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A (Post-)Keynesian perspective on 'financialisation'

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A (Post-)Keynesian perspective on ‘financialisation’*

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Abstract

Post-Keynesian demand driven distribution and growth models, based on the notion of distribution conflict between different groups, have been critical regarding the macroeconomic effects of ‘financialisation’. In the present paper, firstly, we attempt to identify theoretically and empirically the main channels of influence of ‘financialisation’ on investment, saving and distribution in order to obtain a precise macroeconomic meaning of ‘financialisation’ in a distribution and growth context. Secondly, we analyse the effects of ‘financialisation’ in a simple stock-flow consistent Post-Keynesian/Post-Kaleckian distribution and growth model and we show that with ‘normal’ parameter constellations ‘financialisation’ generates systemic instability.

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Key words: ‘Financialisation’, distribution, growth, instability, Post-Keynesian models

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1. Introduction

The recent decades have seen major changes in the financial sectors of developed and developing countries.¹ Generally, we have observed a rapid development of new financial instruments, triggered by national and international legal liberalisation and by the development of new communication technologies. The overall importance of financial factors for distribution, consumption, investment and growth seems to have increased considerably. And the instability potential arising from the financial sector has increased dramatically, as suggested most recently by the experience of the financial crisis, which started in the US subprime mortgage market in 2007 and has spread all over the world since then.

The changes in the financial sector and in the relationship between the financial and the real sectors of the economy have been broadly summarised as ‘financialisation’ by some authors (Epstein, 2005; Krippner, 2005; Lavoie, 2008; Palley, 2008; Skott/Ryoo, 2008a, 2008b; Stockhammer, 2004; van Treeck, 2009b, 2009a).² Epstein (2005, p. 3), for example, argues that ‘[...] financialization means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies’. This is a rather broad definition of ‘financialisation’ which lacks analytical precision. In this paper we therefore attempt to give ‘financialisation’ a more precise meaning from a macroeconomic and distribution and growth perspective.

¹ See for example the overview in Eatwell/Taylor (2000) for an early analysis, Krippner (2005), Orhangazi (2008), Dumenil/Levy (2004a), Palley (2008), and the contributions in Epstein (2005) for a detailed treatment of the development in the US and other countries, van Treeck (2009b) and van Treeck/Hein/Dünhaupt (2007) for a comparison of the macroeconomics of ‘financialisation’ in the US and Germany, and Stockhammer (2008) for the development in Europe.

² Other authors have used different terms, with sometimes different meanings: ‘finance-led growth regime’ (Boyer, 2000), ‘financial wealth-induced growth regime’ (Aglietta, 2000), ‘finance-led economies’ (van Treeck, 2008), ‘finance-dominated regime’ (Stockhammer, 2008), ‘neo-liberalism’ (Duménil/Levy, 2001, 2005), ‘shareholder value orientation’ (Hein, 2008c; Stockhammer, 2005-6), ‘maximizing shareholder value’ (Lazonick/O’Sullivan, 2000), or ‘rising shareholder power’ (Hein, 2008b).

Generally, nowadays there seems to prevail a broad consensus among macroeconomists of different schools of thought regarding macroeconomic real effects of the financial system. It is by now broadly accepted that the development of the financial sector of an economy is crucial for real economic growth. However, there remains equally wide disagreement as to which kind of financial structure and institutions are conducive to growth, and which are not. Therefore, it comes with no surprise that also the effects of the recent trends in the development of the financial sector on distribution and growth are viewed differently.

Modern mainstream models, based on a synthesis of new ‘endogenous’ growth theory and new information economics, generally hold – albeit with different emphasis with respect to the relative importance of banks and financial markets – that the degree of financial intermediation should be positively associated with long-run growth.³ However, these models are rather limited when it comes to taking into account the recent ‘financialisation’ processes as sketched above because they allow for at best only a very limited role for effective demand in the long run or for distribution conflict between different social groups or classes.

Post-Keynesian demand driven distribution and growth models, based on the notion of distribution conflict between different groups, have been more critical with respect to the real effects of ‘financialisation’.⁴ In the present paper we attempt to identify theoretically and empirically the main channels of influence of ‘financialisation’ on distribution and growth from a Post-Keynesian perspective in order to obtain a more precise macroeconomic meaning

³ See the surveys by Arestis/Sawyer (2005a), Demetriadis/Adrianova (2004), Hein (2005), and Levine (2003; 2005).

⁴ Whereas the earlier Post-Keynesian and Kaleckian models of distribution and growth were missing an explicit introduction of monetary and financial variables at all, with the exception of Pasinetti’s (1974, pp. 139-141) natural rate of growth models, these variables have been introduced into those models since the late 1980s/early 1990s by different authors. However, the focus in these models has mainly been on the introduction of the rate of interest, as an exogenous distribution parameter determined by central bank policies and liquidity and risk assessments of commercial banks and rentiers, and bank credit, created endogenously by a developed banking sector on demand by creditworthy borrowers. See the overview and the analysis in Hein (2008a).

of ‘financialisation’. These channels of influence will then be integrated into a simple analytical stock-flow consistent Post-Kaleckian distribution and growth model and the macroeconomic effects of ‘financialisation’ will be derived. The remainder of the paper is therefore organised as follows. In Section 2 we deal with the channels of influence of ‘financialisation’ on the macroeconomy focussing on the effects on firms’ investment, on households’ consumption and on income distribution, and we briefly review the integration of these transmission channels into Post-Keynesian macroeconomic models. Section 3 then develops a simple stock-flow consistent Post-Kaleckian closed-economy distribution and growth model, as an extension of the model proposed by Bhaduri/Marglin (1990), and discusses the short- and medium-run effects of ‘financialisation’. Section 4 summarises the main results and concludes.

2. ‘Financialisation’: transmission channels and potential growth regimes

In order to discuss potential growth regimes in a period of ‘financialisation’ within a Post-Keynesian/Post-Kaleckian distribution and growth model, we first have to analyse the effects of ‘financialisation’ on the main building blocks of such a model. This concerns, firstly, the effects on firms’ investment in capital stock, secondly, the effects on households’ consumption, and thirdly, the effects on income distribution.

2.1 ‘Financialisation’ and firms’ investment

Regarding the effects of ‘financialisation’ on investment decisions of the corporate sector, Post-Keynesians, such as Crotty (1990), Dallery (2008), or Stockhammer (2005-6), have

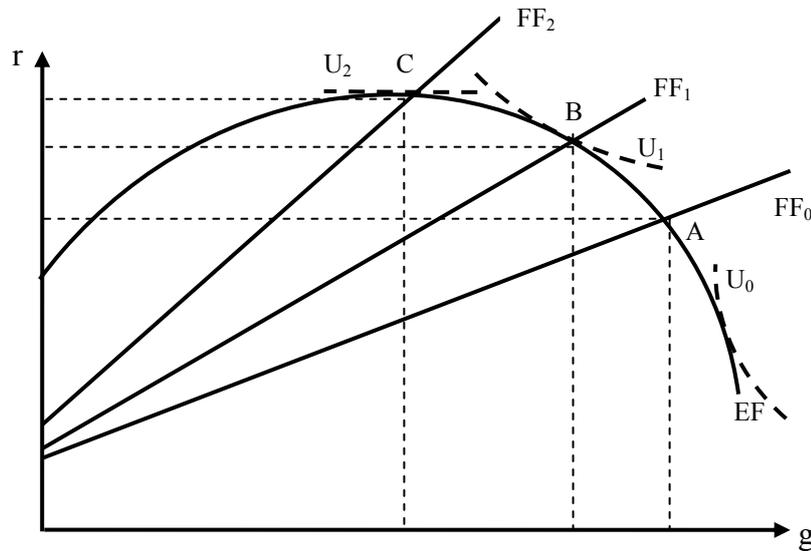
highlighted the importance of the ‘owner-manager conflict’ inherent to large corporations.⁵ This conflict arises from the postulation of a ‘growth-profit trade-off’ at the firm level, implying that shareholder value orientation is likely to be associated with a high preference for short-term profitability and with a low propensity to invest in real capital stock by firms. Due to diversified portfolios, ‘stockholders typically have only a fleeting relation with any particular enterprise’, as Crotty (1990, p. 534) has argued, and care much more about the current profitability than the long-term expansion and survival of a particular firm. In fact, with ‘financialisation’, various mechanisms have been designed, on the one hand, to impose restrictions on managements’ ability to seek expansion, and, on the other hand, to change management’s preferences themselves and align them to shareholders’ profit maximisation objective. Management’s desire for growth is contained through, in particular, higher dividend payouts demanded by shareholders, a weaker ability of firms to obtain new equity finance through stock issues (which tend to decrease share prices), a larger dependence on leverage, and an increased threat of hostile takeovers in a liberalised market for corporate control. Simultaneously, financial market-oriented remuneration schemes have been developed to align management’s preferences to shareholders’ objectives. As an overall result, it has been argued that the traditional managerial policy of ‘retain and invest’ is replaced by the shareholder-oriented strategy of ‘downsize and distribute’ (Lazonick/O’Sullivan, 2000).

Graphically, these new developments can be analysed on the basis of Figure 1. The lines given by FF_i reflect different finance constraints faced by the managers of the firm in their investment decision. These finance frontiers indicate the maximum rate of accumulation (g) that firms can finance with a given profit rate (r). Seen from a different angle, they determine

⁵ The following arguments on ‘financialisation’ and the Post-Keynesian theory of the firm draw on Hein/van Treeck (2008).

the profit rate that is necessary for firms to be able to finance the desired accumulation rate under the conditions of incompletely competitive financial markets, as has been suggested by Kalecki's (1937) 'principle of increasing risk'.

Figure 1: Shareholder value orientation and investment decisions at the firm level



Source: Hein/van Treeck (2008, p. 4)

The second constraint faced by managers is the expansion frontier (*EF*). It indicates the profit rate that can be realised with a particular growth strategy. The expansion frontier is assumed to be upward sloping for low accumulation rates and downward sloping for higher rates (Lavoie, 1992, pp. 114-116). The upwards sloping part is caused by dynamic economies of scale and scope allowing for a higher rate of profit when accumulation is rising: Investment in capital stock allows for the introduction of new and more productive means of production; profitability and survival of the firms in an uncertain environment will depend on sheer size; and rapid expansion in novel markets will allow for temporary monopoly profits. The negatively sloped segment of the expansion function is due to managerial inefficiencies reducing the rate of profit: At a certain speed of expansion, management will have difficulties in handling the expansion process (Penrose effect); internal expansion in a certain market may

be costly because of rising advertising, product innovation and research and development costs; and external expansion and diversification into further markets, in particular foreign markets, may be limited by management's lack of knowledge about new markets and products.

In the traditional Post-Keynesian analysis of the firm, the accumulation decision is determined by the point of intersection of the finance frontier and the expansion frontier (Lavoie 1992, p. 117). In this view, firms are interested in the profit rate only insofar as a higher profit rate eases the finance constraint and hence allows for faster expansion. In contrast, with 'financialisation' it seems more appropriate to consider the possibility that the desired accumulation rate, given by preferences, is below the maximum rate, given by the finance constraint. Therefore, Figure 1 is completed by a set of indifference curves, U_i , reflecting different preferences of managers faced with the growth-profitability trade-off in the downward-sloping segment of the expansion frontier (see also Dallery, 2008; Stockhammer, 2005-6).⁶

With higher shareholder value orientation, one may expect two things to happen:

1. Shareholders impose higher distribution of profits on firms, i.e. a higher dividend payout ratio and hence a lower retention ratio and/or a lower contribution of new equity issues to the financing of investment, or even share buybacks.
2. Managers' (firms') preference for growth is weakened as a result of remuneration schemes based on short-term profitability and financial market results.

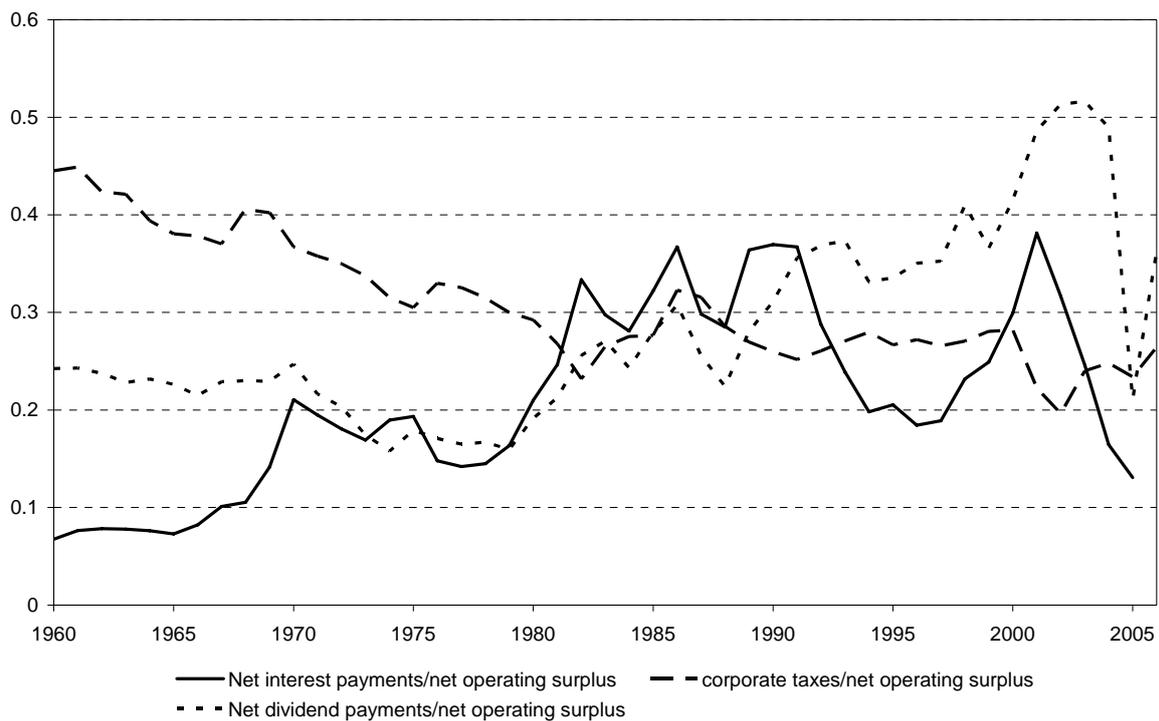
⁶ One may also interpret the indifference curves as reflecting the preferences of the firm as a whole, determined by a compromise between shareholders and managers.

