

Hein, Eckhard; van Treeck, Till

Working Paper

'Financialisation' in Post-Keynesian models of distribution and growth - a systematic review

IMK Working Paper, No. 10/2008

Provided in Cooperation with:

Macroeconomic Policy Institute (IMK) at the Hans Boeckler Foundation

Suggested Citation: Hein, Eckhard; van Treeck, Till (2008) : 'Financialisation' in Post-Keynesian models of distribution and growth - a systematic review, IMK Working Paper, No. 10/2008, Hans-Böckler-Stiftung, Institut für Makroökonomie und Konjunkturforschung (IMK), Düsseldorf, <https://nbn-resolving.de/urn:nbn:de:101:1-20080818205>

This Version is available at:

<https://hdl.handle.net/10419/105896>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

‘Financialisation’ in Post-Keynesian models of distribution and growth – a systematic review

Eckhard Hein and Till van Treeck

‘Financialisation’ in Post-Keynesian models of distribution and growth – a systematic review[#]

Eckhard Hein* and Till van Treeck*

* Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation, Duesseldorf,
and Carl von Ossietzky University Oldenburg, Germany.

Abstract

We review recent attempts to integrate ‘financialisation’ processes into Post-Keynesian distribution and growth models and distinguish three principal channels of influence: 1. objectives and finance restrictions of firms, 2. new opportunities for households’ wealth-based and debt-financed consumption, and 3. distribution between capital and labour, on the one hand, and between management and workers on the other hand. Starting from a re-interpretation of the Post-Keynesian theory of the firm we bridge the gap between micro- and macro-analysis of ‘financialisation’ and we trace the main characteristics and effects of ‘financialisation’ from the micro to the macro level taking into account stock-flow interactions. Our review of the theoretical literature on ‘financialisation’ shows that expansive effects may arise under certain conditions, in particular when there are strong wealth effects in firms’ investment decisions (via Tobin’s q) and in households’ consumption decisions. However, our review also suggests that even an expansive finance-led economy may build up major financial imbalances, i.e. increasing debt-capital or debt-income ratios, which make such economies prone to financial instability.

JEL code: E12, E21, E22, E25, E44

Keywords: Financialisation, Post-Keynesian distribution and growth models

Corresponding author

PD Dr. Eckhard Hein
Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation
Hans Boeckler Str. 39
40476 Duesseldorf
Germany
e-mail: eckhard-hein@boeckler.de

[#] We have benefited from discussions with the participants of the workshop ‘Financialisation: Post Keynesian Approaches’ at the University of Lille 1 in April 2008 and from helpful comments by Thomas Dallery on an earlier version of this paper. We alone are responsible for remaining errors.

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. These developments and the related consequences and effects have been broadly summarised as ‘financialisation’ by some authors (Epstein, 2005; Krippner, 2005; Lavoie, 2008; Palley, 2008; Skott/Ryoo, 2008a,b; Stockhammer, 2004; van Treeck, 2007, 2008b).² However, a major part of this literature remains somewhat opaque when it comes to the precise meaning of ‘financialisation’. Epstein (2005, p. 3), for example, argues rather broadly 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’. In the present chapter we start with a more precise meaning and analytical definition of what ‘financialisation’ is all about. This will help us then to review recent attempts to incorporate these developments into Post-Keynesian models of distribution and growth in a systematic way.

Seen from a Post-Keynesian macroeconomic perspective, and limiting our attention to closed private economies, we suggest that ‘financialisation’ has the following potential implications:³

¹ See for example the overview in Eatwell/Taylor (2000) for an early analysis, Krippner (2005) and the contributions in Epstein (2005) for a detailed treatment of the development in the US and other countries, van Treeck/Hein/Dünhaupt (2007) and van Treeck (2008a) for a comparison of the macroeconomics of ‘financialisation’ in the US and Germany, and Stockhammer (2007) 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, 2008a), ‘finance-dominated regime’ (Stockhammer, 2007), ‘neo-liberalism’ (Duménil/Levy, 2005), ‘shareholder value orientation’ (Hein, 2008b; Stockhammer, 2005-6), ‘maximizing shareholder value’ (Lazonick/O’Sullivan, 2000), or ‘rising shareholder power’ (Hein, 2008c).

³ 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 bank credit, created

1. Both the objectives and the constraints of firms as a whole may be affected. On the one hand, increasing shareholder power will subordinate managements' and workers' preference for (long-run) accumulation of the firm to shareholders' preference for (short-term) profitability. On the other, increasing dividend payments, share buybacks etc. will restrict the availability of finance for firms' investment projects.
2. New opportunities (and longer term risks) for households in terms of wealth-based and debt-financed consumption may arise. The reasons for this are financial asset price booms associated with shareholder value orientation of firms, on the one hand, and new credit instruments made available to households by profit-seeking banks, on the other hand.
3. Distribution of income may be affected due to changes in power relations between shareholders, managers and workers. Distribution effects will then feed back on investment and consumption.

The remainder of the chapter is structured as follows. In the second section we draw on the existing literature in order to develop a general Post-Keynesian framework for the analysis of 'financialisation'. In particular, we attempt to coherently link the microeconomic foundations of shareholder value orientation at the firm level with the possible macroeconomic outcomes. In the third section, we discuss different possible 'regimes', showing why financialisation may have either contractive or expansive effects, as well as some stock-flow and financial fragility and instability issues. The fourth section summarises and concludes this review.

