation (57a) will have to be positive, too.

As pointed out above, we would like to examine the following effects of financialisation (Ω) with the help of our little model:

1. Declining animal spirits of firms with respect to investment in capital stock: $\frac{\partial \alpha}{\partial \Omega} < 0$.
2. Redistribution at the expense of the wage share: $\frac{\partial h}{\partial \Omega} > 0$.
3. Acceleration of foreign demand due to a 'debt-led consumption boom' type of development in the foreign economy: $\frac{\partial u_f}{\partial \Omega} > 0$.

Through these channels, increasing financialisation has the following effects on the equilibrium values of the domestic economy:

$$\frac{\partial u^*}{\partial \Omega} = \frac{\frac{\partial \alpha}{\partial \Omega} + \frac{\partial h}{\partial \Omega}\left(\psi \frac{\partial e_r}{\partial h} - s_\Pi \frac{u}{v}\right) + \frac{\partial u_f}{\partial \Omega}\varepsilon}{s_\Pi \frac{h}{v} - \beta + \phi}, \tag{55b}$$

$$\frac{\partial g^*}{\partial \Omega} = \frac{\frac{\partial \alpha}{\partial \Omega}\left(s_\Pi \frac{h}{v} + \phi\right) + \beta\left[\frac{\partial h}{\partial \Omega}\left(\psi \frac{\partial e_r}{\partial h} - s_\Pi \frac{u}{v}\right) + \frac{\partial u_f}{\partial \Omega}\varepsilon\right]}{s_\Pi \frac{h}{v} - \beta + \phi}, \tag{56b}$$

$$\frac{\partial b^*}{\partial \Omega} = \frac{-\frac{\partial \alpha}{\partial \Omega}\phi + \frac{\partial h}{\partial \Omega}\left[\left(s_\Pi \frac{h}{v} - \beta\right)\psi \frac{\partial e_r}{\partial h} + s_\Pi \frac{u}{v}\phi\right] + \frac{\partial u_f}{\partial \Omega}\varepsilon\left(s_\Pi \frac{h}{v} - \beta\right)}{s_\Pi \frac{h}{v} - \beta + \phi}. \tag{57b}$$

A 'profits without investment' regime driven by net exports/current account surpluses requires: $\frac{\partial u^*}{\partial \Omega} > 0, \frac{\partial g^*}{\partial \Omega} < 0, \frac{\partial b^*}{\partial \Omega} > 0$. Assuming the stability condition for the goods market equilibrium to hold, we therefore have:

$$\frac{\partial u^*}{\partial \Omega} > 0, \text{if}: \quad \frac{\partial \alpha}{\partial \Omega} + \frac{\partial h}{\partial \Omega}\left(\psi \frac{\partial e_r}{\partial h} - s_\Pi \frac{u}{v}\right) + \frac{\partial u_f}{\partial \Omega}\varepsilon > 0, \tag{55b'}$$

$$\frac{\partial g^*}{\partial \Omega} < 0, \text{if}: \quad \frac{\partial \alpha}{\partial \Omega}\left(s_\Pi \frac{h}{v} + \phi\right) + \beta\left[\frac{\partial h}{\partial \Omega}\left(\psi \frac{\partial e_r}{\partial h} - s_\Pi \frac{u}{v}\right) + \frac{\partial u_f}{\partial \Omega}\varepsilon\right] < 0, \tag{56b'}$$

$$\frac{\partial b^*}{\partial \Omega} > 0, \text{if}: \quad -\frac{\partial \alpha}{\partial \Omega}\phi + \frac{\partial h}{\partial \Omega}\left[\left(s_\Pi \frac{h}{v} - \beta\right)\psi \frac{\partial e_r}{\partial h} + s_\Pi \frac{u}{v}\phi\right] + \frac{\partial u_f}{\partial \Omega}\varepsilon\left(s_\Pi \frac{h}{v} - \beta\right) > 0. \tag{57b'}$$

A positive effect of increasing financialisation on equilibrium capacity utilisation requires that the negative effect via the 'animal spirits' channel is over-compensated by the increase of aggregate demand through the foreign demand channel and the redistribution channel, as is shown in condition (55b'). The former depends on the increase of foreign demand (through debt-led consumption) and on the income elasticity of the demand for exports of the domestic economy. The latter requires that aggregate demand is profit-led and that the dampening effects of redistribution on domestic demand are over-compensated by an increase in net export via higher price competitiveness, which has to rely on high price elasticities of demand for exports, in particular. However, it should be noticed that even if overall demand were wage-led, increasing financialisation could nonetheless have expansionary effects on capacity utilisation, if the negative effects via animal spirits and re-distribution in favour of profits are small, and the foreign demand effects are extremely strong. If none of these constellations are given, an increase in financialisation will depress domestic capacity utilisation and the economy will rather be in a contractive regime.