The first effect will imply a counter-clockwise rotation of the finance frontier in Figure 1. The second effect can be represented as a flattening of the indifference curve. Starting from a situation (point A) in which shareholders' influence on the firm's preferences is very weak (U_0) and the firm's accumulation decision is restricted only by a relatively loose finance constraint (FF_0), the effects of increasing shareholder value orientation can be interpreted as follows. The new accumulation decision will be determined either by the new preferences alone (U_2 with FF_0 or FF_1 (point C) or U_1 with FF_0 (point B)), or by the new finance constraint alone (U_0 with FF_1 (point B) or U_0 or U_1 with FF_2 (point C)), or by preferences fully compatible with constraints (U_1 with FF_1 (point B) or U_2 with FF_2 (point C)).

Taking a look at the development in the US, the economy which is generally considered to have been finance-dominated or characterised by an increasing degree of 'financialisation' since the early 1980s (Krippner, 2005), we indeed find evidence for changing management behaviour of the non-financial corporate sector as indicated above. Net-dividend payments as a percentage of net operating surplus has shown a tendency to increase, albeit with cyclical fluctuation, since the early 1980s, as can be seen in Figure 2. The share of tax payments in net operating surplus has declined since the early 1960s and the share of net-interest payments has seen an upwards shift in the early 1980s. Considering the proportions of different means of finance in the financing of gross investment of the non-financial corporate sector, Table 1 shows that internal means of finance have historically supplied the bulk of financial means. Net issue of equities played a minor role in financing during the 1960s and 1970s. Since the early 1980s, however, net issue of equities has contributed negatively to the financing of real investment: The non-financial corporate sector as a whole has bought back stocks and shares in this period. Since the early 1980s, also the contribution of bonds to financing capital investment has increased. Taken together, the negative contribution of net equity issues and

the rising share of bond finance imply that non-financial corporations have substituted own capital by borrowed capital. This has made the gross debt-capital stock ratio increase since the early 1980s, as Figure 3 shows. Financial fragility of the corporate sector in the face of negative external shocks has thus increased in the period of rising ‘financialisation’.⁷

Figure 2: Use of net-operating surplus, non-financial corporations, USA, 1960-2006



Source: van Treeck/Hein/Dünhaupt (2007) (Flow of Funds, NIPA; authors' calculations)

⁷ See also Crotty (2005) for a description of changing behaviour of non-financial corporations which started to increase investment in financial assets, to shorten their planning horizons and to decrease long-term real investment.

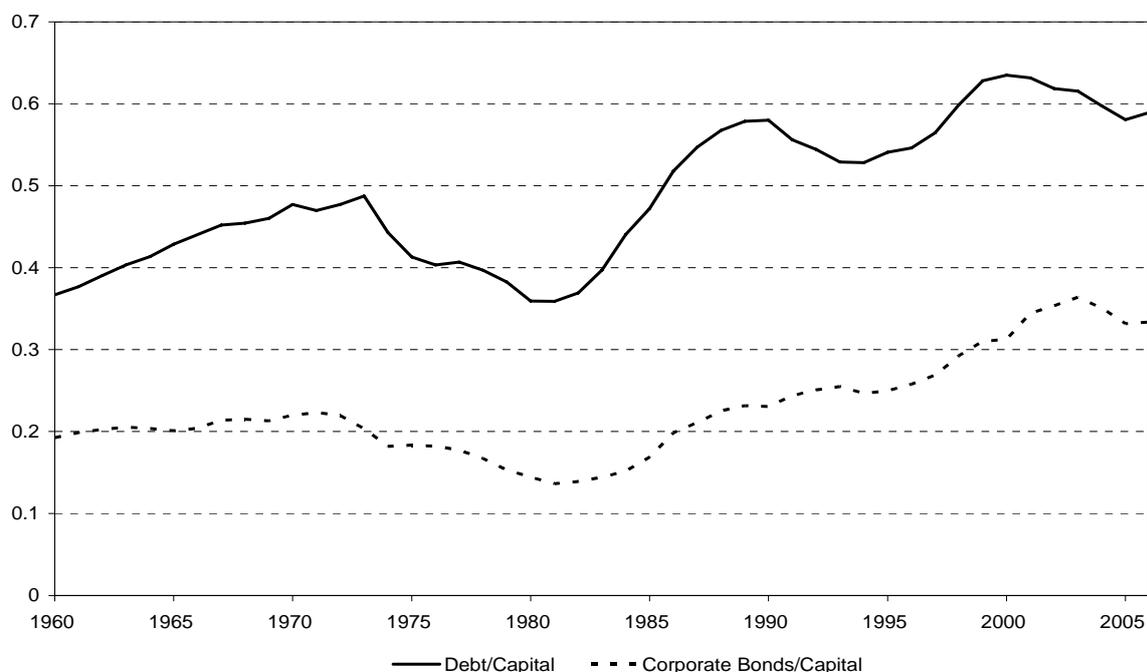
Table 1: Proportion of different means of finance in the financing of gross capital investment, non-financial corporations, USA, 1960-2006

	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-06
Internal	1.06	0.90	0.82	0.93	0.90	1.01	1.01	0.93	1.02
Equities	0.02	0.01	0.08	0.02	-0.04	-0.26	-0.03	-0.17	-0.26
Bonds	0.13	0.17	0.16	0.16	0.12	0.24	0.12	0.24	0.20
Credit	0.05	0.14	0.21	-0.03	0.07	0.13	-0.06	0.07	0.06
from banks	0.10	0.18	0.23	0.05	0.14	0.19	-0.06	0.10	0.04
trade credit	-0.05	-0.04	-0.03	-0.08	-0.07	-0.06	0.01	-0.03	0.01
Other	-0.02	-0.08	-0.18	0.13	0.05	0.17	-0.05	-0.15	-0.07
Statistical Discrepancy	-0.23	-0.14	-0.09	-0.21	-0.10	-0.29	0.01	0.07	0.07

Notes = Calculations based on 'net-flow methodology' (see table 1 and, for further details, Corbett/Jenkinson, 1997). Increase in liabilities denoted by '+' sign, increase in assets by '-' sign. Internal funds = retained earnings + capital consumption allowance + foreign earnings retained abroad + inventory valuation adjustment (IVA) + net capital transfers; equities = net new equity issues – money market fund shares – security RPs – mutual fund shares; bonds = municipal securities + corporate bonds – treasury securities – agency- and GSE-backed securities – municipal securities; credit from banks = bank loans n.e.c. + other loans and advances + mortgages – foreign deposits – checkable deposits and currency – time and savings deposits – mortgages; trade credit = trade payables – consumer credit – trade receivables; other = miscellaneous liabilities – miscellaneous assets + commercial paper – commercial paper.

Source: van Treeck/Hein/Dünhaupt (2007), van Treeck (2009b) (Flow of Funds, table F. 102; authors' calculations).

Figure 3: Gross debt-capital stock ratio, non-financial corporations, USA, 1960 - 2006



Note: Credit market instruments/ (Equipment and software + replacement cost value of structures);
Corporate Bonds/(Equipment and software + replacement cost value of structures)

Source: van Treeck/Hein/Dünhaupt (2007) (Flow of Funds; authors' calculations).

Econometric evidence in favour of the hypothesis that ‘financialisation’ has caused a slowdown in capital accumulation has been presented by Stockhammer (2004), van Treeck (2008) 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 in management’s preferences. Short-term financial investment is hence preferred 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 the one 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. Different from Stockhammer and van Treeck, 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 short-termism 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 expense, cash dividends, purchase of firms' own stock) on investment is negative for the whole panel.

2.2 'Financialisation' and households' consumption

A second aspect of 'financialisation' stressed in various models is the link between wealth, household indebtedness and consumption. Such a mechanism has already been included by Palley (1994; 1996, pp. 201-215) into a business cycle model: Rising debt is initially stimulating aggregate demand transferring purchasing power from high income households with a low marginal propensity to consume to low income households with a high propensity to consume. But interest payments on debt then become a burden on aggregate demand, because purchasing power is redistributed into the opposite direction.

Dutt (2005; 2006) has analysed the effects of 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 similar mechanism as Palley did. Credit-based consumption is facilitated by the deregulation of the financial system allowing home equity lending, adjustable consumer loans and securitization, thus stimulating effective demand and growth. However, since in the model the burden of servicing debt falls exclusively upon workers, the potentially contractive long-run effect of consumer borrowing is corroborated because income is redistributed to the rich, who receive the interest income and have a lower propensity to consume.

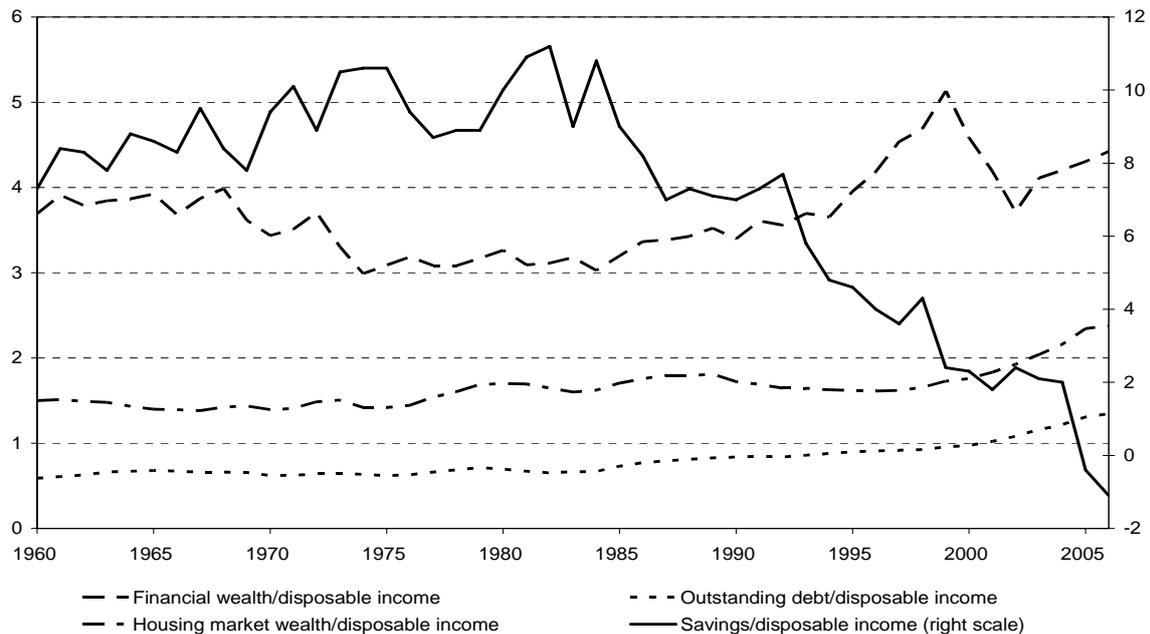
Bhaduri/Laski/Riese (2006) explicitly focus on the wealth-effect on consumption, implying that increases in financial wealth stimulate households' willingness to consume. However,

stock market wealth is purely ‘virtual wealth’ and increasing consumption is hence associated with increasing indebtedness of private households. Therefore, financial deregulation may improve the perspectives of maintaining a wealth-based credit boom over a considerable period of time. However, finally the expansive effects of consumer borrowing may be overwhelmed in the long run by rising interest obligations, which reduce households’ creditworthiness and may eventually require higher saving by households.

Taking again a look at the development in the US since the early 1980s, we find that rising ratios of financial and housing market wealth to disposable income have been associated with a dramatic decline in the average propensity to save out of disposable income, as can be seen in Figure 4. In particular, the new economy boom saw a halving of the average propensity to save – as Maki/Palumbo (2001) have shown, in particular because of a considerable decline in the propensity to save out of income of the richest households. When the stock market bubble burst in 2000/01, the increase in housing prices took over and allowed to sustain the consumption boom. The average propensity to save out of disposable household income became even negative. And this time, in particular low-income households went into debt, with creditors and debtors expecting ever growing housing prices which seemingly generated the collateral for rising credit (Joint Center for Housing Studies, 2006). The recent financial crisis, starting with the subprime mortgage collapse in the US in 2007 and spreading all over the world since then, has been the outcome of this process.⁸

⁸ See Palley (2008), Papadimitriou (2008), van Treeck (2009b), van Treeck/Hein/Dünhaupt (2007), and Weller/Sabatini (2008) for a more in depth analysis.

Figure 4: Personal wealth, debt and saving relative to disposable income of private households, USA 1960-2006



Source: van Treeck/Hein/Dünhaupt (2007), van Treeck (2009b) (Flow of Funds Accounts, table B.100; NIPA (Bureau of Economic Analysis), table 2.1; authors' calculations).