2. A general Post-Keynesian framework for the analysis of 'financialisation'

2.1 'Financialisation' and the Post-Keynesian theory of the firm

In the traditional Post-Keynesian theory of the firm, rentiers are seen as playing only a minor role for corporate governance. The typical Post-Keynesian firm is the large corporation, operating in imperfectly competitive markets (Eichner's (1976) 'megacorp'). The main interest of

endogenously by a developed banking sector on demand by creditworthy borrowers. See the surveys by, among others, Hein (2008a), Lavoie (1992, pp. 347-371, 1995), and Taylor (2004, pp. 272-278).

the management of such firms (Galbraith's (1967) 'technostructure') has traditionally been seen to be the growth of the firm, subject to only loose profitability constraints enforced by owners. In light of recent developments in financial markets and corporate governance, this Post-Keynesian theory of the firm needs to be reconsidered.⁴

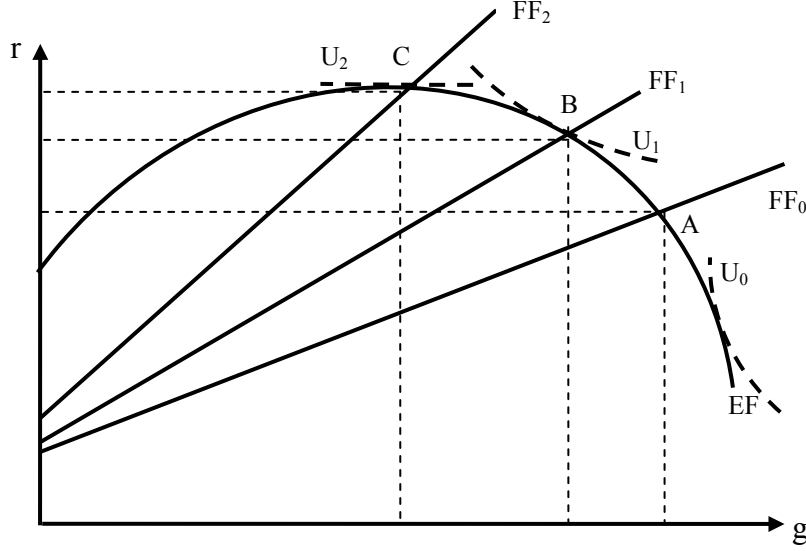
More recently, Post-Keynesians, such as Crotty (1990), Dallery (2008), or Stockhammer (2005-6), have highlighted the importance of the 'owner-manager conflict' inherent to large corporations. This conflict arises from the postulation of a 'growth-profit trade-off', implying that shareholder value orientation 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' (Crotty, 1990, p. 534) and care much more about the current profitability than the long-term expansion and survival of a particular firm.⁵ In fact, with 'financialisation', various mechanisms have been designed to, on the one hand, impose restrictions on managements' ability to seek expansion, and, on the other hand, change managements' preferences themselves and align them to shareholders' profit maximisation objective. Managements' desire for growth is nowadays 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 preferences to shareholders' objectives. As an overall result, it has been argued that the traditional

⁴ For a review of the Post-Keynesian theory of the firm, as developed by, amongst others, Galbraith (1967), Eichner (1976), and Wood (1975), see Lavoie (1992, pp. 94-118), who could argue as lately as 1992 that: 'Whether the owners are still in control or not is irrelevant: those individuals taking decisions within the firm are in search of power; and their behaviour and motivations will reflect that fundamental fact' (Lavoie, 1992, p. 102).

⁵ In the New Institutional Economics literature, the 'owner-manager conflict' is interpreted as a principle-agent problem opposing shareholders and managers. Here, however, the focus is not primarily on managers' preference for growth and on the related effects on aggregate demand, but on managements' shirking and interest in 'benefits in kind', such as 'physical appointments of the office', the 'attractiveness of the secretarial staff', or 'a larger than optimal computer to play with' (Jensen/Meckling, 1976, p. 312).

managerial policy ‘retain and invest’ is replaced by the shareholder-oriented strategy ‘down-size and distribute’ (Lazonick/O’Sullivan, 2000).

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



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 the profit rate that is necessary for firms to be able to finance the desired accumulation rate. The finance frontier can be derived algebraically as follows. Notice first that investment (I) can be financed either by retained earnings or by external finance:

$$(1) \quad I = s_f (\Pi - i_b K_b) + x_b I + x_s I$$

with Π as profits, s_f as the share of retained profits in profits net of interest payments (retention ratio), i_b as the interest rate paid by firms, K_b as firms' outstanding bonds or loans, and x_b and x_s respectively as the proportions of investment financed by bond issues/bank credit and equity issues. Defining the profit rate as $r = \Pi/K$, and the leverage ratio as $LEV = K_b/K$, from equation (1) it follows that

$$(2) \quad g = \frac{I}{K} = \frac{s_f(r - i_b \text{LEV})}{1 - x_b - x_s}.$$

This implies that for a given profit rate (r) managers can finance a higher accumulation rate, the lower are dividend payments and interest obligations and the higher is the proportion of externally financed investment that is tolerated by creditors as well as the firm itself under conditions of asymmetric information, considering Kalecki's (1937) 'principle of increasing risk'. Graphically, if creditors and/or firms tolerate a higher proportion of investment financed by external means [$\Delta(1 - x_s - x_b) < 0$] and/or the leverage ratio, the interest rate or the dividend payout ratio declines ($\Delta s_f > 0$ or $\Delta i_b \text{LEV} < 0$), the firm's finance frontier in Figure 1 rotates clockwise and shifts downwards.

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 (due to economies of scale and scope, etc.), and downward sloping for higher rates (due to technical and logistical inefficiencies, etc.) (Lavoie, 1992, pp. 114-116).

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. As suggested by Lavoie (1992, p. 106): 'Put briefly, growth is the objective, and profits are the means to realize this objective.' 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: 'profits are no longer a mean to an end, but they become an end in itself' (Dallery, 2008, p. 4). 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 a higher distribution of profits by firms: $\Delta s_f < 0$ (higher dividend payout ratio and hence lower retention ratio) and $\Delta x_s < 0$ (lower contribution of new equity issues to the financing of investment, or 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.

The first effect will imply a counter-clockwise rotation and an upward shift of the finance frontier in Figure 1. These movements may even be more pronounced in the longer run, because the leverage ratio may increase as a result of lower profit retention and lower equity issues. This, however, can be expected to further reduce firms' ability to secure external means of finance. The second effect can be represented in Figure 1 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 are 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)). Note that when the finance constraint remains binding (U_1 with FF_2), shareholders are not able to impose their preferred investment strategy as a result of a shareholder-creditor con-

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.

flict, with banks refusing to provide the required amount of credit necessary to realise shareholders' claims in terms of both profit distribution and investment policy.

