

Eckhard Hein and Till van Treeck,

Macroeconomic Policy Institute (IMK),
Hans Boeckler Foundation

**‘Financialisation’ in
Kaleckian/Post-Kaleckian models of
distribution and growth**

‘Financialisation’ in Kaleckian/Post-Kaleckian models of distribution and growth

Eckhard Hein and Till van Treeck

Abstract

The macroeconomic effects of ‘financialisation’ are assessed applying two different variants of a Kaleckian model of distribution and growth. The focus is on the effects of changes in distribution between shareholders/rentiers, firms and workers, as well as on the effects of increasing ‘shareholder value orientation’ of management’s investment decisions. An isolated increase in the ‘shareholder value orientation’ of management’s investment decisions has a uniquely negative effect on capacity utilisation, the profit rate and capital accumulation in both models. An associated rise in the dividend rate, however, has contradicting effects. In both Kaleckian models the ‘normal’ case of a negative effect throughout the endogenous variables, the ‘puzzling’ case of a positive effect throughout, and an ‘intermediate’ case with a positive effect on capacity utilisation and the profit rate and with a negative effect on capital accumulation may arise, depending on the parameter values in the investment and the saving function of the models. ‘Profits without investment’, the ‘intermediate’ case in both models, is a possible medium- or long-run accumulation regime. However, if a rising dividend rate is associated with a particularly strong increase in the mark-up and hence with pronounced redistribution at the expense of labour, the possibility of such a regime will be undermined, provided that unit profits do not have a strong effect on firms’ real investment. The long-run sustainability of such a regime will also be questioned by the adverse effects of low investment on capital stock and productivity growth.

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

Key words: Financialisation, Distribution, Growth, Kaleckian models

Corresponding author

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

1. Introduction

The recent decades have witnessed major changes in the financial sectors of developed and developing countries.¹ Generally, we have seen a drastic increase in the degree of financial intermediation and the development of new financial instruments, triggered by national and international legal liberalisation and by the development of communication technologies. With respect to the business sector, a change in the financial structure towards an increasing importance of capital-market based finance compared to bank-based finance has taken place. This development has been associated with an increasing activity of commercial banks in non-credit financial business and increasing financial activity of the non-financial business sector. Finally, the power of shareholders in joint stock companies seems to have increased relative to management and labourers. Whereas nowadays there seems to exist a broad consensus among macroeconomists of different schools saying that the development of the financial sector of an economy is crucial for its real economic growth, 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, which can broadly be described as ‘financialisation’, on distribution and growth are viewed differently.²

In the present paper we will assess the macroeconomic effects of ‘financialisation’ applying two different variants of a Kaleckian model of distribution and growth. For this purpose changes in distribution and changes in behaviour of firms and households associated with ‘financialisation’ are of interest. As far as distribution is concerned, ‘financialisation’ means an increase in the income share of rentiers, in particular a rise in rentiers’ income from

¹ See for example the overview in Eatwell/Taylor (2000).

² See the surveys by Arestis/Sawyer (2005a), Demetriadis/Adrianova (2004), Hein (2005), Levine (2003, 2005), as well as the comments by Zingales (2003).

dividends, at the expense of firms' retained profits or wage income.³ Financialisation may also be accompanied by rising management salaries at the expense of the wages of ordinary workers. Assuming different propensities to save from rentiers', managements' and workers' incomes, redistribution will affect consumption, and it will also affect investment through different channels. Therefore, the distributional effects of 'financialisation' will have a major impact on growth. A further effect on growth is related to changes in behaviour of firms and households caused or facilitated by 'financialisation'. Increasing shareholder power enforces rising 'shareholder value orientation' on the firms' management and its real investment decisions. The management's preference for growth ('retain and invest') is gradually replaced by the shareholders' preference for income ('downsize and distribute'). Finally, new financial instruments and increasing 'virtual wealth', associated with appreciation of stock market prices caused by 'shareholder value orientation' of management, might reduce the propensity to save from the actual income flows going to households. In this paper we will focus on the macroeconomic effects of changes in distribution between shareholders/rentiers, firms and workers, as well as on the effects of increasing 'shareholder value orientation' of management.

The paper is organised as follows. In the second section we briefly review the integration of 'financialisation' processes into Post-Keynesian models of distribution and growth. In the third section we present our basic model with two alternative accumulation functions which will give rise to a 'Kaleckian model' and a 'Post-Kaleckian model'. For these two models the effects of an increase in shareholder power, indicated by an increase in the dividend rate, will be analysed in section four where we distinguish two cases with respect to distribution: 1. the dividend-inelastic mark-up with an increasing dividend rate at the expense of firms' retained

³ On the empirics of financialisation and distribution see for example Argitis/Pitelis (2001, 2006), Epstein/Power (2003), Dumenil/Levy (2004, 2005), Epstein/Jayadev (2005), Power/Epstein/Abrena (2003) and Stockhammer (2004, 2005-6).

profits and 2. the dividend-elastic mark-up with a rising dividend rate at the expense of wage incomes. The fifth section summarises the main results and concludes.

2. Financialisation in Post-Keynesian models

Whereas the earlier Post-Keynesian and Kaleckian models of distribution and growth were missing an explicit introduction of monetary and financial variables, these variables have been introduced into those models since the late 1980s/early 1990s by different authors.⁴ However, the focus in these models mainly was on the introduction of the rate of interest – as an exogenous distribution parameter determined central bank policies – and bank credit created endogenously by a developed banking sector on demand by creditworthy borrowers. But recently, there have been some major attempts to introduce the processes of ‘financialisation’ into Post-Keynesian distribution and growth models. These models have stressed different aspects of the financialisation process:

First, the effects of financialisation on firms’ investment behaviour have been discussed extensively and analysed empirically by a number of authors. As a general proposition, it has been argued that policies of ‘retain and invest’ are likely to be gradually replaced by policies of ‘downsize and distribute’ in the process of financialisation (see Lazonick/O’Sullivan 2000). In particular, Crotty (1990) has conceptualised an ‘owner-manager conflict’ at the firm level, with managers having very different objectives compared to shareholders: ‘Management wants to maximize the size and power of the firm and the share of the primary markets in which it operates, not the current market value of the firm. It is interested in the status of the firm in the coming years and even in the coming decades, not just in short-term

⁴ See the contributions by, among others, Dutt (1989, 1992, 1995), Dutt/Amadeo (1993), Epstein (1992, 1994), Godley/Lavoie (2006), Hein (2006, 2007a, 2007b), Lavoie (1992: 347-371, 1993, 1995), Lavoie/Godley (2001-2), Lavoie et al. (2004), Lima/Meirelles (2006), Smithin (2003a, 2003b), and Taylor (1985, 2004: 272-278).

profits' (Crotty 1990: 533). Conversely, 'if shareholders are not especially interested in the intermediate to long-term prospects of any individual enterprise because their portfolios are both diversified and in constant flux, they will not be particularly concerned with investment policy except with regard to its short-term impact on stock values' (Crotty 1990: 535). Similarly, Stockhammer (2004, 2005-6) argues that firms typically face a 'growth-profit trade-off', with managements usually advocating growth (accumulation) and shareholders (short-term) profit maximisation. Stockhammer (2004) also presents econometric evidence in favour of 'the hypothesis that financialisation caused a slowdown in accumulation. We found strong support for our hypothesis in the USA and France, some support in the UK, but none in Germany' (Stockhammer 2004: 739). A similar view of shareholder value orientation underlies the theoretical analyses by Aglietta/Breton (2001) and Boyer (2000), where shareholders impose a 'financial norm' on managements which, *ceteris paribus*, affects investment adversely.