Econometric studies have shown that (financial) wealth is a statistically significant determinant of consumption, in particular in those countries with a capital-market based financial system, but also in bank-based financial systems. For the US, Boone/Giorno/Richardson (1998), Ludvigson/Steindel (1999), Davis/Palumbo (2001), and Mehra (2001) have estimated marginal propensities to consume out of wealth between 3% and 7%, applying time series econometrics to different periods.⁹ Edison/Slok (2001) find that the marginal propensity to consume out of wealth in North American countries and the UK (1990-2000) has been between 4% and 5.2%, whereas in Continental European countries the range of this value has been between 1% and 3.8%. The study by Boone/Girouard (2002) does not confirm this difference. The authors find marginal propensities to consume out of wealth between 2% and 4% 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

⁹ See also the discussion in Poterba (2000).

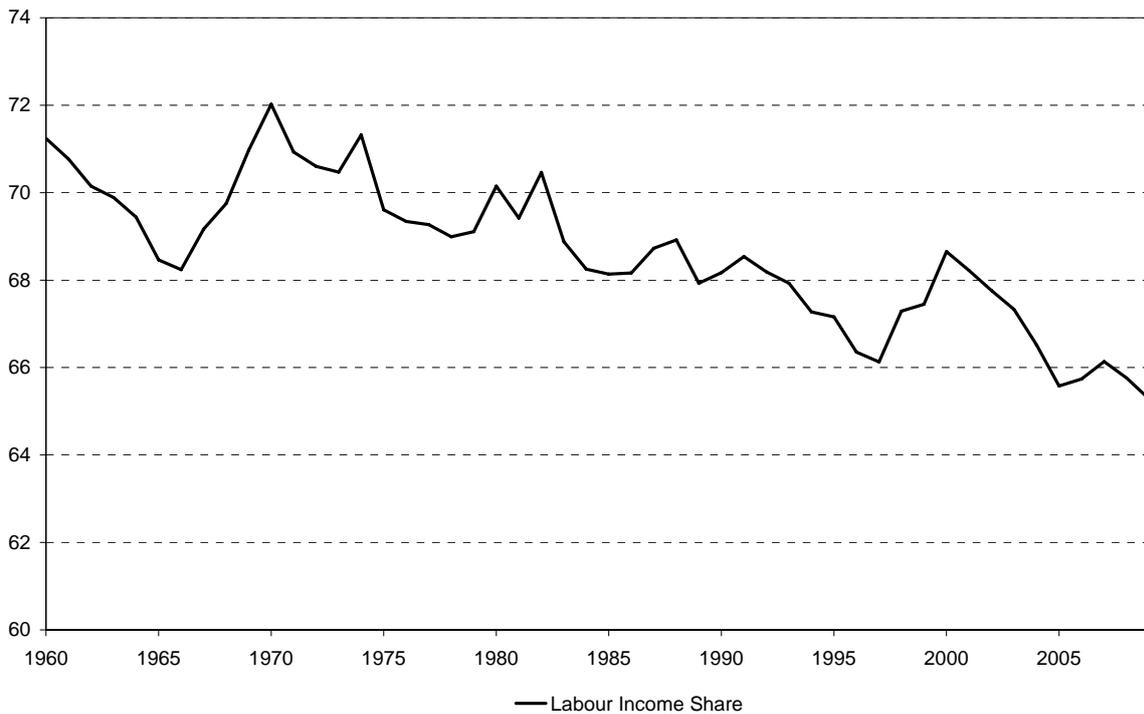
(1979-1999), Dreger/Slacalek (2007) obtain that the marginal propensity to consume out of financial and housing wealth in capital-market based countries has been 3.7%, whereas in bank-based countries it has only been 0.7%. Ludwig/Slok (2001; 2004) get a qualitatively similar result for 16 OECD countries (1960-2000) making use of cointegrated panel estimations. The elasticity of consumption with respect to an increase in stock and house market prices in capital-market based countries is considerably higher than the one in bank-based countries, according to their estimations. They also find that the elasticities have increased over time for both country groups.

2.3 ‘Financialisation’ and distribution

A third channel of influence of ‘financialisation’ from a Post-Keynesian perspective is on different forms of income redistribution. Regarding functional distribution of income between gross profits, including retained profits, dividends and interest, on the one hand, and wages, on the other hand, it may be expected that shareholders’ demand for higher distributed profits will be passed through to workers with the effect of a declining share of wages in national income (Boyer, 2000). Hein (2008b, 2008c) and Hein/van Treeck (2007) have argued that at least in the medium run, when rising dividend payments to rentiers have become a permanent feature, the mark-up in firms’ price setting is likely to become dividend-elastic. Decreasing price competition in the goods market associated with mergers and acquisitions and hostile takeovers in the corporate sector, and in particular weakened bargaining power of labourers and increasing (threat of) unemployment caused by a policy of ‘downsize and distribute’ (Lazonick/O’Sullivan, 2000) will improve the conditions for a rising mark-up in the face of a rising dividend rate. Therefore, in the medium to long run increasing shareholder power favours redistribution at the expense of the labour income share. In fact, in the US this is what

seems to have happened since the early 1980s when the labour income share displayed a tendency to decline, as can be seen in Figure 5.

Figure 5: Labour income share (percent of GDP at factor costs), USA, 1960 - 2007



Source: AMECO data base, European Commission (2008)

However, the question remains whether the decline in the labour income share and the associated rise in the gross profit share have meant an increase in the income share of shareholders/rentiers or whether firms' retained profits have gained from redistribution at the expense of labour. In a study focussing on the distribution effects of changes in the interest rate, Argitis/Pitelis (2001) find that a falling wage share in the non-financial business sector was accompanied by a rising share of interest payments in profits in this sector until the early 1990s in the UK, but not in the US. Applying time series econometrics, however, they obtain the general result that the nominal interest rate negatively affects the share of industrial profits in both countries. Further determinants are nominal wages and the bargaining power of labour

unions, measured by unemployment and strike intensity. Therefore, according to these results, a rise in interest payments to rentiers does not seem to harm the wage share directly but rather seems to compress industrial profits. However, if rising interest payments are accompanied by weakened bargaining power of labour unions and lower wage demands, the redistribution will take place at the expense of labour income.

Studying the development of the profit rate of non-financial corporations in France and the US (1960-2001), Dumenil/Levy (2001, 2005) have shown that the rise in this profit rate since the early 1980s has been mainly due to the rise in net real interest payments. Excluding net real interest payments from profits, the profit rate of the non-financial corporate sector has remained constant in France and has increased only slightly in the US.¹⁰ Therefore, rising interest payments have had to be paid for by a reduction in the labour income share and it has thus been mainly the rentiers class which has benefited from redistribution at the expense of labour.

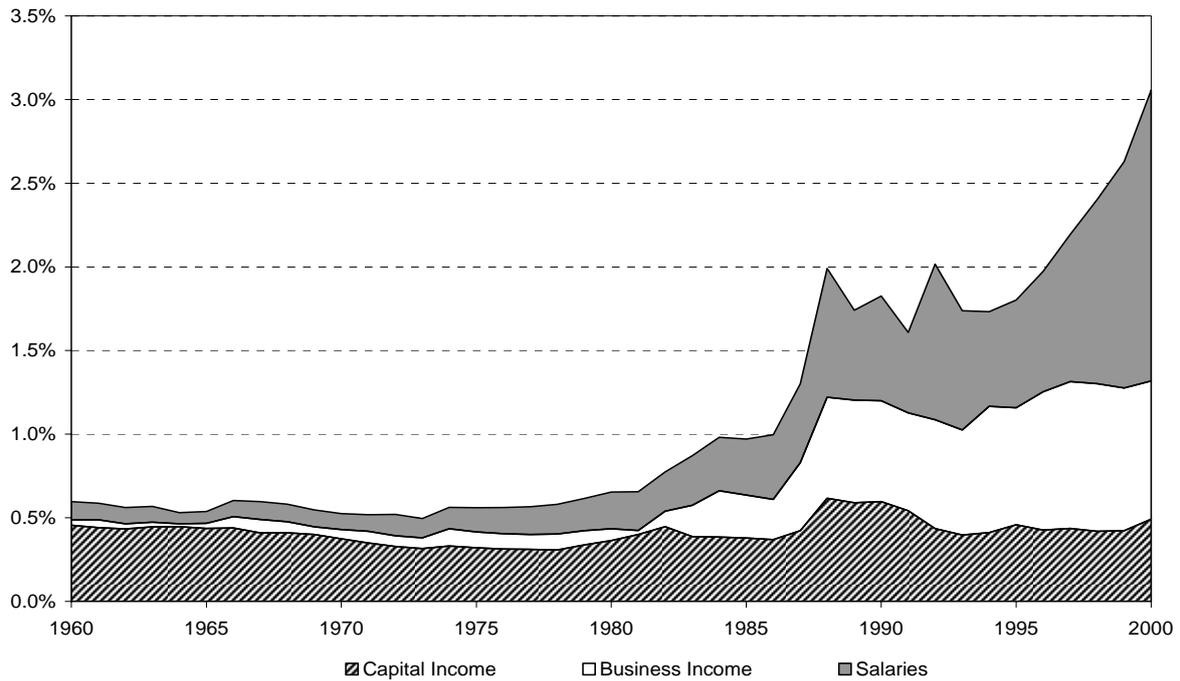
In a more general study on 29 OECD countries (1960-2000) focussing on the development of the share of rentiers' income in GDP, Epstein/Power (2003) confirm the results by Dumenil/Levy. Epstein/Power show that the share of rentiers' income in GDP increased at the expense of the wage share in most countries during the 1980s until the early 1990s. In their study, rentiers' income is more broadly defined as the sum of profits of the financial sector plus interest income of the non-financial sector and households. Since nominal interest payments also compensate for capital losses due to inflation, Epstein/Jayadev (2005) have extended the analysis for 15 OECD countries (1960-2000), correcting the share of rentiers'

¹⁰ The profit-rate of the financial sector in the US, however, has increased significantly since the early 1980s exceeding the profit rate of the non-financial sector by a considerable amount since then (Dumenil/Levy, 2004a).

income in GDP for inflation. Applying this method, they mainly confirm the earlier results by Epstein/Power (2003).

A further implication of ‘financialisation’ and increasing shareholder value orientation for income distribution appears to be an increasing gap between manager salaries and blue collar wages. Palley (2006) and Lavoie (2006) have introduced this phenomenon of ‘cadrisme’ (Lavoie, 2006) into Post-Keynesian models of growth and distribution and have derived different potential regimes for the effect of increasing manager salaries vis-à-vis blue collar wages. Empirically, Piketty/Saez (2003; 2006), in a long-run study for the US (1913-2002) based on income tax data, have shown that the increase in the income share of the 0.01 percent richest households from the early 1980s until 2000 was mainly due to the increase in top-management salaries (see Figure 6). Increasing income inequality since the early 1980s has hence been associated with the phenomenon of the ‘working rich’.¹¹

¹¹ See Dumenil/Levy (2004b) for more extended interpretation of the results by Piketty/Saez (2003) against the background of ‘financialisation’.

Figure 6: The top-0.01-percent income share and composition in the USA, 1960 - 2000

Source: Piketty/Saez (2006)

2.4 'Financialisation' and the macroeconomic regime

Based on the contradictory effects of 'financialisation' on investment and consumption and on its impact on distribution, different potential macroeconomic growth regimes have been derived in the literature. We sketch these regimes in turn.

1. Some authors have considered the possibility of a 'finance-led growth' regime (Boyer, 2000), in which shareholder value orientation has an overall positive impact on growth. The condition for this is a very high propensity to consume out of rentiers' income and/or a very strong wealth effect on consumption, implying a strong effect of credit-financed consumption. This compensates for the loss of consumption caused by the redistribution at the expense of

labour. In turn, it also stimulates investment via the accelerator mechanism and over-compensates the direct negative effect of shareholder value orientation on real investment.¹²

2. Other authors, starting with Cordonnier (2006), have argued that a regime of ‘profits without investment’ might emerge. In this regime, rising interest or dividend payments of firms to rentiers are associated with a rising profit rate and with a rising rate of capacity utilisation, but with a falling rate of capital accumulation. Due to a high propensity to consume out of rentiers’ income and/or out of wealth, again implying rising importance of credit-financed consumption, redistribution in favour of rentiers is able to compensate for the loss of consumption demand caused by a falling labour income share. But it is insufficient to stimulate capital accumulation in the face of increasing shareholder value orientation of management and the decrease of firms’ internal means of finance associated with high dividend payments or share buybacks.¹³