2.2 'Financialisation' and aggregate demand

The growth-profitability trade-off postulated at the firm level in the previous subsection does not simply carry over to the macroeconomic level. Here, a lower accumulation rate leads to a lower profit rate, *ceteris paribus*. This is clearly expressed in the macroeconomic profit equation stressed by Kalecki (1954, pp. 45-52) and also follows strictly from national accounting:

$$(3) \quad \Pi = I + C_{\Pi} - S_w.$$

In a closed private economy, profits must always be exactly equal to investment plus consumption out of profits minus saving out of wages. When many firms attempt to move to the left along their individual expansion frontiers, they will experience a downward shift of these expansion frontiers, due to the adverse aggregate demand effect. This fallacy of composition seems to be neglected in much of the political economy and even macroeconomics literature on 'financialisation' (see Skott/Ryoo, 2008a, and van Treeck, 2008b, for a critique). In what follows, we develop a general framework describing the macroeconomic implications of 'financialisation' in terms of private investment and consumption decisions.

Equation (4) is a general investment function, relating net investment to the capital stock:

$$(4) \quad g^i = \frac{I}{K} = \gamma_0 - \gamma_1 r_{sf} - \gamma_2 LEV + \gamma_3 u + \gamma_4 q,$$

where r_{sf} is a profitability target of firms, LEV is the leverage ratio, as before, u is the rate of capacity utilisation, and $q = (K_b + K_s)/K$ is Tobin's q , with K_s being stock market capitalisation. The term $-\gamma_1 r_{sf}$ expresses the degree to which (shareholders') profitability targets affect firms' investment decisions: It can be seen as based on a set of indifference curves along a linearised downward sloping expansion frontier in terms of Figure 1. Similarly, the term $-\gamma_2 LEV$ proxies the degree to which investment is finance constraint, because firms' access

to external means of finance is negatively and interest obligations are positively related to the leverage ratio.⁷ In terms of Figure 1, the points of intersection between a linear expansion frontier and a set of finance constraints also yield a downward sloping line in the r - g space. The rate of capacity utilisation and Tobin's q are proxies of current and expected demand and profitability conditions faced by firms. In Figure 1, an increase in either of these variables can be represented as an upward shift of the expansion frontier. For a given u and q , the accumulation policy of an individual firm is hence determined by either its preferences or the finance constraint, as argued above. Financial asset prices, and hence Tobin's q , are jointly determined by firms' financing decisions and households' portfolio choice, which are not modelled explicitly here.⁸

Equation (4) encompasses various views on the effects of shareholder value orientation that can be found in the literature. Some authors, such as Boyer (2000), Cordonnier/Van de Velde (2008), Firmin (2008), and Stockhammer (2004, 2005-6), have focused on the effects on firms' preferences in terms of the growth profit trade-off. In terms of Figure 1, as r_{sf} [the 'financial norm' in Boyer (2000)] increases, the indifference curve representing firms' preferences becomes flatter and firms wish to move to the left along the expansion frontier. Other authors have emphasised the financial effects of shareholder value orientation, based on the idea that a higher rate of distributed profits reduces managers' ability to invest (Hein, 2006, 2007; Lavoie, 1995, 2008; Ndikumana, 1999; van Treeck, 2007). Finally, some authors have considered both effects to be relevant (Dallery/van Treeck, 2008; Hein, 2008b,c; Skott/Ryoo, 2008a). In our view, for the business sector as a whole, it seems plausible to assume non-zero coefficients on both the financial norm set by shareholders and on distributed profits, imply-

⁷ Many authors include also the rate of retained profits, given by $s_f(r-i_b)LEV$, in the investment function (e.g. recently Lavoie/Godley, 2001-2; Ndikumana, 1999; Skott/Ryoo, 2008a,b; van Treeck, 2007). Here we wish to keep things simple and to explicitly ground the investment function in the Post-Keynesian theory of the firm as exposed in Figure 1. While the leverage ratio affects only the finance constraint, the rate of retained profits is also directly influenced by aggregate demand, which also affects the position of the individual firm's expansion frontier. Note that with our chosen specification an increase in the dividend-payout ratio will have only an indirect negative effect on investment through an increase in the leverage ratio.

⁸ See Godley/Lavoie (2007) for the integration of financial decisions of firms and households in stock-flow consistent models. In these models, $q=1$ is not an equilibrium condition.

ing that accumulation may be restricted exclusively by preferences in some firms, and by financing constraints in others. Also, in practice, it may be almost impossible to clearly distinguish between preferences and constraints: As shareholder value orientation of management increases, their preference for profitability (linked to performance-oriented remuneration schemes) should increase together with their propensity to distribute profits, which may then further restrict investment decisions from the financing side.

The role of Tobin's q in the investment function is very controversial. In some models, it plays a crucial role allowing for positive effects of shareholder value orientation on accumulation (Skott/Ryoo, 2008a,b; van Treeck, 2007). In others, it is explicitly excluded from the investment function because it is argued that when firms themselves intervene in the stock market (e.g. by buying back shares), the resulting increase in Tobin's q will not be taken by them as a signal to invest more (Hein, 2008c; and the discussion and literature review in van Treeck, 2007).

A general saving function can be formulated as follows:

$$(5) \quad g^s = \frac{S}{K} = r - \beta_1 [(1 - s_f)(r - i_b \text{LEV}) + i_b \text{LEV}] - \beta_2 q - \beta_3 \frac{\Delta L_w}{K} - \beta_4 \frac{\Delta L_r}{K},$$

$$\text{with } \Delta L_w = f\left(\overset{+}{W}, \overset{-}{L}_w, \overset{-}{i}_l, \text{rep}\right)$$

$$\text{and } \Delta L_r = f\left(\overset{+}{\Pi}, \overset{+}{K}_b, \overset{+}{K}_s, \overset{-}{L}_r, \overset{-}{i}_l, \text{rep}\right).$$

It is assumed that there is no saving out of wage income. Saving in relation to the capital stock (g^s) is therefore determined by firms' retained profits and saving out of profits distributed to creditors and shareholders: $r - \beta_1 [(1 - s_f)(r - i_b \text{LEV}) + i_b \text{LEV}]$. Saving may be reduced if consumption out of financial wealth (q) and out of new loans granted to workers (ΔL_w) and to rentiers (ΔL_r), each relative to the capital stock, is included. Net new loans are granted to workers and rentiers respectively on the basis of wage (W) or profit (Π) income, financial

wealth, outstanding loans, the interest rate on personal loans (i_l), and the rate of loan repayment (rep).