If the effects of increasing financialisation on domestic capacity utilisation are expansionary through the foreign demand and the redistribution channels, the effect on domestic equilibrium capital accumulation may be negative nonetheless. As shown in condition (56b'), this will occur in particular if the accelerator term in the investment function is weak and thus the increase in domestic capacity utilisation has only small effects on capital accumulation which are then insufficient to compensate for the negative direct effects through weakened 'animal spirits'. With a

strong accelerator effect, however, capital accumulation may be stimulated overall and the economy would then be in a 'finance-led growth' regime driven by net exports.

Condition (57b') shows the effects of increasing financialisation on the equilibrium net export rate. The effect via the 'animal spirits' channel will be positive, whereas the effects via distribution and foreign demand channels will be definitely positive only if: $s_{\Pi}\frac{h}{v}-\beta>0$. But with a strong accelerator effect as in the 'finance-led growth' regime, which we have ruled out for the 'profits without investment' regime, the foreign demand channel may have negative effects on net exports, without, however, making the total effect of financialisation on net exports necessarily negative.[22]

Having so far spelled out the conditions for 'profits without investment' regimes driven by net exports, we finally take a look at the associated dynamics of foreign assets and liabilities. For the sake of simplicity we do not explicitly treat cross-border flows of primary incomes, in particular interest and dividend payments associated with foreign assets/liabilities, and therefore treat net exports of goods and services to be equivalent to the current account balance. Positive net exports and hence current account surpluses for the domestic economy mean that its stock of net foreign assets (A) improves: $NX=\Delta A_d$, whereas the reverse is true for the foreign economy. In a two country model, net foreign assets of the domestic economy (A_d), which we continue to assume to be in a 'profits without investment' regime driven by net exports and current account surpluses, and hence to follow an 'export-led mercantilist' type of development, are equal to net foreign liabilities of the foreign economy (L_f), which we assume to be in a 'profits without investment' regime driven by debt-financed household consumption, thus following a 'debt-led consumption boom' type of development accepting concomitant negative net exports and current account balances:

$$A_d=L_f. \tag{58}$$

Positive (negative) net exports and current accounts mean a change in net foreign assets (liabilities) and hence:

$$\Delta A_d=\Delta L_f. \tag{59}$$

Dividing equation (59) by equation (58), it follows that the growth rate of net foreign assets of the domestic economy has to be equal to the growth rate of net foreign liabilities of the foreign economy:

[22] A strong accelerator effect in the investment function has to be compensated for by a strong (negative) domestic income effect in the net export function, that is a high income elasticity of the demand for imports, in order not to violate the goods market equilibrium condition.

$$\hat{A}_d = \frac{\Delta A_d}{A_d} = \hat{L}_f = \frac{\Delta L_f}{L_f}. \tag{60}$$

A constant net foreign assets-GDP ratio, or a constant net foreign liabilities-GDP ratio, requires that net foreign assets, or net foreign liabilities, and nominal GDP ($pY = Y^n$) of the respective economy grow at the same rate:

$$\frac{A_d}{Y_d^n} \text{ constant, if:} \qquad \hat{A}_d = \hat{Y}_d^n, \tag{61}$$

$$\frac{L_f}{Y_f^n} \text{ constant, if:} \qquad \hat{L}_f = \hat{Y}_f^n. \tag{62}$$

Taking into account equation (60) this means that the constancy of both, the net foreign assets-GDP-ratio of the domestic economy and the net foreign liabilities-GDP ratio of the foreign economy, requires that the two economies have to grow at the same rate:

$$\frac{A_d}{Y_d^n} \text{ and } \frac{L_f}{Y_f^n} \text{ constant, if } \hat{A}_d = \hat{Y}_d^n = \hat{L}_f = \hat{Y}_f^n. \tag{63}$$