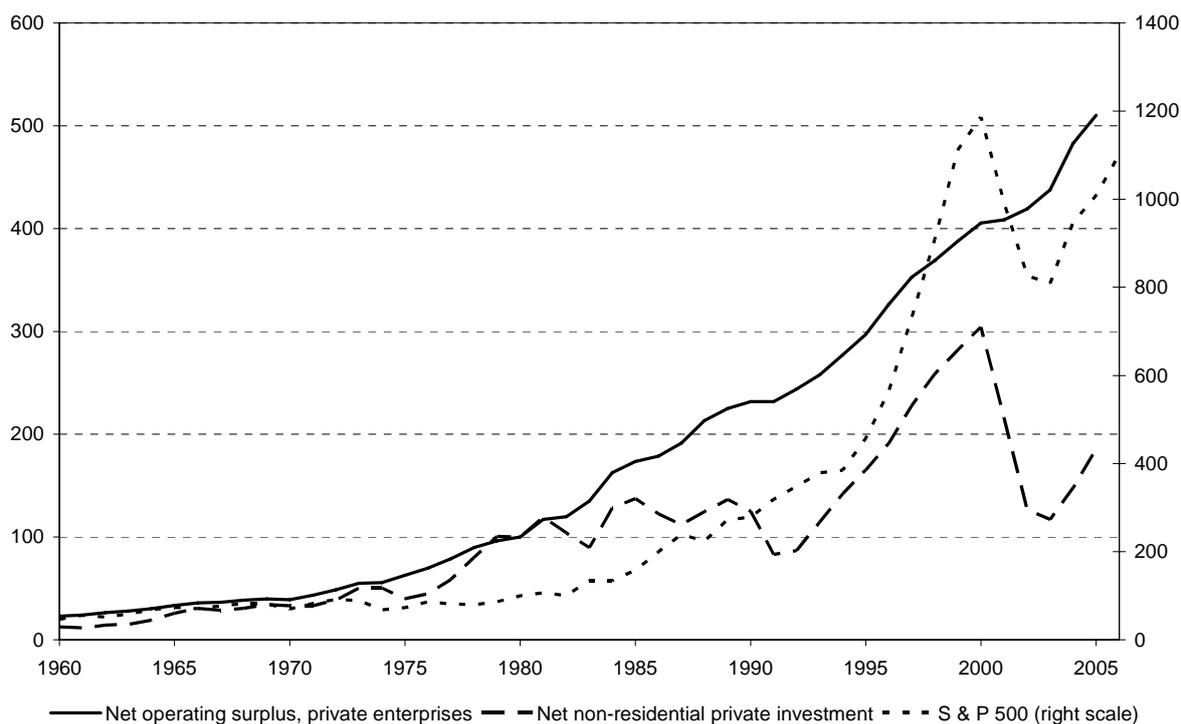
3. Finally, some authors have shown that a ‘contractive’ regime may arise, in which rising interest and dividend payments to rentiers have a restrictive effect on the rates of capacity utilisation, profit and capital accumulation (Hein, 2008b, 2008c; Hein/van Treeck, 2007; van Treeck, 2008). Due to a low rentiers’ propensity to consume, and implicitly a low wealth effects and hence little importance of credit-based consumption, rising rentiers’ income is unable to compensate for the reduction in consumption demand caused by redistribution at the expense of labour in this regime. And managements’ shareholder value orientation together with the loss of internal means of finance also causes a slowdown in capital accumulation.

¹² See also Aglietta (2000), Hein (2008b, 2008c), Hein/van Treeck (2007), Stockhammer (2005-6) and van Treeck (2008) for the discussion of the conditions for such a regime within different model frameworks.

¹³ See Hein (2008b, 2008c), Hein/van Treeck (2007) and van Treeck (2008) for such a regime within different model setups.

Empirically, the ‘profits without investment’ regime of weak investment in the face of prospering profits seems to have dominated the development in the US since the early 1980s, only interrupted by the new economy boom in the second half of the 1990s when investment soared as well, as Figure 7 and the estimations by van Treeck (2008) for the US suggest.

Figure 7: Investment, profits, and share prices, USA, 1960-2006, 1980 = 100



Source: van Treeck (2009b) (NIPA, table 1.10; Fixed Assets Tables, table 5.9; author’s calculations).

Given a specific parameter constellation a regime of ‘profits without investment’ seems to be a viable accumulation regime for a considerable period of time. However, major drawbacks of the analysis of the papers mentioned so far have to be noticed. In particular, in these papers the effects of changes in interest and dividend payments on firms’ debt- and equity-capital ratios and hence on the financial structure are not considered explicitly. That is why recently some authors have started to study the impacts of ‘financialisation’ in stock-flow-consistent models, pioneered by Lavoie/Godley (2001-2). These models take into account stock-flow interactions of financial and real variables, either analytically or by means of model

simulations (Godley/Lavoie, 2007, pp. 378-444; Hein 2008c; Lavoie, 2008; Skott/Ryoo, 2008a, 2008b; Taylor, 2004, pp. 272-278; van Treeck 2009a).¹⁴

As has been reviewed in more detail in Hein/van Treeck (2008), these stock-flow consistent models are also able to generate the three potential accumulation regimes mentioned above. In order to obtain a ‘finance-led growth’ regime, these models have to rely on strong effects of Tobin’s q (or Kaldor’s valuation ratio) in the investment function and on a strong wealth effect in the consumption function.¹⁵ Under these conditions, the increase in stock market prices, associated with a higher target rate of profit imposed on the firm by shareholders, share buybacks, increasing dividend payments to rentiers and redistribution at the expense of labour, feeds back positively both on investment and consumption spending and may dominate the overall result (Skott/Ryoo, 2008a, 2008b; van Treeck 2009a). However, if the models do away with a strong coefficient on Tobin’s q in the investment function, ‘profits without investment’ (van Treeck, 2009a) or even ‘contractive’ accumulation regimes are generated (Godley/Lavoie, 2007, pp. 378-444; Lavoie, 2008).

We doubt that in an era of ‘financialisation’ an increase in Tobin’s q triggered by increasing shareholder power, share buybacks, increasing dividend payments and enforced changes in management’s preferences should be considered to cause rising real investment. Medlen (2003) provides empirical support for our doubts. According to his observations, there was a positive correlation in the US (1968-2001) between Tobin’s q , on the one hand, and the relationship between mergers to new real investment, on the other hand. This is the exact

¹⁴ See also the earlier approach by Skott (1988; 1989, pp. 114-140).

¹⁵ On Tobin’s q see Brainard/Tobin (1968) and Tobin (1969). For a discussion see Crotty (1990) and Tobin/Brainard (1990). On Kaldor’s valuation ratio see Kaldor (1966) and the discussion in Lavoie (1998).

opposite of what Tobin's q would suggest, because a rise in Tobin's q should be correlated with higher real net investment relative to mergers and acquisitions.¹⁶

The stock-flow consistent models referred to above also do not pay much attention to changes in distribution between capital and labour caused by changes in the financial regime and the related macroeconomic effects via consumption and investment. And finally, also instability problems regarding the financial structure of the corporate sector have been hardly addressed in these models. Therefore, in the following section we present a simple model which tackles some of these issues.

3. 'Financialisation' in a simple comparative static, stock-flow consistent Post-Kaleckian distribution and growth model

In this section we develop a simple analytical stock-flow consistent Post-Kaleckian distribution and growth model. In this model, the transmission channels of financialisation discussed above are integrated in the following way. 1. 'Financialisation' is assumed to affect distribution between firms and rentiers in the short run, and distribution between capital and labour through a dividend-elastic mark-up in firms' price setting in the medium run. 2. Firms' investment is affected through the channels discussed above, the 'management's preference channel' and the 'internal means of finance channel'. 3. Consumption is influenced via distribution of dividends in the short run and via a reduction in the labour income share in the medium run of the model. 4. Finally, the development of firms' outside finance-capital ratio is

¹⁶ Generally, empirical studies have difficulties in finding a statistically significant and empirically relevant effect of Tobin's q on investment. See, for example, Bhaskar/Glyn (1995), Chirinko (1993) and Ndikumana (1999).

endogenised in order to check the medium-run stability and viability of the potential accumulation regimes.

Our model has a medium-run horizon, because we allow debt and equity held by rentiers to vary relative to the capital stock. But we do not consider any effect of changes in the dividend payments (relative to interest payments) on households' portfolio choice between credit/bonds and shares. In our view, portfolio choice seems to be dominated by long-run institutional and habitual factors, such as the pension system (pay as you go vs. capital-based), the stock market culture, and sentiments towards risk.¹⁷ Therefore, what we consider in the medium-run analysis of our model is the development of the ratio of debt plus equity held by rentiers relative to the capital stock and its feedback effects on capital accumulation, without any deeper investigation into the composition of rentiers' financial wealth. For the reasons given in the previous section, our model also does neither include any positive effect of Tobin's q on firms' investment in capital stock. Nor do we consider wealth effects on consumption and credit-financed consumption expenditures, in order to keep the model as simple as possible.

The model we employ in this section is an extension of the basic Kaleckian model suggested by Bhaduri/Marglin (1990), into which financial variables are integrated in a way similar to the integration of monetary variables into this model by Hein (2007). We have chosen the Bhaduri/Marglin model as a starting point, because the basic structure of this model allows for 'wage-led' or 'profit-led' demand and growth regimes. The model results are hence not restricted to the usual Kaleckian wage-led demand and growth regimes.¹⁸

¹⁷ See van Treeck/Hein/Dünhaupt (2007) for a comparison of the development in Germany and the US. In Germany, direct and indirect holding of stock and shares by private households is still very low compared to the US and has developed rather slowly, although stock market prices have increased more than tenfold since the early 1980s.

¹⁸ For a similar approach integrating 'financialisation' issues into the 'stagnationist' version of the Kaleckian distribution and growth model, which is more in line with the original ideas of Kalecki, see Hein (2008c).

3.1 The basic model

We assume a closed economy without economic activity of the state. Under given conditions of production, there is just one type of commodity produced which can be used for consumption and investment purposes. There is a constant relation between the employed volume of labour (L) and real output (Y), i.e. there is no overhead-labour and no technical change, so that we get a constant labour-output ratio (a). The capital-potential output ratio (v), the relation between the real capital stock (K) and potential real output (Y^v), is also constant. The capital stock is assumed not to depreciate. The rate of capacity utilisation (u) is given by the relation between actual real output and potential real output. The basic model can be described by the following equations.

Pricing and distribution

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

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

$$r = \frac{\Pi}{pK} = \frac{\Pi}{pY} \frac{Y}{Y^v} \frac{Y^v}{K} = hu \frac{1}{v}, \quad (3)$$

Financing of capital stock and rentiers' income

$$pK = B + E^R + E^F, \quad (4)$$

$$\gamma = \frac{B + E^R}{pK}, \quad (5)$$

$$\phi = \frac{E^F}{pK}, \quad (6)$$

$$\Pi = \Pi^F + R, \quad (7)$$

$$R = e(E^R + B), \quad (8)$$

Saving, investment and goods market equilibrium

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

$$g = \frac{I}{pK} = \alpha + \beta u + \tau h - \theta e\gamma, \quad \alpha, \beta, \tau, \theta \geq 0, \quad (10)$$

$$g = \sigma, \quad (11)$$

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

Variables:

p: price; m: mark-up; e: rentiers' rate of return on equity and bonds; w: nominal wage rate; a: labour-output ratio; h: profit share; Π : gross profits; Y: real income; r: rate of profit; K: real capital stock; Y^v : 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 rate; S: saving; s_R : propensity to save out of rentiers' income; g: rate of capital accumulation; I: investment; $\alpha, \beta, \tau, \theta$: coefficients in the investment function.

Writing w for the nominal wage rate, we assume that firms set prices (p) according to a mark-up (m) on constant unit labour costs up to full capacity output. Following Kalecki (1954, pp. 17-18), the mark-up is determined by the degree of price competition in the goods market and by the relative powers of capital and labour in the labour market (equation 1). 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 profit rate (r) relates the annual flow of profits to the nominal capital stock and can be decomposed into the rate of capacity utilisation, the profit share, and the inverse of the capital-full capacity output ratio (equation 3).

The pace of accumulation in our model is determined by firms' decisions to invest, independently of saving, because firms have access to short-term (or initial) finance for production purposes supplied by a developed banking sector.¹⁹ We assume that 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). Part of firms' liabilities ($B+E^R$) is therefore held by 'outsiders' to the firm, i.e. rentiers' households, whereas another part (E^F) is controlled by 'insiders', either by the management or by owner-managers. Since in our model we assume prices in goods and financial markets to be constant – capital gains are hence omitted from the analysis –, rentiers are interested in short-run maximum dividend and interest payments, whereas management favours long-term growth of the firm, following the arguments presented in Section 2.1. 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). We assume these ratios to be constant in the short run, but to be variable and hence to be endogenously determined in the medium run.

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

¹⁹ The distinction between short-term (or initial) finance for production purposes and long-term (or final) finance for investment purposes, not dealt with in the present paper, can be found in the monetary circuit approach. See Graziani (1989; 1994), Hein (2008a, pp. 70-79), Lavoie (1992, pp. 151-169), and Seccareccia (1996; 2003).

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.²⁰ 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 favour of retained earnings for firms' real investment and growth purposes. Since we omit the effects of rentiers' portfolio choice from our considerations - and in order to simplify further analysis -, in what follows we synthesise dividend and interest payments to rentiers and consider just one rentiers' rate of return on bonds and equity (e), which together with the stock of equity and bonds held by rentiers determines rentiers' income (equation 8). The rentiers' rate of return is determined by the power struggle between managers and rentiers and is hence the crucial variable when it comes to the discussion of the effects of increasing shareholder power vis-à-vis management and labourers.

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 the determinants of the mark-up are affected as well by the rise of shareholder power, in particular the degree of price competition in the goods market and the relative power of workers and labour unions in the labour market.²¹ If these changes occur, distribution between gross profits, as the sum of retained

²⁰ 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 (2008a).

²¹ See Hannsgen (2004; 2006a; 2006b) and Lima/Setterfield (2008) for empirical work on the cost-push channel of changes in the interest rate ('Gibson's paradox' or 'Wright Patman effect'), and Hein (2008a) for an overview

profits, interest and dividends, on the one hand, and wages, on the other hand, will be affected (equation 2). Discussing the effects of a rising rentiers' rate of return caused by rising shareholder power, we distinguish two cases: 1. the dividend-inelastic mark-up in which a rising rentiers' rate of return leaves the gross profit share in national income untouched and only affects firms' retained profits adversely, and 2. the dividend-elastic mark-up in which an increasing rentiers' rate of return affects distribution between gross profits and wages.