Equation (5) encompasses different views of ‘financialisation’ in terms of its implications for private consumption. In a pure flow model, Cordonnier (2006) argues that when firms increase dividend payments at the expense of accumulation, the macroeconomic profit rate may nevertheless increase, provided that shareholders have a large propensity to consume out of distributed profits, given by β_1 in the saving function above (see also Hein, 2008b,c; Van de Velde, 2005, p. 184; van Treeck, 2008a). The likelihood of such a scenario increases further, when also the potentially positive effects of higher financial wealth on consumption are taken into account ($\beta_2 > 0$), as in Boyer (2000), Lavoie/Godley (2001-2), Skott/Ryoo (2008a,b), or van Treeck (2007). Finally, debt-financing of consumption ($\beta_3 > 0$ and/or $\beta_4 > 0$) is a further channel facilitating the divorce of profits and investment at the macroeconomic level. However, some authors have pointed at the potentially longer-term risks of debt-financed consumption. In particular, Bhaduri/Laski/Riese (2006) recall that a positive wealth effect, if it is to operate, also implies rising personal indebtedness, because financial wealth is by definition notional and cannot be realised at a macroeconomic scale. However, although rising wealth initially increases households’ collateral, allowing for an expansion of credit [$\Delta L_r = f\left(K_b^+, K_s^+\right)$], the accumulation of debt may, in the longer run, undermine households’ creditworthiness and increase their burden of debt servicing, forcing them to increase saving again [$\Delta L_r = f\left(L_r^-, i_l^-, rep^-\right)$]. In a somewhat different vein, Dutt (2005, 2006) emphasises the distributional effects of credit-financing of consumption by workers. While the initial effects are clearly expansive [upward shift in $\Delta L_w = f\left(W^+, L_w^-, i_l^-, rep^-\right)$], in the longer run, as workers accumulate debt and interest and repayment obligations increase, income is redistributed from

workers towards rentiers, which causes the overall personal saving rate to rise. Palley (1996) has also analysed such conflicting effects of credit and debt over the business cycle.

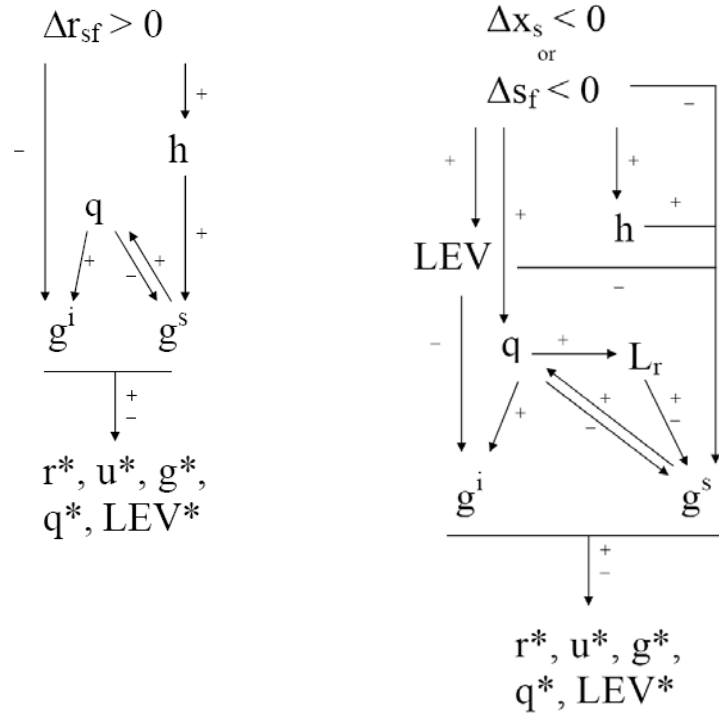
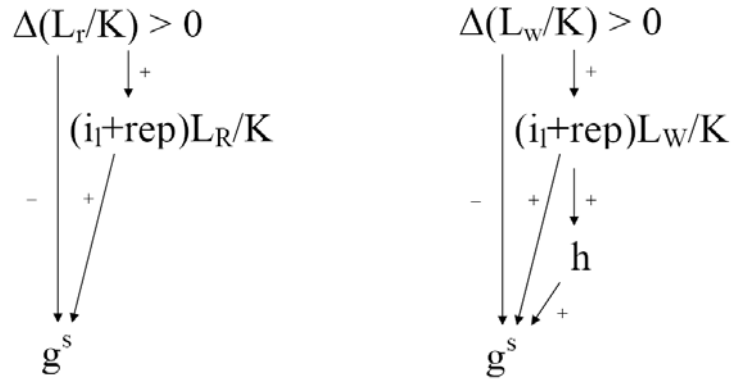
Finally, the effects of ‘financialisation’ on income distribution can be specified with the following general profit share equation:

$$(6) \quad h = \frac{\Pi}{Y} = \frac{m}{1+m}, \text{ with } m = f\left(r_{sf}^{+}, s_f^{-}, x_s^{-}\right),$$

where h is the profit share, and m is firms’ mark-up. It says that firms attempt to pass through higher profitability requirements as well as the drain of retained profits (higher dividend payouts and share buybacks) imposed by rentiers on workers by means of increasing the mark-up in goods market pricing. Such mechanisms have been discussed by e.g. Boyer (2000), Dallery/van Treeck (2008), Hein (2008b,c), and Palley (2008). Furthermore, Lavoie (2006) and Palley (2006) consider the effects of ‘cadrisme’, implying an increasingly unequal distribution of white collar, or management, wages and blue collar wages. In our view, as management’s remuneration is increasingly pegged to firms’ financial results, it is nowadays increasingly of the nature of profit income rather than ordinary wage income.

3. Different ‘regimes’

Elsewhere, we have developed and solved full macroeconomic models of ‘financialisation’ (Hein, 2008b,c; van Treeck, 2007). Here, we just summarise in an informal way the potential overall effects of ‘financialisation’ in the general framework outlined above. In Figure 2 we illustrate potential macroeconomic effects of a) increasing shareholder value orientation of firms, which means a higher profitability norm, a larger dividend payout ratio, and a lower rate of equity issues, and b) easier access to credit for private households, i.e. rentiers as well as workers. As can be seen in Figure 2, the effects of ‘financialisation’ on the endogenous variables of the model are ambiguous throughout, and different authors have therefore come to different conclusions regarding the macroeconomic effects of ‘financialisation’.