From equations (60) – (62) we also obtain that the net foreign assets-GDP-ratio for the domestic country and the net foreign liabilities-GDP-ratio of the foreign economy are given as:

$$\hat{A}_d = \frac{\Delta A_d}{A_d} = \frac{\frac{\Delta A_d}{Y_d^n}}{\frac{A_d}{Y_d^n}} \quad \Rightarrow \quad \frac{A_d}{Y_d^n} = \frac{\frac{\Delta A_d}{Y_d^n}}{\hat{Y}_d^n}, \tag{64}$$

$$\hat{L}_f = \frac{\Delta L_f}{L_f} = \frac{\frac{\Delta L_f}{Y_f^n}}{\frac{L_f}{Y_f^n}} \quad \Rightarrow \quad \frac{L_f}{Y_f^n} = \frac{\frac{\Delta L_f}{Y_f^n}}{\hat{Y}_f^n}. \tag{65}$$

With constant current account surplus-GDP-ratios, or current account deficit-GDP-ratios, and constant nominal GDP growth rates, the net foreign assets-GDP-ratio, or the net foreign liabilities-GDP-ratio, will converge towards a definite value. As should be clear from the arguments put forward above, this can only hold for both economies simultaneously if their GDP growth rates are the same.

By definition, in a two countries model net foreign assets have to grow at the same rate as net foreign liabilities. However, nominal GDP growth rates of the domestic economy and the foreign economy will not necessarily be equal. If this is the case, only one country can see a constant net foreign liabilities-/net foreign assets-GDP-ratio, whereas the other will witness continuously falling or rising net foreign liabilities-/net foreign-assets-GDP-ratios. Let us distinguish two constellations.

1. In the first constellation the current account deficit country, the foreign economy following the 'debt-led consumption boom' type of development, grows at a higher rate than the current account surplus country, the domestic economy following the 'export-led mercantilist' strategy: $\hat{Y}_d^n < \hat{Y}_f^n$. In this case, either a constant foreign assets-GDP-ratio of the domestic economy will be accompanied by a falling foreign liabilities-GDP-ratio of the foreign economy; or a rising foreign assets-GDP-ratio of the domestic economy will be accompanied by a constant foreign liabilities-GDP-ratio of the foreign economy. Or one may obtain both, rising foreign assets-GDP-ratios of the domestic economy and falling foreign liabilities-GDP-ratios of the foreign economy.

2. In the opposite constellation, the current account deficit 'debt-led consumption boom' economy grows at a lower speed than the current account surplus 'export-led mercantilist' economy: $\hat{Y}_d^n > \hat{Y}_f^n$. In this case, either a constant foreign assets-GDP-ratio of the domestic economy will be accompanied by a rising foreign liabilities-GDP-ratio of the foreign economy; or a falling foreign assets-GDP-ratio of the domestic economy will be accompanied by a constant foreign liabilities-GDP-ratio of the foreign economy. Or we obtain both, falling foreign assets-GDP-ratios of the domestic economy and rising foreign liabilities-GDP-ratios of the foreign economy.

In the first constellation, in which the current account deficit country grows at a higher rate than the current account surplus country, there is no immanent dynamics towards ever rising foreign liabilities-GDP ratios, and hence, towards foreign over-indebtedness. Of course, this constellation may run into problems associated with increasing household debt being the driver of growth in the current account deficit country – as analysed in Section 3.2. And there may also arise long-run growth problems due to weak investment and capital stock growth in this country. However, this might not affect the growth differential with respect to the current account surplus countries, because both countries will suffer from the long-run growth problems immanent to a 'profits without investment' regime. But in the first constellation there are no inherent or systemic problems of foreign indebtedness as such. This is completely different in the second constellation, in which the current account surplus country grows at a higher rate than the current account deficit country. It is this constellation which generates a tendency towards cumulatively rising foreign liabilities-GDP ratios of the current account deficit country which might finally trigger problems of over-indebtedness with the rest of the world.

5. Summary and conclusions

In this paper we have reviewed the empirical and theoretical literature on the effects of changes in the relationship between the financial sector and the non-financial sectors of the economy – that is financialisation – on distribution, growth, instability and crisis. We have taken a macroeconomic perspective and have examined four channels of transmission of financialisation to the macroeconomy: first, the effect on income distribution, second, the effects on investment in capital stock, third, the effects on household debt and consumption, and fourth, the effects on net exports and current account balances. For each of these channels we have briefly reviewed some empirical and econometric literature supporting the presumed channels, some theoretical and modelling literature examining the macroeconomic effects via these channels, and finally, we have presented small models generating the most important macroeconomic effects. We have chosen as a starting point for all these considerations the empirical observation that several countries in the pre-Great-Recession financialisation period were characterised by redistribution in favour of profits and by 'profits without investment' regimes – which require explanation from a macroeconomic perspective.