A second aspect of financialisation stressed in various models is the link between wealth, household indebtedness and consumption. Dutt (2005, 2006) has analysed the effects of easier access to consumer credit within a Steindlian model of growth and income distribution. Credit-based consumption is facilitated by the 'deregulation of the financial system allowing home equity lending, adjustable consumer loans and securitization [...], and technological changes in credit reporting in the USA in the 1980s [...]' (Dutt 2006: 343). Bhaduri et al. (2006) also 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 (which) is realizable individually or on a micro-, but not collectively on a macro-scale' (Bhaduri et al. 2006: 414). Clearly, were a sufficiently large number of shareholders to sell their stocks in order to increase consumption, stock prices would decline and virtual wealth be destroyed. Hence, 'the institutional arrangements of an overdraft economy become essential to maintain a boom fuelled by credit rather than realized capital

gains' (Bhaduri et al. 2006: 414). Of course, financial deregulation, as described by Dutt (2006), may improve the perspectives of maintaining a wealth-based credit boom over a considerable period of time.⁵ Therefore, an important aspect of financialisation seems to be that, while physical accumulation tends to be weakened, wealth-based and credit-fuelled consumption becomes an increasingly important driving force of the overall economy. Some authors have even considered the possibility of a 'finance-led growth regime' (Boyer 2000), in which shareholder value orientation has a positive impact on investment and 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, which in turn stimulates investment via the accelerator mechanism and overcompensates the direct negative effect of shareholder value orientation on investment (see also Aglietta 2000, Stockhammer 2005-6).

Another important effect of financialisation that has been analysed by various authors concerns different forms of income redistribution. On the one hand, it may be expected that shareholders' demand of higher distributed profits will be passed through to workers with the effect of a declining share of wages in national income (see Boyer 2000). On the other hand, a further implication of shareholder value orientation appears to be an increasing gap between manager wages and blue collar wages. Palley (2006) and Lavoie (2005) have analysed this phenomenon of 'cadrisme' (Lavoie 2005) within the framework of Post-Keynesian models of growth and distribution. In our view, shareholder value orientation is linked to this redistribution from blue collar to management wages, because, in effect, as mentioned above, management income is nowadays to a large extent 'performance-related', that is, closely linked to corporate profits and financial returns.

⁵ However, Bhaduri et al. (2006) show that it is well possible that the expansionary effects of consumer borrowing are overwhelmed in the long-run by rising interest obligations, which reduce households' creditworthiness and may eventually require higher saving by households. In Dutt's (2006) model, where the burden of servicing debt falls exclusively upon workers, the potentially contractionary 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.

In this paper we attempt to integrate some of these partial aspects of financialisation into the framework of a Kaleckian distribution and growth model. Our focus will be on the macroeconomic effects of changes in distribution between shareholders/rentiers, firms and workers, as well as on the effects of increasing ‘shareholder value orientation’ of management on firms’ investment. The analysis builds on some of our earlier extensions of traditional Post-Keynesian models with monetary and financial variables. Inspired by Lavoie (1993, 1995), Hein (2006, 2007a) has introduced interest rates and debt into Kaleckian models of distribution and growth and has discussed the effects of changes in the interest rate on income distribution, capacity utilisation, capital accumulation and the profit rate. Also debt dynamics have been studied. In these models, ‘normal’ and ‘puzzling’ cases with respect to the real effects of changes in the interest rate are distinguished. In the ‘normal’ case, changes in the interest rate have adverse effects on the real equilibrium, and the long-term equilibrium debt-capital ratio turns out to be unstable. The macroeconomic ‘paradox of debt’ may arise in this case. In the ‘puzzling’ case, changes in the interest rate are positively related to the real equilibrium values and the long-term equilibrium debt-capital ratio is stable. Van Treeck (2007) has applied the model by Hein (2007a), as well as Lavoie’s (1995) ‘Minsky-Steindl-model’, and has distinguished dividend payments/income from interest payments/income in the investment and the saving function of the model. An ‘intermediate’ case, already inherent in Hein’s (2006, 2007a) and Lavoie’s (1995) models, but not explicitly discussed there, is of special interest. In this ‘intermediate case’, rising interest or dividend payments of firms to rentiers are associated with a rising profit rate (and with a rising rate of capacity utilisation in the extension of Hein’s (2007a) model), but with a falling rate of capital accumulation. Given a specific parameter constellation ‘rising profits and falling investment’, or a ‘neo-liberal regime’, seems to be a viable medium-run accumulation constellation. However, van Treeck (2007) has not integrated the effects of changes in interest and dividend payments on the firms’ mark-up and hence on the distribution between capital and labour income. Therefore,

in the present paper we further develop our approaches and take into account these distribution effects. Financialisation processes will be integrated into two different variants of the Kaleckian distribution and growth models, a first one with a basic investment function in the spirit of Kalecki (1954) himself, and a second one based on the Post-Kaleckian investment function of Bhaduri/Marglin (1990).