Figure 2: ‘Financialisation’, income distribution and aggregate demand**a) Shareholder value orientation, investment and saving****b) Personal borrowing and saving****3.1 Macroeconomic effects of changes in firms' preferences**

The upper left part of Figure 2 describes the effects of a higher profitability norm. In terms of Figure 1, the individual firm attempts to move leftwards along its expansion frontier. However, in the absence of compensating macroeconomic forces (i.e. impacting on the saving function), the resulting decline in accumulation will clearly be contractive and induce a de-

crease, not an increase, in firms' profit rates. This fundamental micro-macro divide has been recalled by, amongst others, Cordonnier (2006), Cordonnier/Van de Velde (2008), Dallery (2008), Firmin (2008), Hein (2008b,c), Skott/Ryoo (2008a), van Treeck (2008a,b).

Some authors have, however, argued that there may indeed be important macroeconomic forces that may allow shareholders to realise their microeconomic objectives. One widely noticed attempt in this direction has been made by Boyer (2000) in his analysis of the viability of a 'finance-led growth regime'. In this model, when employees are assumed to be 'clearly aware of the favourable effect of wage restraint on their wealth' (Boyer, 2000, p. 125), an increase in the financial norm may have overall expansive macroeconomic effects, due to the stimulating impact of higher financial wealth on consumption, and despite the direct negative effect in the investment function, as well as the indirect negative effect on consumption via the redistribution of income from wages to profits. Yet, Boyer's (2000) model is incomplete in a number of respects, and it is not clear, for instance, how exactly a change in the financial norm affects financial wealth (Tobin's q is assumed to be constant in his model, and wealth is calculated on the basis of Tobin's q , profits and the interest rate) (see Skott/Ryoo, 2008a, and van Treeck, 2008b, for a critique). In a full macroeconomic model, one would have to model financial wealth (or Tobin's q) as the result of households' saving and portfolio decisions as well as firms' financing decisions. In the framework developed above, an increase in the financial norm can only be expansionary, if it is linked to an increase in the profit share which then, via its effect on saving, stimulates Tobin's q and thereby investment (Figure 2a).⁹

A further mechanism that may countervail the depressive impact of larger profitability claims by shareholders has been analysed by Dallery/van Treeck (2008). They argue that when managers realise that the increased profitability claims are not being met, they may have incentives to buy back shares and/or to distribute higher dividends in order to satisfy shareholders. Paradoxically, this may then stimulate profitability, utilisation and accumulation, due

⁹ Another possibility would be that a higher financial norm increases households' preference for equities and hence Tobin's q and accumulation and consumption.

to rentiers' consumption out of capital income and wealth, and shareholders' microeconomic claims may hence eventually be realised at the macroeconomic level, provided that banks accept the associated increase in firms' indebtedness. A similar approach has been chosen by Cordonnier (2006), who also considers the possibility that a higher preference for profitability will be accompanied by higher dividend payments. Yet, according to this view, there is no direct causal relationship between dividend payments and investment, because dividend payments are not seen as a restriction, but rather as the result of shareholders demanding managers to distribute those profits which are not 'needed', given the preferred investment strategy. However, as argued above on the basis of Figure 1, dividend payments and share buybacks also worsen firms' financial position and may therefore further affect investment adversely. This mechanism is discussed in the next section.

3.2 Macroeconomic effects of changes in financial constraints faced by firms

Some authors have discussed the effects of shareholder value orientation in terms of its implications for firms' financing constraints. Some of these works are extensions of Post-Keynesian growth models incorporating the impact of interest payments on investment and consumption (Lavoie, 1995; Lavoie/Godley, 2001-2; Hein, 2006, 2007, 2008b,c; Skott/Ryoo, 2008a,b; van Treeck, 2007). Here, we discuss the effects of an increasing dividend payout ratio ($\Delta s_f < 0$) and of a reduction in the contribution of new equity issues to the financing of investment ($\Delta x_s < 0$) (Figure 2a). The two effects are essentially similar: both a higher dividend payout ratio, and hence a decreasing retention ratio, and share buybacks tend to increase firms' dependence on debt (higher leverage¹⁰), but they also stimulate share prices and Tobin's q because of larger household saving in both cases and lower stock of equities in the case of share buybacks. Some authors (Hein 2008b,c; Palley, 2008; van Treeck, 2007), have

¹⁰ In Hein (2008c), however, a higher dividend rate is not necessarily associated with a higher equilibrium leverage ratio. In his stable (puzzling) case, the leverage ratio may actually decline, when its initial value is already large. In the unstable (normal) case, the equilibrium value of the leverage ratio will decline, but the actual value will increase and explode due to a cumulative disequilibrium process.

also argued that a decrease in firms' retention ratio may lead to an increase in the profit share, as firms attempt to pass through higher dividend payments and financing costs to workers. Then, the overall effects on growth will be ambiguous, depending on the relative strengths of various partial effects (see Figure 2): The negative impact of higher leverage and a lower retention ratio on accumulation (via the finance frontier in terms of Figure 1); the positive effect of higher Tobin's q on accumulation (upward shift of the expansion frontier in Figure 1); the negative effect of a higher profit share on consumption; and the positive effect of higher financial wealth on consumption (directly and indirectly via the increase in collateral and household borrowing).