In the face of increasing shareholder power, we consider the mark-up to be dividend-inelastic in the short run. But in the medium run, the mark-up is likely to become dividend-elastic because of decreasing price competition in the goods market associated with mergers and acquisitions and hostile takeovers in the corporate sector, and in particular because of weakened bargaining power of labourers caused by a policy of 'downsize and distribute' and increasing (threat of) unemployment (Lazonick/O'Sullivan, 2000). The profit share will hence become elastic with respect to the rentiers' rate of return in our model.

In order to simplify the analysis, we assume a classical saving hypothesis, i.e. labourers do not 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 rate (σ) in equation (9) which relates total saving to the nominal capital stock. Note that an increase in the rentiers' rate of return, *ceteris paribus*, decreases the saving rate because income is transferred from firms with a saving propensity of unity to rentiers' households with a saving

of the development and implementation of this idea in Neo-Ricardian, Marxian and Post-Keynesian economics. The effects of changes in the dividend rate and hence also in the overall rentiers' rate of return can be seen from a similar angle: From the perspective of the firm these payments are costs which have to be covered by the prices set by the firm. In the face of a rising rentiers' rate of return, either the firm manages to raise the mark-up on unit labour costs and labour bears the brunt, or retained profits will have to give way, or conflict inflation will accelerate. See Hein (2008a), Hein/Stockhammer (2007), and Lima/Setterfield (2008) for theoretical models including the cost-push effects of monetary policies.

propensity of presumably less than unity. In our model, we consider only rentiers' consumption out of current income flows. As argued in Section 2.2, increasing stock prices and rising (stock market) wealth will further lower the overall saving rate, in particular when households can borrow extensively against collateral. However, this will be associated with increasing household debt which might feed back negatively on consumption. These aspects are not modelled here.

The accumulation rate (g), relating net investment (I) to the capital stock (equation 10) is based on the investment function proposed by Bhaduri/Marglin (1990). Investment decisions are assumed to be positively affected by expected sales and by unit profits (or the profit share), because both increase the (expected) profit rate. 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. 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 are given by the rentiers rate of return and the stocks of debt and equity held by rentiers, each variable being normalised by the capital stock. An increase in the rentiers' rate of return has a negative impact on investment because firms' internal funds for investment finance are adversely affected. This also limits the access to external funds in imperfect capital markets, according to Kalecki's (1937) 'principle of increasing risk'.

As argued in Section 2.1, given shareholders' desire for profits – compared to management's desire for growth of the firm – increasing shareholder power vis-à-vis management will increase the rentiers' rate of return and reduce available funds for real investment and growth of the firm. But increasing shareholder power will not only affect internal funds and thus

firms' finance constraints but also management's preferences: Management's 'animal spirits', reflected in the constant α in the investment function, will decline and might even become negative when managers are aligned with shareholders through stock option programmes and the threat of hostile takeovers in an active market of corporate control. Therefore, as argued in Section 2.1, even if the availability of internal funds were irrelevant for firms' investment decisions, increasing shareholder power would affect investment nonetheless in the negative through this 'preference channel'. Our investment function hence captures the two channels of transmission of increasing shareholder power on real investment: the 'internal finance channel' and the 'management's preferences channel'.

As mentioned above, we refrain from integrating a positive effect of Tobin's q or Kaldor's valuation ratio (or of the relationship between the dividend rate and the rate of interest) into our investment function, because an increase in the dividend rate (relative to the interest rate) indicates rising shareholder power vis-a-vis management and can hence not be seen as a stimulus for real investment, we rather assume the opposite. In our model, the shares of internal and external investment finance matter for firms' real investment, but the source of external finance (issue of shares or debt) is of minor relevance for investment decisions.

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 rate responds more elastically to changes in capacity utilisation than capital accumulation does (condition 12).

Our model generates the following goods market equilibrium values:

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

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

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

In what follows, the effects of increasing shareholder power on stable goods market equilibria only in an era of ‘financialisation’ will be discussed. Increasing shareholder power will, firstly, affect management’s preferences and hence ‘animal spirits’ in the negative, and, secondly it will be associated with an increasing rentiers’ rate of return.

3.2 Short-run effects of ‘financialisation’ and increasing shareholder power

For the discussion of the short-run effects of ‘financialisation’ and increasing shareholder power we assume γ and ϕ to be given and constant. For the medium run these ratios will be endogenised, the stability will be checked, and the effects of changes in management’s ‘animal spirits’ and the rentiers’ rate of return on these ratios will be examined. For the short run, we will also assume that firms are unable to shift increasing dividend payments to prices, because the determinants of the mark-up will change rather slowly. The mark-up and the profit share will therefore remain constant in the short run, too. This restriction will also be lifted for the medium-run considerations, and the effects of redistribution between capital and labour on investment and saving will be taken into account.

An increase in shareholder value orientation of management's investment decisions, and hence a decrease in 'animal spirits', as indicated by α in the investment function, has uniquely negative effects on the endogenous variables. This is so, because 'animal spirits' display unambiguously positive relationships with the equilibrium rates of capacity utilisation, profit and capital accumulation, 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. With the outside finance-capital ratio, as well as the mark-up and the profit share, being constant in the short run, we obtain the following effects of a change in the rentiers' rate of return on the equilibrium rates of capacity utilisation, profit and capital accumulation:

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

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

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

The effects of a change in the rentiers' rate of return may be positive or negative, depending on the parameter values in the saving and investment functions of the model. We obtain the following conditions for positive effects on the short-run equilibrium values of the system:

$$\frac{\partial u^*}{\partial e} > 0, \quad \text{if : } 1 - s_R > \theta, \quad (13a')$$

$$\frac{\partial r^*}{\partial e} > 0, \quad \text{if : } 1 - s_R > \theta, \quad (14a')$$

$$\frac{\partial g^*}{\partial e} > 0, \quad \text{if : } 1 - s_R > \theta \frac{h}{v\beta}. \quad (15a')$$

Assuming the stability condition (12) for the goods market equilibrium to hold implies for equation (15a'): $\frac{h}{v\beta} > 1$. Therefore, we get the following cases for the short-run equilibrium in Table 2.

Table 2: Short-run cases for a change in the rentiers' rate of return			
	<i>'Normal' case</i>	<i>'Intermediate' case</i>	<i>'Puzzling' case</i>
	$1 - s_R < \theta$	$\theta < 1 - s_R < \frac{\theta h}{v\beta}$	$\frac{\theta h}{v\beta} < 1 - s_R$
$\frac{\partial u}{\partial e}$	–	+	+
$\frac{\partial r}{\partial e}$	–	+	+
$\frac{\partial g}{\partial e}$	–	–	+

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. 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 (Table 3).

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 effect of an increasing rentiers' rate of return on the equilibrium rates of capacity utilisation, profit and capital accumulation may over-compensate 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 (Table 3).

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 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 overcompensated 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 (Table 3).

	<i>'Contractive' regime</i>	<i>'Profits without investment' regime</i>	<i>'Finance-led growth' regime</i>
Effect via management's animal spirits	weak/strong	weak	weak
Effect via rentiers' rate of return	'normal' case	'intermediate case'	'puzzling' case

3.3 Medium-run equilibrium and stability

In the medium run of our model we have to take into account that firms may be able to shift a higher rate of return demanded by rentiers to prices and that the mark-up, and hence the gross profit share (including dividend and interest payments), may increase. Therefore, with a

dividend-elastic mark-up we have $\frac{\partial h}{\partial e} \geq 0$, and the labour income share will decrease in the

face of a rising rentiers' rate of return. The income share of retained profits by firms will then

not have to carry the whole burden or may even remain constant. A dividend-elastic mark-up is made possible by decreasing price competition in the goods market and weakened labour unions in the labour market. In particular the latter seems to be closely related to increasing shareholder value orientation and decreasing ‘animal spirits’ of management associated with the policy of ‘downsize and redistribute’ which has negative effects on real investment, the expansion of the firm and hence on employment at the firm level. However, at the macroeconomic level, there may be countervailing forces at work if a rising rentiers’ rate of return has expansive effects on capacity utilisation and capital accumulation, as in the ‘puzzling’ and the ‘intermediate’ case. These may thus limit the elasticity of the mark-up and the profit share with respect to the rentiers’ rate of return.

In the medium-run analysis, the effects of a change in the rentiers’ rate of return on the stocks of debt and equity held by rentiers, and hence on the inside and outside finance-capital ratios, have to be considered as well. Since $\gamma + \phi = 1$, it is sufficient to analyse the dynamics of γ . As mentioned above, we do not consider households’ portfolio choice between bonds and equity in the face of relative changes in dividend and interest rates. On the one hand, this is to simplify the analysis, on the other hand, we hold that households’ portfolio choice seems to be dominated by institutional and historical factors which only change slowly in the course of time despite short- and medium-run variations in the dividend rate (relative to the interest rate). Further on, changes in households’ portfolio decisions would only affect firms’ investment decisions in our model if firms’ internal means of finance were affected. But there is no effect via Tobin’s q or Kaldor’s valuation ratio in our investment function, different from other Post-Keynesian stock-flow consistent approaches referred to above. For these reasons it seems to be sufficient to treat the effects of changes in the rentiers’ rate of return on

the outside finance-capital ratio, and then to analyse the related effects on capital accumulation.

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

$$\Delta(E^R + B) = s_R e (E^R + B). \quad (16)$$

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

$$\frac{\Delta(E^R + B)}{(E^R + B)} = s_R e. \quad (17)$$

If we assume that prices remain constant, which means that mark-ups and distribution may change but not the price level, the growth rates 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:

$$\hat{\gamma} = \frac{\Delta(E^R + B)}{(E^R + B)} - \hat{K} = s_R e - g. \quad (18)$$

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:

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

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:

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

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:

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

Stability of γ requires a low rentiers' propensity to save, a low responsiveness of firms' investment with respect to distributed profits and internal funds, and a high elasticity with respect to capacity utilisation. This is tantamount to a positive relationship of the rate of capital accumulation with the outside finance-capital ratio. From equation (15) we obtain:

$$\frac{\partial g^*}{\partial \gamma} = \frac{e \left[\beta(1-s_R) - \theta \frac{h}{v} \right]}{\frac{h}{v} - \beta}, \quad (15b)$$

$$\begin{aligned} \frac{\partial g^*}{\partial \gamma} > 0 \text{ if : } & \beta(1-s_R) - \theta \frac{h}{v} > 0 \\ & \Leftrightarrow 1-s_R > \theta \frac{h}{v\beta}. \end{aligned} \quad (15b')$$

Most importantly, it has to be noted that medium-run stability of the outside finance-capital ratio requires a ‘puzzling’ case effect of a change in the rentiers’ rate of return on the short-run equilibrium rate of capital accumulation, as can be seen in condition (15a’).

3.4 Medium-run effects of ‘financialisation’ and rising shareholder power

We are now in a position to discuss the medium-run effects of a rising rentiers’ rate of return and decreasing management’s ‘animal spirits’. We start with the effects of a rising rentiers’ rate of return on the outside finance-capital ratio and on the rate of capital accumulation in medium-run equilibrium, and then we discuss the effects of decreasing management’s ‘animal spirits’ on the medium-run equilibrium.

From equation (19) we obtain the following effects of a change in the rentiers’ rate of return on the equilibrium outside finance-capital ratio:

$$\frac{\partial \gamma^*}{\partial e} = \frac{s_R \left(\frac{h}{v} - \beta \right) - \gamma \left[\beta(1-s_R) - \theta \frac{h}{v} \right] + \frac{\partial h}{\partial e} \frac{1}{v} [e(\theta\gamma + s_R) - \alpha - 2\tau h]}{e \left[\beta(1-s_R) - \theta \frac{h}{v} \right]}. \quad (19a)$$

For the evaluation of the effects of an increasing rentiers' rate of return we have to distinguish the 'medium-run stable' from the 'medium-run unstable' case.

For the stable case, in which $\beta(1-s_R) - \theta \frac{h}{v} > 0$ has to hold, we obtain:

$$\begin{aligned} \frac{\partial \gamma^*}{\partial e} &> 0 \\ \text{if: } \quad &\beta(1-s_R) - \theta \frac{h}{v} > 0, \quad (19a') \\ \text{and: } \quad &\frac{s_R \left(\frac{h}{v} - \beta \right) + \frac{\partial h}{\partial e} \frac{1}{v} (s_R e - \alpha - 2\tau h)}{\left[\beta(1-s_R) - \theta \frac{h}{v} \right] - \frac{\partial h}{\partial e} \frac{1}{v} e} > \gamma. \end{aligned}$$

In the medium-run stable case, the effect of a change in the rentiers' rate of return on the outside finance-capital ratio depends on the initial value of the rentiers' share in the capital stock. If γ is below the value defined in condition (19a'), an increase in the rentiers' rate of return, hence rising dividend payments, will raise γ ; if γ is above this value it will fall; and if γ is exactly equal to this value there will be no effect of a change in the rentiers' rate of return.

In the medium-run unstable case, we have $\beta(1-s_R) - \theta \frac{h}{v} < 0$ and the inspection of equation

(19a) yields:

$$\frac{\partial \gamma^*}{\partial e} < 0$$

$$\text{if : } \beta(1-s_R) - \rho s_R \frac{h}{v} < 0, \quad (19a'')$$

$$\text{and : } \frac{s_R \left(\frac{h}{v} - \beta \right) - \gamma \left[\beta(1-s_R) - \theta \frac{h}{v} \right] + \frac{\partial h}{\partial e} \frac{1}{v} e (\theta \gamma + s_R)}{\frac{\partial h}{\partial e} \frac{1}{v}} > \alpha + 2\tau h.$$

A change in the rentiers' rate of return will have an adverse effect on the equilibrium outside finance-capital ratio, provided that 'animal spirits' (α) are not too strong and the effect of the profit share on firms' investment is weak. Otherwise, the effect of a change in the rentiers' rate of return on the equilibrium outside finance-capital ratio may be zero or positive as well.