We started with the examination of the redistribution tendencies of financialisation in different respects – functional distribution, personal/household distribution and top incomes shares in national income – and have shown that the financialisation period was characterised by increasing inequalities in all these dimensions. Then we applied a Kaleckian approach towards the explanation of the falling labour income shares in the financialisation period, taking into account broad empirical research in this area. We argued that this redistribution was mainly due to a shift in the sectoral composition of the economy from the public sector and the non-financial business sector with higher labour income shares towards the financial business sector with a lower labour income share, to rising profit claims of the rentiers, i.e. rising interest payments (in the 1980s) and higher dividend payments of the corporate sector, and to the weakening of trade union bargaining power through several channels.

Regarding the investment in capital stock, we have reviewed supportive econometric evidence for the 'preference channel' and the 'internal means of finance channel'. According to the first channel, financialisation and shareholder value orientation have caused decreasing managements' animal spirits with respect to real investment in capital stock and long-run growth of the firm and increasing preference for financial investment generating high profits in the short run. And according to the second channel, financialisation and shareholder value orientation have drained internal means of finance for real investment purposes from the corporations, through increasing dividend payments and share buybacks in order to boost stock prices and thus

shareholder value. Implementing these channels into macroeconomic distribution and growth models yields different regimes, depending on the values of the model parameters: 'finance-led growth' regimes, 'profits without investment' regimes, or 'contractive' regimes. Only the 'finance-led growth' regime yields medium-run stability of the financial structure of the firm sector and of capital accumulation, whereas the empirically more realistic 'profits without investment' and 'contractive' regimes yield cumulatively unstable medium-run results regarding the financial structure of the firm sector and the rate of capital accumulation, i.e. rising debt plus rentiers' equity-capital ratios, and falling rates of capital accumulation. Falling labour income shares triggered by financialisation increase the likelihood of these unstable regimes. Therefore, under the conditions of the 'contractive' and the 'profits without investment' regimes there exists a considerable systemic medium-run instability potential regarding the financial structure of the corporate sector of the economy and regarding capital accumulation.

Regarding the effects of financialisation on consumption and household debt, we have argued that there is increasing evidence for (notional) wealth effects on household consumption as well as for the relative income hypothesis regarding households' decisions to consume, each of them associated with increasing indebtedness in order to finance consumption expenditure exceeding current income. We have shown that increasing (workers') household debt for consumption purposes may indeed have expansionary effects, over-compensating the contractive effects of financialisation on aggregate demand and growth via redistribution and via repressed capital accumulation, both in the short and in the long run. However, the conditions for such expansionary and stable effects are highly restrictive. And even if they exist, they tend to be undermined by financialisation itself, first, through redistribution at the expense of the labour income share, which has depressing effects on income growth in a wage-led economy and which may turn a debt-led economy debt-burdened, second, through lending too much to deficit households and, third, through depressing animal spirits which may each turn a stable workers' debt-capital ratio unstable.

The alternative to a 'profits without investment' regime, driven by a 'debt-led consumption boom' type of development, is an 'export-led mercantilist' strategy. In the final section we have therefore dealt with this international dimension of financialisation which led to increasing current account imbalances at the global level in the pre-crisis financialisation period. We have specified the conditions for such a strategy and found that in particular strong growth in current account deficit countries, driven by debt-led consumption booms, high income elasticities of the demand for exports of the current account surplus country and also high price elasticites are supportive, as are only weakly negative effects on investment in capital stock. Examining the

dynamics of foreign assets and liabilities associated with 'export-led mercantilist' strategies, we have found that there is no immanent or systemic dynamics towards ever rising foreign liabilities-GDP ratios and hence towards foreign over-indebtedness, if the current account deficit countries grow at a higher rate than the current account surplus countries. However, as soon as this constellation turns into its opposite, a tendency towards cumulatively rising foreign liabilities-GDP ratios of the current account deficit country will arise, which might finally trigger problems of over-indebtedness with the rest of the world, if the current account deficit country is not the country issuing the world key currency, which is accepted irrespective of the dynamics of the ratio of debt held by foreigners to GDP of this country.

Summing up, we have shown that against the background of redistribution of income at the expense of the labour income share and depressed investment in capital stock, each a major feature of financialisation, short- to medium-run dynamic 'profits without investment' regimes may emerge. However, each type of these regimes, the 'debt-led consumption boom' type and the 'export-led mercantilist' type contains internal contradictions, with respect to household debt in the first regime and with respect to foreign debt of the counterpart current account deficit countries in the second regime, which finally undermine the sustainability of these regimes and lead to financial and economic crises.

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