3. 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 (l). 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:

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

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

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

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

$$\lambda = \frac{B}{pK}, \quad (5)$$

$$\gamma = \frac{E^R}{pK}, \quad (6)$$

$$\phi = \frac{E^F}{pK}, \quad (7)$$

$$\Pi = \Pi^F + R^i + R^d, \quad (8)$$

$$R^i = iB, \quad (9)$$

$$R^d = dE^R, \quad (10)$$

$$\sigma = \frac{S}{pK} = \frac{\Pi - R^i - R^d + s_R(R^i + R^d)}{pK} = r - (1 - s_R)(i\lambda + d\gamma), \quad 0 < s_R \leq 1, \quad (11)$$

$$g = \frac{I}{K} = \alpha + \beta u + \rho(r - i\lambda - d\gamma) - \varepsilon d, \quad \alpha, \beta, \rho, \varepsilon \geq 0, \quad \rho < 1, \quad (12a)$$

$$g = \frac{I}{K} = \alpha + \beta u + \tau h - \theta(i\lambda + d\gamma) - \varepsilon d, \quad \alpha, \beta, \tau, \theta, \varepsilon \geq 0, \quad (12b)$$

$$g = \sigma, \quad (13)$$

$$\frac{\partial \sigma}{\partial u} - \frac{\partial g}{\partial u} > 0 \quad \Rightarrow \quad (1 - \rho) \frac{h}{v} - \beta > 0, \quad (14a)$$

$$\frac{\partial \sigma}{\partial u} - \frac{\partial g}{\partial u} > 0 \quad \Rightarrow \quad \frac{h}{v} - \beta > 0. \quad (14b)$$

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 with the mark-up being determined by the degree of price competition in the goods markets 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 (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.⁶ 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 (directly or through banks) (B) or equity issued by the firms and held by rentiers' household (E^R). λ, γ, ϕ are the debt-capital-ratio, the rentiers' equity-capital-ratio and the accumulated retained earnings-capital ratio, respectively (equations 5-7). We assume these ratios to be constant for the purpose of our following analysis. Total profits (Π) split into firms' retained profits (Π^F), on the one hand, and dividends paid on equity held by rentiers (R^d) as well as interest paid on debt (R^i) also accruing to rentiers' households, on the other hand (equation 8).

Interest payments to rentiers' households are given by the rate of interest (i) and the stock of debt (equation 9), with the rate of interest as a distribution parameter being an exogenous variable mainly determined by monetary policies, following the Post-Keynesian 'horizontalist' view of endogenous money and credit, pioneered by Kaldor (1970, 1982, 1985), Lavoie (1984, 1992: 149-216, 1996) and Moore (1988, 1989).⁷ Dividend payments are given by the dividend rate (d) and the stock of equity held by rentiers' households. We consider the dividend rate to be an exogenous variable as well. It is determined by the power struggle between rentiers (shareholders) and firms (management) with the rentiers being interested in high dividends for income purposes and the management being in favour of retained earnings for firms' real investment and growth purposes.

Changes in the interest rate and in the dividend rate may be associated with a change in the mark-up in firms' pricing in incompletely competitive goods market (equation 1), depending on the degree of competition in the goods market and the power of workers and labour unions

⁶ 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 (Graziani 1989, 1994, Lavoie 1992: 151-169, Seccareccia 1996, 2003, Hein 2007b: chapter 10.2).

⁷ In this view, the central bank controls the base rate of interest. Commercial banks set the market rate of interest by marking up the base rate, with the mark-up being affected by liquidity and risk assessments and by the degree of competition in the commercial banking sector, and then supply the credit demand of consumers and investors they consider creditworthy at this interest rate. The central bank accommodates the necessary amount of cash. For a survey of the Post-Keynesian endogenous money view and its implementation into Post-Keynesian models of distribution and growth see Hein (2007b).

in the labour market. If these changes occur, distribution between gross profits as the sum of retained 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 dividend rate in the following section, we will distinguish two cases: 1. the dividend-inelastic mark-up in which a rising dividend rate leaves the profit share in national income untouched and only affects firms' retained profits adversely, and 2. the dividend-elastic mark-up in which an increasing dividend rate affects distribution between gross profits and wages. The first case is likely to occur under the conditions of a high degree of competition in the goods market and strong labour unions in the labour market. The second case will emerge with a low degree of competition in the goods market and weak bargaining power of labour unions.

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, i.e. 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 (11) which relates total saving to the nominal capital stock. Note that an increase in the dividend rate (and also the interest rate), *ceteris paribus*, decreases the saving rate because income is transferred from firms with a saving propensity of unity to rentiers' households with a saving propensity of presumably less than unity.⁸

Two different functions for the accumulation rate (g), relating net investment (I) to the capital stock, are introduced. The first in equation (12a), based on the 'stagnationist' Kaleckian distribution and growth models, is an extension of the function employed in Hein (2006). The basic elements follow the arguments in Kalecki (1954) rather closely and assume that investment decisions are positively affected both by expected sales and by retained earnings. Expected sales are determined by the rate of capacity utilisation. Retained earnings are given

⁸ In our model, we consider only rentiers' consumption out of current income flows. When shareholder value orientation is furthermore linked to increasing stock prices, it can be expected that rising (stock market) wealth further lowers the overall saving rate, in particular when households can borrow extensively against collateral, as described by Dutt (2006) and Bhaduri et al. (2006).

by the difference between profits and interest plus dividend payments, with each variable being normalised by the capital stock. Therefore, an increase in the interest rate or in the dividend rate has a negative impact on investment because firms' internal funds for long-term 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'. While the constant in the investment function (α) covers managements' 'animal spirits' and desire for growth, as usually seen in Post-Keynesian or Kaleckian models of growth, we have further added a term indicating the influence of shareholder power, reflected by the dividend rate, on firms' investment (ε). An increasing dividend rate affects investment adversely not only through the reduction of internal funds, but also through shareholder value orientation of management.

The alternative accumulation function (equation 12b) is an extension of the function employed by Hein (2007a), and it is based on the investment function proposed by Bhaduri/Marglin (1990) in their non-monetary Kaleckian distribution and growth model. In this function we have again a positive effect of managements' 'animal spirits' and of capacity utilisation on investment, and a negative effect of profits distributed to rentiers and of the degree of 'shareholder value orientation' of management. In contrast to the first accumulation function, we also have a positive effect of unit profits or the profit share on firms' real investment decisions, following Bhaduri/Marglin. The model with the investment function (12a) close to Kalecki's original ideas will be called the 'Kaleckian model', whereas the model with investment function (12b) will be termed the 'Post-Kaleckian model'.

The goods market equilibrium in both models is determined by the equality of saving and investment decisions (equation 13). The goods market stability conditions require that the saving rate responds more elastically to changes in capacity utilisation than capital accumulation does (equations 14a and 14b). Taken together, equations (1) - (11), (12a), (13)

and (14a) describe the Kaleckian model, whereas equations (1) - (11), (12b), (13) and (14b) represent the Post-Kaleckian model.