Therefore, it comes with no surprise that different authors have come to different conclusions regarding the overall impact of more shareholder-friendly financing decisions by firms. Lavoie/Godley (2001-2) find, in a stock-flow consistent (SFC) model, that both a lower retention rate and lower equity issues have expansive effects with their chosen model specification and parameter values. Skott/Ryoo (2008a,b) come to the same conclusion, and also provide a general analytical treatment: They conclude that for systems with relatively 'inelastic stock-flow ratios' (financial wealth-to-income ratios), the effects of higher dividends and lower equity issues can be expected to be expansive, while in the case of 'elastic stock-flow ratios', the results may be contractive.¹¹ They also argue that it is empirically more plausible to assume stock-flow inelastic systems. Somewhat different results have been derived by Hein (2008c) and van Treeck (2007), who distinguish between contractive ('normal'), intermediate, and expansive ('puzzling') cases, following Lavoie's (1995) discussion of the ambiguous effects of increases in the interest rate on the rates of capacity utilisation, profit, and accumulation. In the contractive (expansive) case, the endogenous variables are negatively (positively) affected

¹¹ Skott/Ryoo (2008 a,b) distinguish between Harrodian and Kaleckian economies with and without labour constraints. In the Harrodian labour constraint case, the expansive effects of higher dividend payments and share buybacks on growth occur only in the short run, but in the long run investment decisions are adjusted such that the economy grows at a rate given by the growth rate of labour supply. The postulated adjustment mechanism is a deterioration of firms' animal spirits in the face of increasing workers' militancy triggered by low unemployment.

throughout, while in the intermediate case the accumulation rate declines while the rates of capacity utilisation and profit increase, which corresponds to Cordonnier's (2006) 'profits without investment' and Stockhammer's (2005-6) 'investment-profit puzzle'. The somewhat more complex model by Godley/Lavoie (2007, chapter 11, pp. 435-439) and the experiments based on this model by Lavoie (2008) also show contractive results: An increase in the target proportion of investment financed by retained earnings, corresponding to a decrease in the proportion of investment financed by new equity issues, has negative effects on economic activity and growth, because it increases firms' costing margins and conflict inflation, and it decreases real wages. Although Tobin's q is rising, this does not impact on investment in this model. In Lavoie (2008), an increase in the fraction of profits distributed as dividends has negative effects on output and employment for the same reasons: firms' target costing margin and conflict inflation increases, real wages decline and the increase in Tobin's q has no positive feedback effect on investment.

As discussed by Hein (2008c), Skott/Ryoo (2008a,b), and van Treeck (2007), the overall results depend crucially on the coefficients attached to the leverage ratio and Tobin's q in the investment function and to the wealth effect in the consumption function. The plausibility of the different regimes is thus an empirical matter. While Skott/Ryoo see wealth effects on investment and consumption as empirically important, Hein and van Treeck argue that Tobin's q may be an unreliable indicator for investment decisions, when firms intervene themselves in the stock market and, for instance, actively reduce the supply of equities.¹² Also, while it is acknowledged that the wealth effect on consumption has been empirically very important in some countries (in particular in the US), they maintain that this is less the case in other countries (e.g. continental Europe) and argue that an initially wealth- and credit-driven system may

¹² See Medlen (2003) for empirical support for our doubts. According to his observations there is a positive correlation between Tobin's q , on the one hand, and the relationship between mergers to new real investment, on the other hand, the exact opposite of what Tobin's q would suggest. 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).

eventually come to an end, when it is linked to rising corporate and personal debt ratios. In the terminology applied by Taylor (2004), an initially ‘debt-led’ system may eventually become ‘debt-burdened’.

In the end, however, it seems that there is widespread agreement that shareholder value orientation potentially has overall contractive effects, when its implications for both firms’ preferences and financing constraints are taken together (see e.g. the concluding discussion in Skott/Ryoo, 2008a).

3.3 Macroeconomic effects of easier access to credit for private households

In Figure 2b, some potential implications of easier access to credit for private households are discussed. The reasons behind the ambiguous effects of increased borrowing opportunities are linked to the interaction between (the flow of) credit and (the stock of) debt. An increase in household borrowing is initially expansive because it stimulates consumption. In the longer run, however, debt servicing obligations increase and tend to depress consumer spending. Bhaduri/Laski/Riese (2006) even consider the possibility of a negative wealth effect on consumption, which is based on the idea that the wealth effect can only operate through increases in household debt, because notional wealth cannot be realised collectively but only serve as collateral for consumers.

Note that the magnitude of the conflicting flow and stock effects of higher debt will be particularly large when lower income households (workers) increase their borrowing ($\Delta L_w > 0$) and are assumed to have a higher marginal propensity to consume (MPC) than higher income households (rentiers). As emphasised by Palley (1996, p. 202) in an early contribution: ‘increases in debt initially stimulate aggregate demand by transferring spending power from creditors to debtors, but the interest payments on accumulated debt stocks become a burden on aggregate demand since they transfer income from high MPC households to low MPC

households' (see also Palley, 1994). Dutt (2006) has confirmed this mechanism in a growth context.

3.4 'Financialisation' and macroeconomic instability

It would be beyond the scope of this review to extensively discuss the literature on financial fragility. Here, we only briefly touch the issue of macroeconomic instability potentially linked to 'financialisation'.

To begin with, as argued above, both shareholder value orientation and the deregulation of credit markets are likely to contribute to rising debt ratios in both the corporate and the private household sectors, which in turn seems to increase financial fragility. As recently observed by Palley (2008, p. 2) in his overview of financialisation in the US: 'The last two decades have been marked by rapidly rising household debt-income ratios and corporate debt-equity ratios. These developments explain both the system's growth and increasing fragility [...]. The risk is when this happens the economy could be vulnerable to debt-deflation and prolonged recession.'

While these observations may not look very new to adherers of Minsky's financial fragility hypothesis (Minsky, 1975, 1982), the existing literature also shows that increasing leverage ratios and/or Tobin's q are not inevitably associated with economic expansions. Rather, when the economy is 'debt-burdened', higher leverage ratios go in line with lower utilisation, profit and accumulation rates (see also Lavoie/Seccareccia, 2001). Similarly, as shown by Bhaduri/Laski/Riese (2006, p. 418), it is possible to perceive situations in which 'the level of real income and, of virtual wealth may [...] move in opposite directions'. Lavoie (1995) and Hein (2006, 2007, 2008c), referring to Steindl's (1952) 'paradox of debt', also stress that increasing interest or dividend obligations for firms may even be associated with exploding debt ratios, despite (or because of) their contractive effects on capacity utilisation and capital accumulation.