Evaluating the effects of an increasing rentiers' rate of return on the medium-run equilibrium rate of capital accumulation, we obtain from equation (18), in which the condition $\hat{\gamma} = 0$ has to hold:

$$g^{**} = s_R e. \quad (21)$$

The effect of a rising rentiers' rate of return on the medium-run equilibrium rate of capital accumulation, given the propensity to save out of rentiers' income, is thus by necessity positive in all cases:

$$\frac{\partial g^{**}}{\partial e} = s_R > 0. \quad (21a)$$

This finding follows straight forward from the condition for medium-run equilibrium, which requires the constancy of γ and hence that capital stock has to grow at the same rate as the sum of debt plus equity held by rentiers' households. An increase in dividend (and also in interest) payments to rentiers in relation to the capital stock therefore requires increasing capital stock growth in order to obtain a medium-run equilibrium.²² We call this medium-run equilibrium rate of capital accumulation the 'warranted rate' (g^{**}), because it is the rate of accumulation which is required for the constancy and thus stability of the outside finance-capital ratio. However, it is by no way guaranteed that the goods market equilibrium rate of capital accumulation will adjust to that rate. Our 'warranted rate' of accumulation is thus reminiscent of Harrod's (1939) 'warranted rate of growth'. However, in our case it is neither related to goods market equilibrium, nor to desired capacity utilisation, but to a constant financial structure of the firm sector.

As shown above, under the conditions of the short-run 'puzzling' case regarding the effects of a rising rentiers' rate of return (15a'), the stability condition for the medium-run equilibrium outside finance-capital ratio (20') is met. The goods market equilibrium rate of capital accumulation will thus adjust to the 'warranted rate' when the rentiers' rate of return increases, and the new medium-run equilibrium will be reached. This adjustment process may be disturbed but not prevented by the two additional effects of rising shareholder power in our model.

First, in the short and the medium run, the negative effects of falling animal spirits associated with rising shareholder power reduce the positive impact of a rising rentiers' rate of return on capital accumulation. Second, in the medium run, the mark-up and hence the profit share is

²² Since an increasing rentiers' rate of return also affects the value of the equilibrium outside finance-capital ratio, as shown above, the required increase in capital stock may initially not need to be proportionate to the increase in outside finance.

assumed to be elastic with respect to the rentiers' rate of return. This has an additional effect on the goods market equilibrium rate of capital accumulation, as can be derived from equation (15):

$$\frac{\partial g^*}{\partial e} = \frac{c\gamma \left[\beta(1-s_R) - \theta \frac{h}{v} \right] + \frac{\partial h}{\partial e} \frac{1}{v} (\tau h - \beta u)}{\frac{h}{v} - \beta}. \quad (15c)$$

As can be seen from the second term in the numerator, the effect of an increasing profit share on capital accumulation may be positive or negative, depending on the relative importance of unit profits and demand in firms' investment decisions. If capital accumulation is profit-led, medium-run redistribution in favour of gross profits will give an extra push to the goods market equilibrium rate of capital accumulation. If accumulation is wage-led, however, redistribution in favour of gross profits will reduce the short-run positive effect of a rising rentiers' rate of return.

If for one of these reasons the increase in capital accumulation following an increase in the rentiers' rate of return is not sufficient to meet the increased 'warranted rate' in equation (21), the outside finance-capital ratio will grow according to equation (18), and this will push up the goods market equilibrium rate of capital accumulation according to equation (15) and thus stabilise the system. Therefore, the conditions for the short-run 'puzzling' case are sufficient for medium-run stability of the 'finance-led growth' regime. The effects of shareholder value orientation on management's animal spirits and the distribution effects of a rising rentiers' rate of return regarding the labour income share may prolong the adjustment process but will not prevent it.

Under the conditions of the short-run ‘normal’ and ‘intermediate’ cases, capital accumulation will fall when the rentiers’ rate of return increases and the new equilibrium will not be reached; the stability condition for medium-run equilibrium (20’) is not met. With the short-run ‘normal’ and ‘intermediate’ cases prevailing, which implies instability of the medium-run outside finance-capital ratio, the ‘warranted rate’ of capital accumulation in equation (21), therefore, contains a kind of Harrodian ‘knife-edge’ instability property (Harrod, 1939). However, this instability is not related to the actual and the goods market equilibrium rate of capital accumulation, as in Harrod, but to the goods market equilibrium rate of capital accumulation and the rate of accumulation required for a constant outside finance-capital ratio. If the goods market equilibrium rate of capital accumulation in equation (15) by accident is equal to the ‘warranted rate’ in equation (21), capital stock will keep on growing at that rate. But any deviation from the ‘warranted rate’ will cause exploding deviation from this rate. If the goods market equilibrium rate of capital accumulation falls short of the ‘warranted rate’, the outside finance-capital ratio will rise, according to equation (18), and this will feed back negatively on capital accumulation, according to equation (15), making capital accumulation fall further below the ‘warranted rate’ and the outside finance-capital ratio rise further above the equilibrium rate. If the goods market equilibrium rate of capital accumulation exceeds the ‘warranted rate’, the outside finance-capital ratio will fall (equation 18), and this will feed back positively on capital accumulation (equation 15), making it diverge even further from the ‘warranted rate’ and so on. The medium-run cumulative disequilibrium process will hence be characterised either by rising outside finance-capital ratios and by falling rates of capital accumulation, or it will show decreasing outside finance-capital ratios and increasing rates of capital accumulation. We therefore attain a ‘paradox of outside finance’ reminiscent of Steindl’s (1976, pp. 113-122) ‘paradox of debt’.²³ Falling

²³ On the ‘paradox of debt’ see also Dutt (1995) and Lavoie (1995).

(rising) rates of capital accumulation induce firms to attempt to reduce (raise) the outside finance-capital ratio, but the macroeconomic effects of such a behaviour is that this ratio will increase (fall).

In the ‘contractive’ and the ‘profits without investment’ regimes, an increase in the rentiers’ rate of return shifting the ‘warranted rate’ upwards will thus trigger a cumulatively downward process of the goods market equilibrium rate of capital accumulation and a cumulatively upwards process of the outside finance-capital ratio. A decrease in managements’ animal spirits associated with rising shareholder power will exacerbate this process. Redistribution at the expense of labour in the medium run via the dividend-elastic mark-up will also reinforce this process if accumulation is wage-led, and it will dampen it without being able to prevent it, if accumulation is profit-led.

Finally, we have to examine the effects of falling management’s ‘animal spirits’. From equation (19) we obtain for the effect of ‘animal spirits’ on the medium-run equilibrium outside finance-capital ratio:

$$\frac{\partial \gamma^*}{\partial \alpha} = \frac{-\frac{h}{v}}{e \left[\beta(1-s_R) - \theta \frac{h}{v} \right]}. \quad (19b)$$

In the medium-run stable case, in which $\beta(1-s_R) - \theta \frac{h}{v} > 0$, we get $\frac{\partial \gamma^*}{\partial \alpha} < 0$. Falling ‘animal spirits’ associated with rising shareholder value orientation will hence increase the equilibrium outside finance-capital ratio. Medium instability implies $\beta(1-s_R) - \theta \frac{h}{v} < 0$ and

hence $\frac{\partial \gamma^*}{\partial \alpha} > 0$. Decreasing ‘animal spirits’ will thus shift the (unstable) equilibrium outside finance-capital ratio downwards.

For the effects of ‘animal spirits’ on the medium-run ‘warranted rate’ of capital accumulation we obtain from equation (21):

$$\frac{\partial g^{**}}{\partial \alpha} = 0. \quad (21b)$$

Since the ‘warranted rate’ of capital accumulation required for a constant outside finance-capital ratio is determined exclusively by rentiers’ saving out of dividend and interest payments relative to the capital stock, changes in management’s ‘animal spirits’ have no effect on this rate. A change in animal spirits will only affect the goods market equilibrium rate of capital accumulation. As discussed above, this will exacerbate cumulatively diverging processes of the goods market equilibrium rate of capital accumulation from the ‘warranted rate’ in the medium-run unstable case, and it will modify, but not prevent the adjustment process in the medium-run stable case.

3.5 Summary of main model results

We can now summarise the effects of ‘financialisation’ in our little Post-Kaleckian distribution and growth model. For our purposes, ‘financialisation’ has been understood as meaning increasing shareholder power vis-à-vis management and labourers, causing lower management’s ‘animal spirits’ regarding real investment and a higher rentiers’ rate of return in the short run, and a falling labour income share in the medium run. Summarising the main findings in Table 4, we distinguish between short- und medium-run effects, between a stable

medium-run equilibrium and an unstable one, and between ‘contractive’, ‘profits without investment’ and ‘finance-led growth’ regimes. The short-run equilibrium condition is assumed to be fulfilled in each case.

In the parameter constellation generating the medium-run stable case and a ‘finance-led growth’ regime, we obtain that decreasing management’s ‘animal spirits’ have a negative effect on the equilibrium rates of capacity utilisation, profit and capital accumulation in the short run. These negative effects, however, are over-compensated by the positive effects of an increasing rentiers’ rate of return, provided that increasing shareholder power is associated with a relatively weak decline in management’s ‘animal spirits’. In the medium run, the mark-up and the profit share will increase, and the equilibrium outside finance-capital ratio will rise, fall or even remain constant, depending on the initial value of this ratio. This implies that, in the face of a continuously rising rentiers’ rate of return, the equilibrium outside finance-capital ratio will converge towards a definite value and then remain inelastic with respect to further changes in the rentiers’ rate of return. The effect of a rising rentiers’ rate of return on the medium-run equilibrium rate of capital accumulation, on the ‘warranted rate’, is positive. And since we are dealing here with a stable equilibrium outside finance-capital ratio, the ‘warranted rate’ of capital accumulation has therefore to be stable, too, because it has been derived from the constancy condition for the outside finance-capital ratio. Changing ‘animal spirits’ have no effect on the medium-run equilibrium rate of capital accumulation (the ‘warranted rate’) but only affect the equilibrium outside finance-capital ratio in an adverse way, i.e. the medium-run equilibrium value of this ratio will rise in the face of falling management’s ‘animal spirits’.

Table 4: Effects of increasing ‘financialisation’ and rising shareholder power in the short and the medium run				
		<i>‘Contractive’ regime</i>	<i>‘Profits without investment’ regime</i>	<i>‘Finance-led growth’ regime</i>
		$\beta(1 - s_R) - \theta \frac{h}{v}$		
		–	–	+
Short run				
Rentiers’ rate of return, profit share and outside finance-capital ratio	$\frac{\partial h}{\partial e}, \frac{\partial \gamma}{\partial e}$ (short run)	0	0	0
Animal spirits and goods market equilibrium	$\frac{\partial u^*}{\partial \alpha}, \frac{\partial r^*}{\partial \alpha}, \frac{\partial g^*}{\partial \alpha}$ (13, 14, 15)	+	+	+
Rentiers’ rate of return and equilibrium rates of capacity utilisation and profit	$\frac{\partial u^*}{\partial e}, \frac{\partial r^*}{\partial e}$ (13a, 14a)	–	+	+
Rentiers’ rate of return and equilibrium rate of capital accumulation	$\frac{\partial g^*}{\partial e}$ (15a)	–	–	+
Medium run				
Rentiers’ rate of return and profit share	$\frac{\partial h}{\partial e}$ (medium run)	+	+	+
Stability of equilibrium outside finance-capital ratio	$\frac{\partial \hat{\gamma}}{\partial \gamma}$ (20)	+ (unstable)	+ (unstable)	– (stable)
Rentiers’ rate of return and equilibrium outside finance-capital ratio	$\frac{\partial \gamma^*}{\partial e}$ (19a)	+ / 0 / –	+ / 0 / –	+ / 0 / –
Rentiers’ rate of return and equilibrium rate of capital accumulation (‘warranted rate’)	$\frac{\partial g^{**}}{\partial e}$ (21a)	+	+	+
Animal spirits and equilibrium outside finance-capital ratio	$\frac{\partial \gamma^*}{\partial \alpha}$ (19b)	+	+	–
Animal spirits and equilibrium rate of capital accumulation (‘warranted rate’)	$\frac{\partial g^{**}}{\partial \alpha}$ (21b)	0	0	0

From this it follows that a 'finance-led growth' regime, which is characterised by high or rising rates of capacity utilisation, profit and capital accumulation in the face of low 'animal spirits' and a high and rising rentiers' rate of return, may be a viable regime, not only in the short but also in the medium run. In a 'finance-led growth' regime, medium-run viability, in the sense of a medium-run stable outside finance-capital ratio, requires a low rentiers' propensity to save, a low elasticity of investment with respect to distributed profits and hence to internal funds, and a high responsiveness with respect to capacity utilisation.

In the parameter constellation yielding the medium-run unstable case and the 'profits without investment' or the 'contractive' regimes, the short-run negative effects of rising shareholder power on the real equilibrium via management's preferences are reinforced by the effects of an increasing rentiers' rate of return with respect to capital accumulation. The effects of the increasing rentiers' rate of return on the rates of capacity and profit may be negative, which will then give the short-run 'normal' case and the 'contractive' regime. Or they may be positive, which yields the short-run 'intermediate' case, and over-compensate the negative effect of increasing shareholder power on management's 'animal spirits', which gives the 'profits without investment' regime. In the medium run with a rising mark-up and an endogenously determined outside finance-capital ratio, a rising rentiers' rate of return reduces the equilibrium outside finance-capital ratio, provided managements 'animal spirits' are weak and the effect of unit profits on investment is not too strong. A rising rentiers' rate of return increases the medium-run equilibrium rate of capital accumulation, the 'warranted rate'. The depressing effect of rising shareholder power on management's 'animal spirits' reinforces the diminishing effect of the rising rentiers' rate of return on the equilibrium outside finance-capital ratio.