For the Kaleckian model, we obtain the following goods market equilibrium values:

$$u^* = \frac{\alpha + (i\lambda + d\gamma)(1 - s_R - \rho) - \varepsilon d}{(1 - \rho)\frac{h}{v} - \beta}, \quad (15a)$$

$$r^* = \frac{\frac{h}{v}[\alpha + (i\lambda + d\gamma)(1 - s_R - \rho) - \varepsilon d]}{(1 - \rho)\frac{h}{v} - \beta}, \quad (16a)$$

$$g^* = \frac{\alpha \frac{h}{v} + (i\lambda + d\gamma)\left[\beta(1 - s_R) - \rho \frac{h}{v} s_R\right] - \varepsilon d\left(\beta + \rho \frac{h}{v}\right)}{(1 - \rho)\frac{h}{v} - \beta}. \quad (17a)$$

For the Post-Kaleckian model, the following goods market equilibrium values are derived:

$$u^* = \frac{\alpha + \tau h + (i\lambda + d\gamma)(1 - s_R - \theta) - \varepsilon d}{\frac{h}{v} - \beta}, \quad (15b)$$

$$r^* = \frac{\frac{h}{v}[\alpha + \tau h + (i\lambda + d\gamma)(1 - s_R - \theta) - \varepsilon d]}{\frac{h}{v} - \beta}, \quad (16b)$$

$$g^* = \frac{(i\lambda + d\gamma)\left[\beta(1 - s_R) - \theta \frac{h}{v}\right] + \frac{h}{v}(\alpha + \tau h - \varepsilon d)}{\frac{h}{v} - \beta}. \quad (17b)$$

In what follows, the effects of financialisation on stable goods market equilibria only will be discussed. Note that the importance of shareholder value orientation for managements' investment decisions, indicated by ε in the investment function, has uniquely negative effects on the endogenous variables in both models. An increase in the dividend rate, however, has ambiguous effects. It affects firms' investment decisions, but it also has an influence on the income of rentier households and hence consumption. If a change in the dividend rate is accompanied by a change in the mark-up, also distribution between capital and labour is

affected and there will be associated effects on consumption and on investment. In the following section we analyse the effects of an increasing dividend rate, as an indicator of shareholder value power, treating shareholder value orientation of managements' investment decisions (ε) as a parameter.

4. The effects of an increasing dividend rate

Discussing the effects of an increasing dividend rate (d) associated with increasing shareholder power, we assume that the interest rate, the debt-capital ratio and the rentiers' equity-capital-ratio each remain constant. For the Kaleckian model we get the following effects of a change in the dividend rate on the real equilibrium:

$$\frac{\partial u}{\partial d} = \frac{(1-s_R - \rho)\gamma - \varepsilon - \frac{\partial h}{\partial d}(1-\rho)\frac{u}{v}}{(1-\rho)\frac{h}{v} - \beta}, \quad (18a)$$

$$\frac{\partial r}{\partial d} = \frac{\frac{h}{v}[(1-s_R - \rho)\gamma - \varepsilon] - \frac{\partial h}{\partial d}\beta\frac{u}{v}}{(1-\rho)\frac{h}{v} - \beta}, \quad (19a)$$

$$\frac{\partial g}{\partial d} = \frac{\beta\gamma - (s_R\gamma + \varepsilon)\left(\beta + \rho\frac{h}{v}\right) - \frac{\partial h}{\partial d}\frac{1}{v}[\beta u - (1-\rho)\varepsilon d]}{(1-\rho)\frac{h}{v} - \beta}. \quad (20a)$$

For the Post-Kaleckian model the following effects of a change in the dividend rate are derived:

$$\frac{\partial u}{\partial d} = \frac{(1-s_R - \theta)\gamma - \varepsilon + \frac{\partial h}{\partial d}\left(\tau - \frac{u}{v}\right)}{\frac{h}{v} - \beta}, \quad (18b)$$

$$\frac{\partial r}{\partial d} = \frac{\frac{h}{v}[(1-s_R - \theta)\gamma - \varepsilon] + \frac{\partial h}{\partial d} \frac{1}{v}(\tau h - \beta u)}{\frac{h}{v} - \beta}, \quad (19b)$$

$$\frac{\partial g}{\partial d} = \frac{\beta\gamma(1-s_R) - \frac{h}{v}(\theta\gamma + \varepsilon) + \frac{\partial h}{\partial d} \frac{1}{v}(\tau h - \beta u)}{\frac{h}{v} - \beta}. \quad (20b)$$

In the following discussion we distinguish the two cases regarding the effects of a change in the dividend rate on firms' mark-up and hence on distribution between gross profits and wages. First, we assume the mark-up to be inelastic with respect to changes in the dividend rate, and then we will assume a dividend-elastic mark-up.

4.1 The dividend-inelastic mark-up: increasing the dividend rate at the expense of firms' retained profits

In the case of a dividend-inelastic mark-up, distribution between gross profits and wages is not affected by an increase in shareholder value power: $\frac{\partial h}{\partial d} = 0$, and the labour income share remains constant. We associate this case with a high degree of price competition in the goods market and with powerful labour unions in the labour market.

4.1.1 The Kaleckian model

The effects of a change in the dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation may be positive or negative, depending on the parameter values in the saving and the investment function of the model. From equations (18a), (19a) and (20a) we obtain the following conditions for positive effects of a rising dividend rate on the equilibrium values of the system:

$$\frac{\partial u}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \rho \quad (18a')$$

$$\frac{\partial r}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \rho \quad (19a')$$

$$\frac{\partial g}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} \quad (20a')$$

Assuming the stability condition for the goods market equilibrium (equation 14a) to hold

implies for equation (20a'): $\frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} > 1$.⁹ Therefore, we get the following regimes/cases for

the Kaleckian model in Table 1.

Table 1: Effects of a change in the dividend rate in the Kaleckian model with a constant profit share, constant interest rate, and constant debt-capital- and equity-capital-ratios			
	The 'normal' case	The 'intermediate' case	The 'puzzling' case
	$1 - s_R < \frac{\varepsilon}{\gamma} + \rho$	$\frac{\varepsilon}{\gamma} + \rho < 1 - s_R < \frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}}$	$\frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} < 1 - s_R$
$\frac{\partial u}{\partial d}$	–	+	+
$\frac{\partial r}{\partial d}$	–	+	+
$\frac{\partial g}{\partial d}$	–	–	+

The 'normal' case of a negative impact of an increase in the dividend rate throughout on the real equilibrium values of capacity utilisation, the profit rate and the rate of capital accumulation will be given if: $1 - s_R < \frac{\varepsilon}{\gamma} + \rho$. Therefore, this case is the more likely the higher the rentiers' propensity to save, the lower the rentiers' equity-capital ratio, the higher the responsiveness of firms' real investment with respect to internal funds and the more important shareholder value orientation is for firms' investment decisions. With this parameter

⁹ From the stability condition $(1-\rho)(h/v) - \beta > 0$, we get $(h/v) - \rho(h/v) > \beta$, and hence $(h/v) > \beta + \rho(h/v)$.

constellation the increase in consumption demand associated with the redistribution of income from firms to rentiers' households, triggered by a rising dividend rate, is insufficient to compensate for the negative effects on firms' investment.