A different type of instability potentially linked to shareholder value orientation has recently been highlighted by Cordonnier/Van de Velde (2008). They start their argument by noting that a larger (microeconomic) preference for profitability will induce a declining profit rate at the macroeconomic level (see Figure 2a). In a closed private economy, the only remedy to this macroeconomic realisation problem seems to be a higher rate of distributed profits which then stimulates consumption and hence profits. This, however, also requires higher leverage of firms, and as soon as lenders refuse to expand the flow of credit to firms, the process of adjusting the realised profit rate to shareholders' target comes to an end. While Dallery/van Treeck (2008) have envisaged the possibility that, despite the failure to finally resolve this shareholder-creditor conflict, the economy converges to a steady state consistent with the maximum leverage ratio targeted by banks, Cordonnier/Van de Velde (2008, p. 14) point at the potentially 'depressionary pathos of financialised capitalism': When firms are systematically disappointed with their realised profit rate, they may become ever more selective in their investment projects in an attempt to move leftwards on their expansion frontier (see figure 1). This, however, may lead into a depressive spiral by further reducing aggregate demand and realised profitability.

The bottom line is that 'financialisation' may be quite compatible with strong economic activity and may be very successful under certain conditions in providing firms with high profit rates. But the associated risks are equally obvious: Rising debt ratios in both the corporate and personal sectors may increase financial fragility, and when profitability claims by shareholders become overly demanding, the credit system may at some point refuse to accommodate the associated rise in private debt ratios.

4. Summary and conclusions

In the present chapter we have reviewed the integration of 'financialisation' processes into Post-Keynesian distribution and growth models and distinguished three principal channels of

influence: 1. objectives and finance restrictions of firms, 2. new opportunities for households' wealth-based and debt-financed consumption, and 3. distribution between capital and labour, on the one hand, and between management and workers, on the other hand. Starting from a re-interpretation of the Post-Keynesian theory of the firm we have bridged the gap between micro- and macro-analysis of 'financialisation' and we have traced the main characteristics and effects of 'financialisation' from the micro to the macro level taking into account stock-flow interactions. Our review of the theoretical literature on 'financialisation' shows that expansive effects may arise under certain conditions, in particular when there are strong wealth effects in firms' investment decisions (via Tobin's q) and in households' consumption decisions. However, our review also suggests that even an expansive finance-led economy may build up major financial imbalances, i.e. increasing debt-capital or debt-income ratios, which make such economies prone to financial instability.

Post-Keynesian models of growth and distribution, and in particular stock-flow consistent models, are well suited for an analysis of the complex interactions between the conflicting claims of shareholders, managers and workers, aggregate demand and the financial sphere of the economy. Given the renewed topicality of these issues, further research, both theoretical and empirical, is highly warranted.

References

- Aglietta, M. (2000), 'Shareholder value and corporate governance: some tricky questions', *Economy and Society*, 29, 146-159.
- Bhaduri, A., Laski, K. and M. Riese (2006), 'A model of interaction between the virtual and the real economy', *Metroeconomica*, 57, 412-427.
- Bhaskar, V. and A. Glyn (1995), 'Investment and profitability: The evidence from the advanced capitalist countries', in Epstein, G.A., and H.M. Gintis (eds), *Macroeconomic Policy after the Conservative Era*, Cambridge: Cambridge University Press, pp. 175-196.

- Boyer, R. (2000), 'Is a finance-led growth regime a viable alternative to Fordism? A preliminary analysis', *Economy and Society*, 29, 111-145.
- Chirinko, R.S. (1993), 'Business fixed investment spending: modelling strategies, empirical results and policy implications', *The Journal of Economic Literature*, 31, 1875-1911.
- Cordonnier, L. (2006), 'Le profit sans l'accumulation: la recette du capitalisme dominé par la finance', *Innovations, Cahiers d'économie de l'innovation*, 23 (1), 51-72.
- Cordonnier, L. and F. Van de Velde (2008), 'Financial claims and the glass ceiling of profitability', Paper presented at the Workshop 'Financialization: Post-Keynesian Approaches', University of Lille 1 (April).
- 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, 519-542.
- 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).
- Dallery, T. and T. van Treeck (2008), 'Conflicting claims and equilibrium adjustment processes in a stock-flow consistent macro model', IMK Working Paper 9/2008 (Duesseldorf, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation).
- Duménil, G. and D. Lévy, D. (2005), 'Costs and benefits of neoliberalism: a class analysis', in G.A. Epstein (ed.), *Financialization and the World Economy*, Cheltenham: Edward Elgar, pp. 17-45.
- Dutt, A.K. (2005), 'Conspicuous consumption, consumer debt and economic growth', in M. Setterfield (ed.), *Interactions in Analytical Political Economy. Theory, Policy and Applications*, Armonk, New York: M.E. Sharpe, pp. 155-178.
- Dutt, A.K. (2006), 'Maturity, stagnation and consumer debt: a Steindlian approach', *Metroeconomica*, 57, 339-364.
- Eatwell, J. and L. Taylor (2000), *Global Finance at Risk*, Cambridge: Polity Press.
- Eichner, A. (1976), *Megacorp and Oligopoly: Micro Foundations of Macro Dynamics*, Cambridge: Cambridge University Press.
- Epstein, G.A. (ed.) (2005), *Financialization in the World Economy*, Cheltenham: Edward Elgar.