Since we are dealing with a medium-run unstable equilibrium, the equilibrium values of the outside finance-capital ratio and of the rate of capital accumulation in the ‘profits without investment’ and the ‘contractive’ regimes will only be attained by a fluke. If by accident the economy is in such an equilibrium, the effects of rising shareholder power – via falling ‘animal spirits’ and a rising rentiers’ rate of return – will probably reduce the equilibrium outside finance-capital ratio and increase the ‘warranted’ rate of capital accumulation. The actual value of the outside finance-capital ratio will then exceed its new equilibrium value, whereas the actual rate of capital accumulation will fall short of the respective new ‘warranted rate’. We will hence see a disequilibrium process with rising outside finance-capital ratios and falling rates of capital accumulation which reinforce each other. The medium-run equilibrium, therefore, displays ‘knife-edge’-instability properties and the disequilibrium process contains a ‘paradox of outside finance’.

4. Conclusions

From a Post-Keynesian macroeconomic perspective we have identified theoretically and empirically the main channels of influence of ‘financialisation’ on investment, saving and distribution in order to obtain a precise macroeconomic meaning of ‘financialisation’ in a distribution and growth context. Regarding investment, ‘financialisation’ has been associated with increasing shareholder power vis-à-vis management and labourers, an increasing rate of return on equity and bonds held by rentiers and decreasing managements’ animal spirits with respect to real investment in capital stock, which each have partially negative effects on firms real investment. Regarding consumption, ‘financialisation’ has been considered to imply

increasing potential for wealth-based and debt-financed consumption. And regarding distribution, ‘financialisation’ has been viewed to be conducive to a falling labour income share and to increasing inequality of wages and salaries.

As has been reviewed next, these channels of influence have been introduced into different Post-Keynesian distribution and growth models, and different potential accumulation regimes for the era of ‘financialisation’ have been derived in the literature: ‘finance-led growth’, ‘profits without investment’ and ‘contractive’ regimes. Taking the US as an example, a ‘profits without investment’ regime seems to have dominated since the early 1980s empirically. Such a regime may hence exist for a considerable period of time.

Whereas older models have omitted stock-flow interactions between financial and real variables, the now fashionable stock-flow consistent models have taken these interactions into account. However, some of the results produced with the help of these models have to rely on strong effects of Tobin’s q in the investment function, which in our view are dubious in an era of ‘financialisation’ in which management follows a policy of ‘downsize and distribute’ in order to keep share and stock prices high. The stock-flow consistent models so far have also not paid much attention to changes in distribution between capital and labour caused by changes in the financial regime and to the related macroeconomic effects via consumption and investment. Instability problems regarding the financial structure of the corporate sector have been hardly addressed in these models as well.

We have therefore developed a simple comparative static, stock-flow consistent Post-Kaleckian distribution and growth model as an extension of the Bhaduri/Marglin (1990) model, which tackles some of these issues, without relying on Tobin’s q in the investment

function and without studying households' portfolio choice. In particular, a medium-run dividend-elastic mark-up was introduced and the medium-run stability of the financial structure of the firm sector has been studied.

For the purpose of our model, 'financialisation' has been understood as meaning increasing shareholder power vis-à-vis management and labourers, causing lower management's 'animal spirits' regarding real investment and a higher rentiers' rate of return in the short run, and a falling labour income share in the medium run. Depending on the parameter values in the saving and investment functions, our model has been able to generate 'finance-led growth', 'profits without investment' and 'contractive' regimes. However, only the 'finance-led growth' regime yields medium-run stability of the financial structure of the firm sector and of capital accumulation. But this regimes requires a very special parameter constellation: only weakly negative effects of increasing shareholder power on management's 'animal spirits', a low rentiers' propensity to save, a low elasticity of investment with respect to distributed profits and internal funds and a high responsiveness with regard to capacity utilisation. Even if such a parameter constellation persisted for a certain period of time, it remains questionable whether a 'finance-led' growth regime would remain stable in the medium to long run if a low overall propensity to save, as a crucial precondition for such a regime, were associated with increasing debt workers' households. The analysis by Bhaduri/Laski/Riese (2006), Dutt (2005, 2006) and Palley (1994) briefly reviewed in Section 2.2 raises major doubts. The explicit introduction of household debt into the model presented in this paper, however, remains as a task for future research.

The more realistic parameter constellations giving rise to 'profits without investment' or 'contractive' regimes in our model 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' rates of return and falling managements' 'animal spirits', these regimes are liable to systemic instability characterised by rising outside finance-capital ratios, i.e. rising debt plus rentiers' equity-capital ratios, and falling goods market equilibrium rates of capital accumulation and hence to a macroeconomic 'paradox of outside finance'.

Of course, this is not to argue that economies with a 'profits without investment' or a 'contractive' regime are cumulatively unstable, because there may be other forces in the economy at work (in particular monetary and fiscal policies) which contain this instability. However, based on the results of our simple model, we would argue that under the conditions of the 'contractive' and the 'profits without investment' regimes there is a considerable systemic medium-run instability potential regarding the financial structure of the economy and capital accumulation. This instability potential might even feed back negatively on investment and consumption decisions which would further exacerbate the problem. Therefore, a regime of 'profits without investment' in the face of rising shareholder power, as observed in the US since the early 1980s, may emerge under specific conditions. In the medium to long run, however, the financial structure of this regime and the rate of capital accumulation will turn out to be fragile and unstable. It can be expected that introducing household debt for consumption purposes into our model, in the line of Bhaduri/Laski/Riese (2006), Dutt (2005, 2006) and Palley (1994), might even increase this instability potential inherent the 'profits without investment' regime (and also in the 'contractive' regime).

Finally, it should also be noted that the instability properties emerging from the financial structure in the 'profits without investment' regime are supplemented by further problems, not

explicitly addressed in the present paper: This regimes will be characterised by weak real investment, weak capital stock growth and slow productivity growth, as far as the latter is embodied in capital stock. Generating a high level of activity and a high profit rate in the short run, the ‘profits without investment’ regime will therefore face medium- to long-run growth, employment and inflation problems caused by its weak capital stock growth.²⁴

References

- Aglietta, M. (2000): ‘Shareholder value and corporate governance: some tricky questions’, *Economy and Society*, 29, pp. 146-159.
- Arestis, P., Baddeley, M., Sawyer, M. (2006): ‘Is capital stock a determinant of unemployment?’, in Hein, E., Heise, A., Truger, A. (eds.): *Wages, Employment, Distribution and Growth. International Perspectives*, Palgrave Macmillan, Basingstoke.
- Arestis, P., Baddeley, M., Sawyer, M. (2007): ‘The relationship between capital stock, unemployment and wages in nine EMU countries’, *Bulletin of Economic Research*, 59, pp. 125-139.
- Arestis, P., Biefang-Frisancho Mariscal, I. (2000): ‘Capital stock, unemployment and wages in the UK and Germany’, *Scottish Journal of Political Economy*, 47, pp. 487-503.
- Arestis, P., Sawyer, M. (2005a): ‘Financial liberalization and the finance-growth nexus: what have we learned?’, in Arestis, P., Sawyer, M. (eds.): *Financial Liberalization. Beyond Orthodox Concerns*, Palgrave Macmillan, Basingstoke.
- Arestis, P., Sawyer, M. (2005b): ‘Aggregate demand, conflict and capacity in the inflationary process’, *Cambridge Journal of Economics*, 29, pp. 959-974.
- Argitis, G., Pitelis, C. (2001): ‘Monetary policy and the distribution of income: evidence for the United States and the United Kingdom’, *Journal of Post Keynesian Economics*, 23, pp. 617-638.
- Bhaduri, A., Laski, K., Riese, M. (2006): ‘A model of interaction between the virtual and the real economy’, *Metroeconomica*, 57, pp. 412-427.
- Bhaduri, A., Marglin, S. (1990): ‘Unemployment and the real wage: the economic basis for contesting political ideologies’, *Cambridge Journal of Economics*, 14, pp. 375-393.
- Bhaskar, V., Glyn, A. (1995): ‘Investment and profitability: the evidence from the advanced capitalist countries’, in Epstein, G.A., Gintis, H.M. (eds.): *Macroeconomic Policy after the Conservative Era*, Cambridge University Press, Cambridge/UK.
- Boone, L., Giorno, C., Richardson, p. (1998): Stock market fluctuations and consumption behaviour - some recent evidence, OECD Economics Department Working Papers NO.208, Paris.
- Boone, L., Girouard, N. (2002): ‘The stock market, the housing market and consumer behaviour’, *OECD Economic Studies*, No. 35, pp. 175-200.

²⁴ For the effects of capital stock growth on GDP growth, employment and inflation see for instance Arestis/Baddeley/Sawyer (2006; 2007), Arestis/Biefang-Frisancho Mariscal (2000), Arestis/Sawyer (2005b), Rowthorn (1995; 1999), and Sawyer (2002).

- Boyer, R. (2000): 'Is a finance-led growth regime a viable alternative to Fordism? A preliminary analysis', *Economy and Society*, 29, pp. 111-145.
- Brainard, W., Tobin, J. (1968): 'Pitfalls in financial model building', *American Economic Review. Papers and Proceedings*, 58, pp. 99-122.
- Chirinko, R.S. (1993): 'Business fixed investment spending: modelling strategies, empirical results and policy implications', *The Journal of Economic Literature*, 31, pp. 1875-1911.
- Corbett, J., Jenkinson, T. (1997): 'How is investment financed? A study of Germany, Japan, the United Kingdom and the United States', *Manchester School*, 65, pp. 69-93.
- Cordonnier, L. (2006) 'Le profit sans l'accumulation: la recette du capitalisme dominé par la finance', *Innovations. Cahiers d'Economie de l'Innovation*, 23, pp. 51-72.
- Crotty, J. (1990): 'Owner-management conflict and financial theories of investment instability: a critical assessment of Keynes, Tobin, and Minsky', *Journal of Post Keynesian Economics*, 12, pp. 519-542.
- Crotty, J. (2005): 'The neoliberal paradox: the impact of destructive product market competition and 'modern' financial markets on nonfinancial corporation performance in the neoliberal era', in Epstein, G.A. (ed.): *Financialization and the World Economy*, Edward Elgar, Cheltenham.
- Dallery, T. (2008): Post-Keynesian theories of the firm under financialization, Paper presented at the Workshop 'Financialization: Post-Keynesian Approaches', University of Lille 1 (April).
- Davis, M.A., Palumbo, M. (2001): A primer on the economics and time series econometrics of wealth effects, Finance and Economics Discussion Series, 2001-09, Federal Reserve Board, Washington, D.C..
- Demetriades, P., Adrianova, S. (2004): 'Finance and growth: what we know and what we need to know', in Goodhart, C. (ed.): *Financial Development and Economic Growth. Explaining the Links*, Palgrave Macmillan, Basingstoke.
- Dreger, C., Slacalek, J. (2007): 'Finanzmarktentwicklung, Immobilienpreise und Konsum', *DIW Wochenbericht*, 74, pp. 533-536.
- Dumenil, G., Levy, D. (2001): 'Costs and benefits of neoliberalism: a class analysis', *Review of International Political Economy*, 8, pp. 578-607.
- Dumenil, G., Levy, D. (2004a): 'The real and financial components of profitability (USA 1948-2000)', *Review of Radical Political Economics*, 36, pp. 82-110.
- Dumenil, G., Levy, D. (2004b): 'Neoliberal income trends. Wealth, class and ownership in the USA', *New Left Review*, 30, pp. 105-133.
- Dumenil, G., Levy, D. (2005): 'Costs and benefits of neoliberalism: a class analysis', in Epstein, G.A. (ed.): *Financialization and the World Economy*, Edward Elgar, Cheltenham.
- Dutt, A.K. (1995): 'Internal finance and monopoly power in capitalist economies: a reformulation of Steindl's growth model', *Metroeconomica*, 46, pp. 16-34.
- Dutt, A.K. (2005): 'Conspicuous consumption, consumer debt and economic growth', in Setterfield, M. (ed.): *Interactions in Analytical Political Economy. Theory, Policy and Applications*, M.E. Sharpe, Armonk, New York.
- Dutt, A.K. (2006): 'Maturity, stagnation and consumer debt: a Steindlian approach', *Metroeconomica*, 57, pp. 339-364.
- Eatwell, J., Taylor, L. (2000): *Global Finance at Risk*, Polity Press, Cambridge/UK.
- Edison, H., Slok, T. (2001): Wealth effects and the new economy, IMF Working Papers 01/77, International Monetary Fund, Washington, D.C..