In the 'puzzling' case we have the opposite parameter constellation: $\frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} < 1 - s_R \cdot A$

low propensity to save out of rentiers' income, a high rentiers' equity-capital ratio, little importance of shareholder value orientation for firms' investment decisions and high responsiveness of investment with respect to capacity utilisation allow for a positive effect of an increasing dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation. Generally, we find that the more important 'shareholder value orientation' is in the firms' accumulation function, the more likely becomes the 'normal' case, that is a negative effect of an increase in shareholder power and the dividend rate on the real equilibrium values.

In the Kaleckian model, an 'intermediate' case arises if: $\frac{\varepsilon}{\gamma} + \rho < 1 - s_R < \frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}}$. In this

case, an increase in the dividend rate is accompanied by a rising rate of capacity utilisation and a rising rate of profit due to improved capacity utilisation, but by a falling equilibrium rate of capital accumulation. What is required for the 'intermediate' case, on the one hand, are a relatively high rentiers' equity-capital-ratio and a low rentiers' propensity to save, which boost consumption demand in the face of a rising dividend rate, and a low responsiveness of firms' investment with respect to internal funds which limits the negative effects on firms' investment. On the other hand, however, in the 'intermediate' case we 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 dividend rate through internal funds and shareholder value orientation.

4.1.2 The Post-Kaleckian model

In the Post-Kaleckian model the effects of a change in the dividend rate on the real equilibrium values may also be either positive or negative, depending on the parameter values in the saving and investment functions. From equations (18b), (19b) and (20b) we obtain the following conditions for a positive effect:

$$\frac{\partial u}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \theta \quad (18b')$$

$$\frac{\partial r}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \theta \quad (19b')$$

$$\frac{\partial g}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{h}{\beta v} \left(\frac{\varepsilon}{\gamma} + \theta \right) \quad (20b')$$

Assuming the stability condition for the goods market equilibrium (equation 14b) to hold implies for equation (20b'): $\frac{h}{\beta v} > 1$.¹⁰ Therefore, we get the following regimes/cases for the

Post-Kaleckian model in Table 2.

Table 2: Effects of a change in the dividend rate in the Post-Kaleckian model with a constant profit share, constant interest rate, and constant debt-capital- and equity-capital-ratios			
	The 'normal' case	The 'intermediate' case	The 'puzzling' case
	$1 - s_R < \frac{\varepsilon}{\gamma} + \theta$	$\frac{\varepsilon}{\gamma} + \theta < 1 - s_R < \frac{h}{\beta v} \left(\frac{\varepsilon}{\gamma} + \theta \right)$	$\frac{h}{\beta v} \left(\frac{\varepsilon}{\gamma} + \theta \right) < 1 - s_R$
$\frac{\partial u}{\partial d}$	–	+	+
$\frac{\partial r}{\partial d}$	–	+	+
$\frac{\partial g}{\partial d}$	–	–	+

¹⁰ From the stability condition $(h/v) - \beta > 0$, we get $h > \beta v$.

In the Post-Kaleckian model we also obtain a ‘normal’ and a ‘puzzling’ case, similar to the Kaleckian model. The ‘normal’ case with a negative effect of an increase in the dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation, prevails if:

$$1 - s_R < \frac{\varepsilon}{\gamma} + \theta.$$

Therefore, this case becomes the more likely, the higher the rentiers’ propensity to save, the lower the rentiers’ equity-capital-ratio, the more important retained earnings are for investment and the more pronounced managements’ ‘shareholder value orientation’ is for firms’ investment decisions.

The ‘puzzling’ case with a positive effect of an increasing dividend rate on the equilibrium

rates of capacity utilisation, profit and capital accumulation is given if $\frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) < 1 - s_R$.

This case requires a low rentiers’ propensity to save, a high rentiers’ equity-capital-ratio, a high effect of capacity utilisation on firms’ investment, and a low impact of internal funds and ‘shareholder value orientation’. A low profit share and a high capital-potential output-ratio make this case more likely, too. Whereas in the ‘normal’ case the stimulating effects of redistribution of profits from firms to rentiers’ household on consumption demand are not sufficient to over-compensate the restrictive effects on investment demand, in the ‘puzzling’ case this ‘over-compensation’ takes effect. Generally, again, the higher shareholder value orientation of management the more likely becomes the ‘normal’ case.

In the Post-Kaleckian model we have also an ‘intermediate’ case, if:

$$\frac{\varepsilon}{\gamma} + \theta < 1 - s_R < \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right).$$

In this case, an increase in the dividend rate raises the equilibrium rates of capacity utilisation and profit, but decreases the equilibrium rate of capital accumulation. In the ‘intermediate’ case we have a low rentiers’ propensity to save and a high rentiers’ equity-capital ratio which allow for an increase in capacity utilisation and the rate of profit in the face of a moderate or weak effect of internal funds and shareholder value orientation on firms’ investment. But this constellation is insufficient to stimulate capital

accumulation because of a low impact of capacity utilisation on firms' investment decisions. A low capital-potential output-ratio and a high profit share are also conducive to this constellation.

4.2 The dividend-elastic mark-up: increasing the dividend rate at the expense of wage incomes

With a dividend-elastic mark-up, $\frac{\partial h}{\partial d} > 0$ and the labour income share decreases in the face of a rising dividend rate. Retained profits of firms do not have to carry the whole burden or may even remain constant. This case will be associated with low price competition in the goods market and weak labour unions in the labour market. As will be seen below, for both models we obtain again positive or negative effects of a change in the dividend rate on the real equilibrium values. And also the negative impact of shareholder power on investment decisions and hence on real equilibrium is maintained in both models.

4.2.1 The Kaleckian model

From equations (18a), (19a) and (20a) we obtain the following conditions for a positive relation between the dividend rate and the equilibrium rates of capacity utilisation, profit and capital accumulation in the Kaleckian model:

$$\frac{\partial u}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{(1 - \rho)u}{v\gamma} \quad (18a'')$$

$$\frac{\partial r}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{\beta u}{h\gamma} \quad (19a'')$$

$$\frac{\partial g}{\partial d} > 0, \quad \text{if :} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} + \frac{\partial h}{\partial d} \left[\frac{\beta u - (1 - \rho)\varepsilon d}{\gamma(\beta v + \rho h)} \right] \quad (20a'')$$

Generally, the reduction of the labour income share associated with a rising dividend rate has a negative impact on effective demand and makes a positive effect of increasing dividend rates on capacity utilisation and the rate of profit, as in the ‘puzzling’ or in the ‘intermediate’ case, less likely, but not impossible (equations 18a, 18a’’, 19a, 19a’’). The effect of redistribution at the expense of labour on equilibrium capital accumulation is likely to be negative, too (equations 20a, 20a’’). But a positive relationship between the dividend rate and the accumulation rate remains possible, also with a dividend-elastic mark-up. Therefore, we obtain again the three cases/regimes discussed above, the ‘normal’, the ‘intermediate’ and the ‘puzzling’ case, as is shown in Table 3, with the ‘intermediate’ and the ‘puzzling’ case becoming less likely with a dividend-elastic mark-up.