- Firmin, C. (2008), Financialization and income distribution: a Post-Keynesian interpretation of the French case, Paper presented at the Workshop 'Financialization: Post-Keynesian Approaches', University of Lille 1 (April).
- Galbraith, J. K. (1967), *The New Industrial State*. Harmondsworth, Middlesex: Pelican Books.
- Godley, W. and M. Lavoie (2007), *Monetary Economics. An Integrated Approach to Credit, Money, Income, Production and Wealth*, Basingstoke: Palgrave Macmillan.
- Hein, E. (2006), 'Interest, debt and capital accumulation - a Kaleckian approach', *International Review of Applied Economics*, 20, 337-352.
- Hein, E. (2007), 'Interest rate, debt, distribution and capital accumulation in a post-Kaleckian model', *Metroeconomica*, 57, 310-339.
- Hein, E. (2008a), *Money, Distribution Conflict and Capital Accumulation. Contributions to 'Monetary Analysis'*, Basingstoke: Palgrave Macmillan.
- 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. and A. Truger (eds.), *Finance-led Capitalism? Macroeconomic Effects of Changes in the Financial Sector*, Marburg: Metropolis, forthcoming.
- Hein, E. (2008c), 'Shareholder value orientation, distribution and growth – short- and medium-run effects in a Kaleckian model', Department of Economics Working Paper No. 120 (Vienna, Vienna University of Economics and Business Administration).
- Jensen, M. C. and W.H. Meckling (1976), 'Theory of firm – Managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, 3 (4), 305-360.
- Kalecki, M. (1937), 'The principle of increasing risk', *Economica*, 4, 440-447.
- Kalecki, M. (1954), *Theory of Economic Dynamics*, London: George Allen and Unwin.
- Krippner, G.R. (2005), 'The financialization of the American economy', *Socio-Economic Review*, 3, 173-208.
- Lavoie, M. (1992), *Foundations of Post Keynesian Economic Analysis*, Aldershot: Edward Elgar.
- Lavoie, M. (1995), 'Interest rates in post-Keynesian models of growth and distribution', *Metroeconomica*, 46, 146-177.
- Lavoie, M. (2006), 'Cadrisme within a Kaleckian model of growth and distribution', RONINSON Working Paper No. 06-05 (Ottawa, University of Ottawa).
- Lavoie, M. (2008), 'Financialisation issues in a Post-Keynesian stock-flow consistent model', *Intervention. European Journal of Economics and Economic Policies*, forthcoming.

- Lavoie, M., and W. Godley (2001-2), 'Kaleckian models of growth in a coherent stock-flow monetary framework: a Kaldorian view', *Journal of Post Keynesian Economics*, 22, 277-311.
- Lavoie, M. and M. Seccareccia (2001), 'Minsky's financial fragility hypothesis: A missing macroeconomic link?', in Bellofiore, R. and P. Ferri (eds), *Financial Fragility and Investment in the Capitalist Economy, The Economic Legacy of Hyman Minsky*, vol. 2, Cheltenham, U.K.: Edward Elgar, pp. 76-96.
- Lazonick, W., and M. O'Sullivan (2000), 'Maximizing shareholder value: a new ideology for corporate governance', *Economy and Society*, 29, 13-35.
- Medlen, C. (2003), 'The trouble with Q', *Journal of Post Keynesian Economics*, 25, 693-698.
- Minsky, H. (1975), *John Maynard Keynes*, New York: Columbia University Press.
- Minsky, H. (1982), *Can "It" Happen Again? Essays on instability and finance*, Armonk, N.Y.: M.E. Sharpe
- Ndikumana, L. (1999), 'Debt service, financing constraints, and fixed investment: evidence from panel data', *Journal of Post Keynesian Economics*, 21, 455-478.
- 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, 371-390.
- Palley, T. (1996), *Post Keynesian Economics. Debt, Distribution and the Macro Economy*, Basingstoke: Macmillan.
- Palley, T. (2006), 'Class conflict and the Cambridge theory of income distribution', in Hein, E. Heise, A. and A. Truger (eds), *Wages, Employment, Distribution and Growth. International Perspectives*, Basingstoke: Palgrave Macmillan, pp. 223-246..
- Palley, T. (2008), *Financialization: What it is and why it matters*, IMK Working Paper 4/2008 (Duesseldorf, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation).
- Pasinetti, L.L. (1974), *Growth and Income Distribution*, Cambridge, UK: Cambridge University Press.
- Skott, P. and S. Ryoo (2008a), 'Macroeconomic implications of financialization', *Cambridge Journal of Economics*, forthcoming.
- Skott, P. and S. Ryoo (2008b), 'Financialization in Kaleckian economics with and without labor constraints', *Intervention. European Journal of Economics and Economic Policies*, forthcoming.
- Steindl, J. (1952), *Maturity and Stagnation in American Capitalism*, Oxford: Blackwell.

- Stockhammer, E. (2004), 'Financialisation and the slowdown of accumulation', *Cambridge Journal of Economics*, 28, 719-741.
- Stockhammer, E. (2005-6), 'Shareholder value orientation and the investment-profit puzzle', *Journal of Post Keynesian Economics*, 28, 193-215.
- Stockhammer, E. (2007) 'Some stylized facts on the finance-dominated accumulation regime', Working Paper Series No. 142, Political Economy Research Institute (Amherst, University of Massachusetts).
- Taylor, L. (2004), *Reconstructing Macroeconomics. Structuralists Proposals and Critiques of the Mainstream*, Cambridge, Mass., London: Harvard University Press.
- Van de Velde, F. (2005), *Monnaie, Chômage et Capitalisme*, Villeneuve d'Ascq: Septentrion.
- Van Treeck, T. (2007), 'A synthetic stock-flow consistent macroeconomic model of financialisation', IMK Working Paper 6/2007 (Duesseldorf, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation).
- Van Treeck, T. (2008a), 'Reconsidering the investment-profit nexus in finance-led economies: an ARDL-based approach', *Metroeconomica*, 59 (3), 371-404.
- Van Treeck, T. (2008b), 'The political economy debate on 'financialisation' – a macroeconomic perspective', IMK Working Paper 1/2008 (Duesseldorf, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation).
- Van Treeck, Hein, E. and P. Dühaupt (2007), 'Finanzsystem und wirtschaftliche Entwicklung: neuere Tendenzen in den USA und in Deutschland', IMK Studies 5/2007 (Duesseldorf, Macroeconomic Policy Institute (IMK) at Hans Boeckler Foundation).
- Wood, A. (1975), *A Theory of Profits*, Cambridge: Cambridge University Press.

Publisher: Hans-Böckler-Stiftung, Hans-Böckler-Str. 39, 40476 Düsseldorf, Germany

Phone: +49-211-7778-331, IMK@boeckler.de, <http://www.imk-boeckler.de>

IMK Working Paper is an online publication series available at:

<http://www.boeckler.de/cps/rde/xchg/hbs/hs.xls/31939.html>

ISSN: 1861-2199

The views expressed in this paper do not necessarily reflect those of the IMK or the Hans-Böckler-Foundation.

All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

**Hans Böckler
Stiftung** 

Fakten für eine faire Arbeitswelt.