- Epstein, G.A. (ed.) (2005): *Financialization and the World Economy*, Edward Elgar, Cheltenham.
- Epstein, G.A., Jayadev, A. (2005): 'The rise of rentier incomes in OECD countries: financialization, central bank policy and labor solidarity', in Epstein, G.A. (ed.): *Financialization and the World Economy*, Edward Elgar, Cheltenham.
- Epstein, G.A., Power, D. (2003): Rentier incomes and financial crises: an empirical examination of trends and cycles in some OECD countries, Working Paper Series No. 57, Political Economy Research Institute, University of Massachusetts, Amherst.
- European Commission (2008): Annual Macro-Economic Database (AMECO), November 2008.
- Fazzari S.M., Hubbard R.G., Petersen B.C. (1988): 'Financing constraints and corporate investment', *Brooking Papers on Economic Activity*, 1, pp. 141-195.
- Godley, W., Lavoie, M. (2007): *Monetary Economics. An Integrated Approach to Credit, Money, Income, Production and Wealth*, Palgrave Macmillan, Basingstoke.
- Graziani, A. (1989): The theory of the monetary circuit, Thames Paper in Political Economy, Spring, London.
- Graziani, A. (1994): 'Monetary circuits', in Arestis P., Sawyer M. (eds): *The Elgar Companion to Radical Political Economy*, Edward Elgar, Aldershot.
- Hannsgen, G. (2004): Gibson's paradox, monetary policy, and the emergence of cycles, Working Paper No. 410, The Levy Economics Institute at Bard College, Annandale-on-Hudson, New York.
- Hannsgen, G. (2006a): Gibson's paradox II, Working Paper No. 448, The Levy Economics Institute at Bard College, Annandale-on-Hudson, New York.
- Hannsgen, G. (2006b): 'The transmission mechanism of monetary policy: a critical review', in Arestis, P., Sawyer, M. (eds.): *A Handbook of Alternative Monetary Economics*, Edward Elgar, Cheltenham.
- Harrod, R.F. (1939): 'An essay in dynamic theory', *The Economic Journal*, 49, pp. 14-33.
- Hein, E. (2005): Finanzstruktur und Wirtschaftswachstum - theoretische und empirische Aspekte, IMK Studies 1/2005, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation, Duesseldorf.
- Hein, E. (2007): 'Interest rate, debt, distribution and capital accumulation in a post-Kaleckian model', *Metroeconomica*, 57, pp. 310-339.
- Hein, E. (2008a): *Money, Distribution Conflict and Capital Accumulation. Contributions to 'Monetary Analysis'*, Palgrave Macmillan, Basingstoke.
- Hein, E. (2008b): 'Rising shareholder power: effects on distribution, capacity utilisation and capital accumulation in Kaleckian/Post-Kaleckian models', in Hein, E., Niechoj, T., Spahn, P., Truger, A. (eds.): *Finance-led Capitalism? Macroeconomic Effects of Changes in the Financial Sector*, Metropolis, Marburg.
- Hein, E. (2008c): Shareholder value orientation, distribution and growth – short- and medium-run effects in a Kaleckian model, revised version, manuscript.
- Hein, E., Stockhammer, E. (2007): Macroeconomic policy mix, employment and inflation in a Post-Keynesian alternative to the New Consensus model, Department of Economics Working Paper No. 110, University of Economics and Business Administration, Vienna.
- Hein, E., van Treeck, T. (2007): 'Financialisation' in Kaleckian/Post-Kaleckian models of distribution and growth, IMK Working Paper 7/2007, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation, Duesseldorf.

- Hein, E., van Treeck, T. (2008): 'Financialisation' in Post-Keynesian models of distribution and growth – a systematic review, IMK Working Paper 10/2008, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation, Duesseldorf.
- Joint Center for Housing Studies (2006): *The State of the Nation's Housing*, Report of the Joint Center for Housing Studies of Harvard University, Cambridge, MA.
- Kaldor, N. (1966): 'Marginal productivity and the macro-economic theories of growth and distribution', *Review of Economic Studies*, 33, pp. 309-319.
- Kaldor, N. (1970): 'The new monetarism', *Lloyds Bank Review*, 97, pp. 1-17.
- Kaldor, N. (1982): *The Scourge of Monetarism*, Oxford University Press, Oxford.
- Kaldor, N. (1985): 'How Monetarism failed', *Challenge*, 28 (2), pp 4-13.
- Kalecki, M. (1937): 'The principle of increasing risk', *Economica*, 4, pp. 440-447.
- Kalecki, M. (1954): *Theory of Economic Dynamics*, George Allen and Unwin, London.
- Krippner, G.R. (2005): 'The financialization of the American economy', *Socio-Economic Review*, 3, pp. 173-208.
- Lavoie, M. (1984): 'The endogenous flow of credit and the post Keynesian theory of money', *Journal of Economic Issues*, 18, pp. 771-797.
- Lavoie, M. (1992): *Foundations of Post Keynesian Economic Analysis*, Edward Elgar, Aldershot.
- Lavoie, M. (1995): 'Interest rates in post-Keynesian models of growth and distribution', *Metroeconomica*, 46, pp. 146-177.
- Lavoie, M. (1996): 'Horizontalism, structuralism, liquidity preference and the principle of increasing risk', *Scottish Journal of Political Economy*, 43, pp. 275-300.
- Lavoie, M. (1998): 'The Neo-Pasinetti theorem in Cambridge and Kaleckian models of growth and distribution', *Eastern Economic Journal*, 24, pp. 417-434.
- Lavoie, M. (2006): Cadrisme within a Kaleckian model of growth and distribution, ROBINSON Working Paper No. 06-05, University of Ottawa, Ottawa.
- Lavoie, M. (2008): 'Financialisation issues in a Post-Keynesian stock-flow consistent model', *Intervention. European Journal of Economics and Economic Policies*, 5, pp. 331-356.
- Lavoie, M., Godley, W. (2001-2): 'Kaleckian models of growth in a coherent stock-flow monetary framework: a Kaldorian view', *Journal of Post Keynesian Economics*, 22, pp. 277-311.
- Lazonick, W., O'Sullivan, M. (2000): 'Maximizing shareholder value: a new ideology for corporate governance', *Economy and Society*, 29 (1), pp. 13-35.
- Levine, R. (2003): 'More on finance and growth: more finance, more growth?', *Federal Reserve Bank of St. Louis Review*, 85 (4), pp. 31-46.
- Levine, R. (2005): 'Finance and growth: theory and evidence', in Aghion, P., Durlauf, S. (eds.): *Handbook of Economic Growth*, Elsevier, Amsterdam et al.
- Lima, G.T., Setterfield, M. (2008): Pricing behaviour and the cost-push channel of monetary policy, manuscript, http://www.trincoll.edu/~setterfi/mark_setterfield.htm.
- Ludvigson, S., Steindel, C. (1999), 'How important is the stock market effect on consumption?', *Federal Reserve Bank of New York Economic Policy Review*, July, pp. 29-51.
- Ludwig, A., Slok, T. (2001): The impact of changes in stock prices and in house prices on consumption, IMF Working Papers 02/1, International Monetary Fund, Washington, D.C..

- Ludwig, A., Slok, T. (2004): The relationship between stock, house prices and consumption in OECD countries, MEA Discussion Paper Series 04044, Mannheim Research Institute for the Economics of Aging (MEA), University of Mannheim.
- Maki, D.M., Palumbo, M.G. (2001): Disentangling the Wealth Effect: A Cohort Analysis of Household Saving in the 1990s, Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series.
- Medlen, C. (2003): 'The trouble with Q', *Journal of Post Keynesian Economics*, 25, pp. 693-698.
- Mehra, Y.P. (2001): 'The wealth effect in empirical life-cycle aggregate consumption equations', *Federal Reserve Bank of Richmond Economic Quarterly*, 87 (2), pp. 45-68.
- Moore, B.J. (1988): *Horizontalists and Verticalists. The Macroeconomics of Credit Money*, Cambridge University Press, Cambridge/UK.
- Moore, B.J. (1989): 'The endogeneity of credit money', *Review of Political Economy*, 1, pp. 65-93.
- Ndikumana, L. (1999): 'Debt service, financing constraints, and fixed investment: evidence from panel data', *Journal of Post Keynesian Economics*, 21, pp. 455-478.
- Orhangazi, Ö. (2008): 'Financialisation and capital accumulation in the non-financial corporate sector: a theoretical and empirical investigation on the US economy: 1973-2003', *Cambridge Journal of Economics*, 32, pp. 863-886.
- Palley, T. (1994), 'Debt, aggregate demand, and the business cycle: an analysis in the spirit of Kaldor and Minsky', *Journal of Post Keynesian Economics*, 16, pp. 371-390.
- Palley, T. (1996), *Post Keynesian Economics. Debt, Distribution and the Macro Economy*, Macmillan, Basingstoke.
- Palley, T. (2006): 'Class conflict and the Cambridge theory of income distribution', in Hein, E., Heise, A., Truger, A. (eds): *Wages, Employment, Distribution and Growth. International Perspectives*, Palgrave Macmillan, Basingstoke.
- Palley, T. (2008): 'Financialisation: what it is and why it matters', in Hein, E., Niechoj, T., Spahn, P., Truger, A. (eds.): *Finance-led Capitalism? Macroeconomic Effects of Changes in the Financial Sector*, Metropolis, Marburg.
- Papadimitriou, D. (2008): 'Global imbalances: The U.S. and the rest of the world', in Hein, E., Niechoj, T., Spahn, P., Truger, A. (eds.): *Finance-led Capitalism? Macroeconomic Effects of Changes in the Financial Sector*, Metropolis, Marburg.
- Pasinetti L.L. (1974): *Growth and Income Distribution*, Cambridge University Press, Cambridge/UK.
- Piketty, T., Saez, E. (2003): 'Income inequality in the United States, 1913-1998', *The Quarterly Journal of Economics*, 118, pp. 1-39.
- Piketty, T., Saez, E. (2006): 'The evolution of top incomes: a historical and international perspective', *American Economic Review. Papers and Proceedings*, 96, pp. 200-205.
- Poterba, J.M. (2000): 'Stock market wealth and consumption', *Journal of Economic Perspectives*, 14 (2), pp. 99-118.
- Power, D., Epstein, G., Abrena, M. (2003): Trends in the rentier income share in OECD countries, 1960-2000, Working Paper Series No. 58a, Political Economy Research Institute, University of Massachusetts, Amherst.
- Rowthorn, R.E. (1995): 'Capital formation and unemployment', *Oxford Review of Economic Policy*, 11(1), pp. 26-39.
- Rowthorn, R.E. (1999): 'Unemployment, wage bargaining and capital-labour substitution', *Cambridge Journal of Economics*, 23, pp. 413-425.

- Sawyer, M. (2002): 'The NAIRU, aggregate demand and investment', *Metroeconomica*, 53, pp. 66-94.
- Schiantarelli F. (1996): 'Financial constraints and investment: methodological issues and international evidence', *Oxford Review of Economic Policy*, 12, pp. 70-89.
- Seccareccia, M. (1996): 'Post Keynesian fundism and monetary circulation', in Deleplace, G., Nell, E. (eds): *Money in Motion*, Macmillan, London.
- Seccareccia, M. (2003): 'Pricing, investment and the financing of production within the framework of the monetary circuit: some preliminary evidence', in Rochon, L.-P., Rossi, S. (eds): *Modern Theories of Money*, Edward Elgar, Cheltenham.
- Skott, P. (1988): 'Finance, saving and accumulation', *Cambridge Journal of Economics*, 12, pp. 339-354.
- Skott, P. (1989): *Conflict and Effective Demand in Economic Growth*, Cambridge University Press, Cambridge/UK.
- Skott, P., Ryoo, S. (2008a): 'Macroeconomic implications of financialization', *Cambridge Journal of Economics*, 32, pp. 827-862.
- Skott, P., Ryoo, S. (2008b): 'Financialization in Kaleckian economics with and without labor constraints', *Intervention. European Journal of Economics and Economic Policies*, 5, pp. 357-386.
- Steindl J. (1976): *Maturity and Stagnation in American Capitalism*, 2nd edition, Monthly Review Press, New York, London.
- Stockhammer, E. (2004): 'Financialisation and the slowdown of accumulation', *Cambridge Journal of Economics*, 28, pp. 719-741.
- Stockhammer, E. (2005-6): 'Shareholder value orientation and the investment-profit puzzle', *Journal of Post Keynesian Economics*, 28, pp. 193-215.
- Stockhammer, E. (2008): 'Some stylized facts on the finance-dominated accumulation regime', *Competition and Change*, 12, pp. 189-207.
- Taylor, L. (2004): *Reconstructing Macroeconomics. Structuralists Proposals and Critiques of the Mainstream*, Harvard University Press, Cambridge/Mass., London.
- Tobin, J. (1969): 'A general equilibrium approach to monetary theory', *Journal of Money, Credit and Banking*, 1, pp. 15-29.
- Tobin, J., Brainard, W. (1990): 'On Crotty's critique of Q-theory', *Journal of Post Keynesian Economics*, 12, pp. 543-549.
- Van Treeck, Hein, E., Dühaupt, P. (2007): *Finanzsystem und wirtschaftliche Entwicklung: neuere Tendenzen in den USA und in Deutschland*, IMK Studies 5/2007, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation, Duesseldorf.
- Van Treeck, T. (2008): 'Reconsidering the investment-profit nexus in finance-led economies: an ARDL-based approach', *Metroeconomica*, 59, pp. 371-404.
- Van Treeck, T. (2009a): 'A synthetic stock-flow consistent macroeconomic model of financialisation', *Cambridge Journal of Economics*, forthcoming.
- Van Treeck, T. (2009b): 'The political economy debate on 'financialisation' – a macroeconomic perspective', *Review of International Political Economy*, forthcoming.
- Weller, C., Sabatini, K. (2008): 'On shaky ground: the US mortgage boom and its economic consequences', in Hein, E., Niechoj, T., Spahn, P., Truger, A. (eds.): *Finance-led Capitalism? Macroeconomic Effects of Changes in the Financial Sector*, Metropolis, Marburg.

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