Table 3: Effects of a change in the dividend rate in the Kaleckian model with a dividend-elastic profit share, a constant interest rate, and constant debt-capital- and equity-capital-ratios			
	The ‘normal’ case	An ‘intermediate’ case	The ‘puzzling’ case
	$1-s_R < \frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{(1-\rho)u}{v\gamma}$	$\frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{(1-\rho)u}{v\gamma} < 1-s_R$	$\frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{(1-\rho)u}{v\gamma} < 1-s_R$
$\frac{\partial u}{\partial d}$	–	+	+
	$1-s_R < \frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{\beta u}{h\gamma}$	$\frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{\beta u}{h\gamma} < 1-s_R$	$\frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{\beta u}{h\gamma} < 1-s_R$
$\frac{\partial r}{\partial d}$	–	+	+
	$1-s_R < \frac{\varepsilon}{\gamma} + \rho \frac{h}{\beta + \rho \frac{h}{v}} + \frac{\partial h}{\partial d} \left[\frac{\beta u - (1-\rho)\varepsilon d}{\gamma(\beta v + \rho h)} \right]$	$1-s_R < \frac{\varepsilon}{\gamma} + \rho \frac{h}{\beta + \rho \frac{h}{v}} + \frac{\partial h}{\partial d} \left[\frac{\beta u - (1-\rho)\varepsilon d}{\gamma(\beta v + \rho h)} \right]$	$\frac{\varepsilon}{\gamma} + \rho \frac{h}{\beta + \rho \frac{h}{v}} + \frac{\partial h}{\partial d} \left[\frac{\beta u - (1-\rho)\varepsilon d}{\gamma(\beta v + \rho h)} \right] < 1-s_R$
$\frac{\partial g}{\partial d}$	–	–	+

We can assume that the ‘normal’ case will occur if $1-s_R < \frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{(1-\rho)u}{v\gamma}$, because the

term on the right hand side of equation (18a’’) is likely to be smaller than the right hand side

term in equation (19a'').¹¹ And the right hand side term in (19a'') is likely to be smaller than the one in (20a'').¹² Therefore, the 'intermediate' case will prevail, if

$$\frac{\varepsilon}{\gamma} + \rho + \frac{\partial h}{\partial d} \frac{(1-\rho)u}{v\gamma} < 1 - s_R < \frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} + \frac{\partial h}{\partial d} \left[\frac{\beta u - (1-\rho)\varepsilon d}{\gamma(\beta v + \rho h)} \right].$$

And the 'puzzling' case

will occur if $\frac{\varepsilon}{\gamma} + \rho \frac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} + \frac{\partial h}{\partial d} \left[\frac{\beta u - (1-\rho)\varepsilon d}{\gamma(\beta v + \rho h)} \right] < 1 - s_R$. Provided that there is a strong

accelerator effect in the investment function, a strong effect of the dividend rate on the profit share will increase the likelihood of the 'normal' case.

4.2.2 The Post-Kaleckian model

For the Post-Kaleckian model we obtain the following conditions for a positive relationship between the dividend rate and the equilibrium values of the rates of capacity utilisation, profit and capital accumulation from equations (18b), (19b) and (20b):

$$\frac{\partial u}{\partial d} > 0, \quad \text{if:} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau}{\gamma} \right) \quad (18b'')$$

$$\frac{\partial \tau}{\partial d} > 0, \quad \text{if:} \quad 1 - s_R > \frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{\beta u}{\gamma h} - \frac{\tau}{\gamma} \right) \quad (19b'')$$

$$\frac{\partial g}{\partial d} > 0, \quad \text{if:} \quad 1 - s_R > \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right) \quad (20b'')$$

Redistribution at the expense of labour following an increase in the dividend rate may either reduce or amplify the direct effects of a rising dividend rate on the rates of capacity utilisation, profit and capital accumulation. As can be seen from equations (18b) – (20b) and from (18b'') – (20b'') a high responsiveness of investment with respect to unit profits makes

¹¹ The term $[(1-\rho)u]/(v\gamma)$ in equation (18a'') is likely to be smaller than $(\beta u)/(\gamma h)$ in equation (19a''), because the numerator in the term from (18a'') has only values below unity and the denominator has a variable (v) which may exceed unity, whereas the numerator in the term from (19a'') has a variable which may exceed unity and the denominator has only variables below unity.

¹² Note that from the goods market stability condition it follows that $(h/v)/[\beta + \rho(h/v)] > 1$.

a positive effect of redistribution on the real variables – and hence a ‘puzzling’ or ‘intermediate’ case for the effects of a changing dividend rate more likely. Generally, we obtain again the ‘normal’, an ‘intermediate’ and the ‘puzzling’ case/regime which are shown in Table 4.

Table 4: Effects of a change in the dividend rate in the Post-Kaleckian model with a dividend-elastic profit share, a constant interest rate, and constant debt-capital- and equity-capital-ratios			
	The ‘normal’ case	An ‘intermediate’ case	The ‘puzzling’ case
	$1-s_R < \frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau}{\gamma} \right)$	$\frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau}{\gamma} \right) < 1-s_R$	$\frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau}{\gamma} \right) < 1-s_R$
$\frac{\partial u}{\partial d}$	–	+	+
	$1-s_R < \frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{\beta u}{\gamma h} - \frac{\tau}{\gamma} \right)$	$\frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{\beta u}{\gamma h} - \frac{\tau}{\gamma} \right) < 1-s_R$	$\frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{\beta u}{\gamma h} - \frac{\tau}{\gamma} \right) < 1-s_R$
$\frac{\partial r}{\partial d}$	–	+	+
	$1-s_R < \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right)$	$1-s_R < \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right)$	$\frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right) < 1-s_R$
$\frac{\partial g}{\partial d}$	–	–	+

It seems to be reasonable to assume that the ‘normal’ case will prevail if

$$1-s_R < \frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau}{\gamma} \right) \text{ or if } 1-s_R < \frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{\beta u}{\gamma h} - \frac{\tau}{\gamma} \right),$$

because the term of the right hand side of equation (20b’’) is likely to be greater than the respective ones in equations (18b’’) and (19b’’).¹³ Therefore, the ‘intermediate’ case is likely to occur if

$$\frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau}{\gamma} \right) < 1-s_R < \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right) \quad \text{or} \quad \text{if}$$

$$\frac{\varepsilon}{\gamma} + \theta + \frac{\partial h}{\partial d} \left(\frac{\beta u}{\gamma h} - \frac{\tau}{\gamma} \right) < 1-s_R < \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right).$$

¹³ This due to the stability condition affecting the terms of the right hand side and the possible values for the variables of the right hand side of equations (18b’’) – (20b’’).

most probably arise if: $1 - s_R > \frac{h}{v\beta} \left(\frac{\varepsilon}{\gamma} + \theta \right) + \frac{\partial h}{\partial d} \left(\frac{u}{\gamma v} - \frac{\tau h}{\beta \gamma v} \right)$. Note that a high elasticity of the profit share with respect to the dividend rate reduces the likelihood of the ‘intermediate’ and the ‘puzzling’ case, unless there is a strong profitability effect on investment.

5. Conclusions

In the present paper we have integrated some – in our view – important tendencies associated with ‘financialisation’ into two different variants of the Kaleckian model of distribution and growth, a Kaleckian model with a basic investment function close to Kalecki’s original writings and a Post-Kaleckian model based on an extension of the investment function proposed by Bhaduri/Marglin (1990). We have associated ‘financialisation’ with rising power of shareholders which has caused increasing ‘shareholder value’ orientation of the firms’ management with a partially negative effect on firms’ investment in capital stock (‘downsize and distribute’ instead of ‘retain and invest’). Rising power of shareholders is also associated with an increasing dividend rate. We have taken into account that increasing dividend payments not only affect firms’ investment negatively but also affect rentiers’ household consumption positively. Finally, we have also taken into account that expansive effects of increasing dividend payments may be contradicted if they are accompanied by a rising mark-up and hence a falling wage share.

We have shown that rising ‘shareholder value orientation’ of management’s investment decisions with a constant dividend rate has a uniquely negative effect on capacity utilisation, the profit rate and capital accumulation in both our models. An associated increase in distributed profits through an increase in the dividend rate, however, has contradicting effects on the economy. We have shown that in both our Kaleckian models the ‘normal’ case of a

negative effect throughout the endogenous variables, the ‘puzzling’ case of a positive effect throughout, and an ‘intermediate’ case with a positive effect on capacity utilisation and the profit rate and with a negative effect on capital accumulation may arise, depending on the parameter values in the investment and the saving function of the models.

If an increasing dividend rate is accompanied by a rising mark-up in firms’ pricing decisions and hence by a falling wage share, in the Kaleckian model the ‘puzzling’ and the ‘intermediate’ cases become less likely and a negative effect on capacity utilisation, the rate of profit and capital accumulation is more probable. In the Post-Kaleckian model the direction of the effects of redistribution at the expense of labour mainly depends on the elasticity of investment with respect to unit profits or the profit share. A very high elasticity will make the ‘puzzling’ and ‘intermediate’ cases more likely. With a low elasticity the ‘normal’ case will become more probable.

‘Profits without investment’, the ‘intermediate’ case in both models, is a possible medium- or long-run accumulation regime in the approach developed here. However, if a rising dividend rate is associated with a major increase in the mark-up and hence with redistribution at the expense of labour, the possibility of such a regime will be undermined, provided that unit profits do not have a strong effect on firms’ real investment. Also, the larger the negative effect of a given degree of shareholder power, reflected in the dividend rate, on managements’ investment decisions, the lower are the prospects for the ‘puzzling’ and ‘intermediate’ cases. Therefore, both tendencies will make a negative effect of an increasing dividend rate on the rates of capacity utilisation, profit and capital accumulation, and hence on real development more likely. Finally, it should be noted that an ‘intermediate’ regime, if it prevails for a certain period of time, will face long-run problems caused by the effects of weak real investment on the size of the capital stock and on productivity growth, as far as the latter is embodied in capital stock. Although being characterised by a high level of activity and a high

profit rate in the short and medium run, this regime will therefore face long-run growth, employment and inflation problems.¹⁴

¹⁴ For the effects of capital stock growth on GDP growth, employment and inflation see Arestis/Baddeley/Sawyer (2006, 2007), Arestis/Biefang-Frisancho Mariscal, (2000), Arestis/Sawyer (2004: 73-99, 2005b), Leon-Ledesma/Thirlwall (2002), Rowthorn (1995, 1999), and Sawyer (2002).

References

- Aglietta, M. (2000): Shareholder value and corporate governance: some tricky questions, *Economy and Society*, 29: 146-159.
- Aglietta, M., Breton, R. (2001): Financial systems, corporate control and capital accumulation, *Economy and Society*, 30: 433-466.
- 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*, Basingstoke: Palgrave Macmillan.
- Arestis, P., Baddeley, M., Sawyer, M. (2007): The relationship between capital stock, unemployment and wages in nine EMU countries, *Bulletin of Economic Research*, 59: 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: 487-503.
- Arestis, P., Sawyer, M. (2004): *Re-examining Monetary and Fiscal Policy for the 21st Century*, Cheltenham: Edward Elgar.
- 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*, Basingstoke: Palgrave Macmillan.
- Arestis, P., Sawyer, M. (2005b): Aggregate demand, conflict and capacity in the inflationary process, *Cambridge Journal of Economics*, 29: 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: 617-638.
- Argitis, G., Pitelis, C. (2006): Global finance, income distribution and capital accumulation, *Contributions to Political Economy*, 25: 63-81.

- Bhaduri, A., Laski, K., Riese, M. (2006): 'A model of interaction between the virtual and the real economy', *Metroeconomica*, 57: 412-427.
- Bhaduri, A., Marglin, S. (1990): Unemployment and the real wage: the economic basis for contesting political ideologies, *Cambridge Journal of Economics*, 14: 375-393.
- Boyer, R. (2000): Is a finance-led growth regime a viable alternative to Fordism? A preliminary analysis, *Economy and Society*, 29: 111-145.
- 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.
- Demetriades, P., Andrianova, 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*, Basingstoke: Palgrave Macmillan.
- Dumenil, G., Levy, D. (2004): The real and financial components of profitability (USA 1948-2000), *Review of Radical Political Economy*, 36: 82-110.
- Dumenil, G., Levy, D. (2005): Costs and benefits of neoliberalism: a class analysis, in: Epstein, G.A. (ed.), *Financialization and the World Economy*, Cheltenham: Edward Elgar.
- Dutt, A.K. (1989): Accumulation, distribution and inflation in a Marxian/post-Keynesian model with a rentier class, *Review of Radical Political Economics*, 21 (3): 18-26.
- Dutt, A.K. (1992): Rentiers in post-Keynesian models, in: Arestis, P., Chick, V. (eds.), *Recent Developments in Post-Keynesian Economics*, Aldershot, Brookfield: Edward Elgar.
- Dutt, A.K. (1995): Internal finance and monopoly power in capitalist economies: a reformulation of Steindl's growth model, *Metroeconomica*, 46: 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*, Armonk, New York: M.E. Sharpe.

- Dutt, A.K. (2006): Maturity, stagnation and consumer debt: a Steindlian approach, *Metroeconomica*, 57: 339-364.
- Dutt, A.K., Amadeo, E.J. (1993): A post-Keynesian theory of growth, interest and money, in: Baranzini, M., Harcourt, G. (eds.), *The Dynamics of the Wealth of Nations*, London: Macmillan.
- Eatwell, J., Taylor, L. (2000): *Global Finance at Risk*, Cambridge/UK: Polity Press.
- Epstein, G.A. (1992): Political economy and comparative central banking, *Review of Radical Political Economics*, 24: 1-30.
- Epstein, G.A. (1994): A political economy model of comparative central banking, in: Dymski G., Pollin R. (eds.): *New Perspectives in Monetary Macroeconomics*, Ann Arbor: University of Michigan Press.
- 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*, Cheltenham: Edward Elgar.
- 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.
- Godley, W., Lavoie, M. (2006): *An Integrated Approach to Credit, Money, Income, Production and Wealth*, Basingstoke: Palgrave Macmillan.
- Graziani, A. (1989): *The theory of the monetary circuit*, Thames Paper in Political Economy, Spring.
- Graziani, A. (1994): Monetary circuits, in: Arestis P., Sawyer M. (eds), *The Elgar Companion to Radical Political Economy*, Aldershot: Edward Elgar.
- Hein, E. (2005): *Finanzstruktur und Wirtschaftswachstum - theoretische und empirische Aspekte*, IMK Studies, 1/2005, Duesseldorf: IMK at Hans Boeckler Foundation.

- Hein, E. (2006): Interest, debt and capital accumulation - a Kaleckian approach, *International Review of Applied Economics*, 20: 337-352.
- Hein, E. (2007a): Interest rate, debt, distribution and capital accumulation in a post-Kaleckian model, *Metroeconomica*, 57: 310-339.
- Hein, E. (2007b): Money, Distribution Conflict and Capital Accumulation. Contributions to 'Monetary Analysis', Basingstoke: Palgrave Macmillan, forthcoming.
- Kaldor, N. (1970): The new monetarism, *Lloyds Bank Review*, 97: 1-17.
- Kaldor, N. (1982): *The Scourge of Monetarism*, Oxford: Oxford University Press.
- Kaldor, N. (1985): How Monetarism failed, *Challenge*, 28 (2): 4-13.
- Kalecki, M. (1937): The principle of increasing risk, *Economica*, 4: 440-447.
- Kalecki, M. (1954): *Theory of Economic Dynamics*, London: George Allen and Unwin.
- Lavoie, M. (1984): The endogenous flow of credit and the post Keynesian theory of money, *Journal of Economic Issues*, 18: 771-797.
- Lavoie, M. (1992): *Foundations of Post Keynesian Economic Analysis*, Aldershot: Edward Elgar.
- Lavoie, M. (1993): A post-classical view of money, interest, growth and distribution, in: Mongiovi, G., Rühl, C. (eds), *Macroeconomic Theory: Diversity and Convergence*, Cambridge: Cambridge University Press.
- Lavoie, M. (1995): Interest rates in post-Keynesian models of growth and distribution, *Metroeconomica*, 46: 146-177.
- Lavoie, M. (1996): Horizontalism, structuralism, liquidity preference and the principle of increasing risk, *Scottish Journal of Political Economy*, 43: 275-300.
- Lavoie, M. (2005): Cadrisme with a Kaleckian model of growth and distribution, RONINSON Working Paper No. 06-05, University of Ottawa.

- 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: 277-311.
- Lavoie, M., Rodriguez, G., Seccareccia M. (2004): Transformational growth, interest rates, and the golden rule, in: Argyrous G., Forstater M., Mongiovi G. (eds.), *Growth, Distribution, and Effective Demand*, Armonk, New York: M.E. Sharpe.
- Lazonick, W., O'Sullivan, M. (2000): Maximizing shareholder value: a new ideology for corporate governance, *Economy and Society*, 29 (1): 13-35.
- Leon-Ledesma, M.A., Thirlwall, A.P. (2002): The endogeneity of the natural rate of growth, *Cambridge Journal of Economics*, 26: 441-459.
- Levine, R. (2003): More on finance and growth: more finance, more growth?; *Federal Reserve Bank of St. Louis Review*, 85 (4): 31-46.
- Levine, R. (2005): Finance and growth: theory and evidence, in: Aghion, P., Durlauf, S. (eds.), *Handbook of Economic Growth*, Elsevier.
- Lima, G.T., Meirelles, A.J.A. (2006): Debt, financial fragility, and economic growth: a Post Keynesian macromodel, *Journal of Post Keynesian Economics*, 29: 93-115.
- Moore, B.J. (1988): *Horizontalists and Verticalists: The Macroeconomics of Credit Money* Cambridge: Cambridge University Press.
- Moore, B.J. (1989): The endogeneity of credit money, *Review of Political Economy*, 1: 65-93.
- 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*, Basingstoke: Palgrave Macmillan.

- 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): 26-39.
- Rowthorn, R.E. (1999): Unemployment, wage bargaining and capital-labour substitution, *Cambridge Journal of Economics*, 23: 413-425.
- Sawyer, M. (2002): The NAIRU, aggregate demand and investment, *Metroeconomica*, 53: 66-94.
- Seccareccia, M. (1996): Post Keynesian fundism and monetary circulation, in: Deleplace, G., Nell, E. (eds), *Money in Motion*, London: Macmillan.
- 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*, Cheltenham: Edward Elgar.
- Smithin, J. (2003a): *Controversies in Monetary Economics*, revised edition (Cheltenham: Edward Elgar).
- Smithin, J. (2003b): 'Interest rates, profits and economic growth', in: Nell, E., Forstater, M. (eds), *Reinventing Functional Finance. Transformational Growth and Full Employment* (Cheltenham: Edward Elgar).
- 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.
- Taylor, L. (1985): A stagnationist model of economic growth, *Cambridge Journal of Economics*, 9: 383-403.

Taylor, L. (2004): *Reconstructing Macroeconomics. Structuralists Proposals and Critiques of the Mainstream*, Cambridge, Mass., London: Harvard University Press.

Van Treeck, T. (2007): *Reconsidering the investment-profit nexus in finance-led economies: an ARDL-based approach*, IMK Working Paper, 1/2007, Duesseldorf: Macroeconomic Policy Institute (IMK) in the Hans Boeckler Foundation.

Zingales, L. (2003): *Commentary on Levine*, *Federal Reserve Bank of St. Louis Review*, 85 (4):47-5.

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.
