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Working Paper

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Shareholder value orientation, distribution and growth – short- and medium-run effects in a Kaleckian model[*]

Eckhard Hein[#]

Abstract — *We discuss the effects of rising shareholder power on distribution and capital accumulation in a Kaleckian model. Increasing shareholder power is associated with decreasing managements' animal spirits, on the one hand, and increasing dividends distributed to shareholders, on the other hand. In the short run, increasing shareholder power may either have positive ('finance-led'), negative ('normal') or intermediate ('profits without investment') effects on capacity utilisation, profits and capital accumulation. In the medium run, the positive ('finance-led') effects may be maintained in a stable environment under very special conditions, whereas the negative ('normal') and the intermediate ('profits without investment') effects turn into cumulative disequilibrium processes with falling rates of capacity utilisation, profits and capital accumulation and rising debt- and rentiers' equity-capital-ratios.*

Keywords: Shareholder value orientation, distribution, growth, Kaleckian models

JEL-Classification: E12, E21, E22, E25, E44

1. Introduction

The recent decades have seen major changes in the financial sectors of developed and developing countries.[1] Generally, we have observed 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 new communication technologies. The overall importance of financial factors for real investment and growth of non-financial business has increased. This has been accompanied by 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 vis-à-vis management and labourers (Lazonick/O'Sullivan 2000).

Whereas nowadays there seems to exist a broad consensus among macroeconomists of different schools of thought saying that the development of the financial sector of an economy is crucial for 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 on distribution and growth are viewed differently.

Modern mainstream models, based on a synthesis of new 'endogenous' growth theory and new information economics, generally hold – albeit with different emphasis with respect to the relative importance of banks and financial markets – that the degree of financial

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[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.

intermediation should be positively associated with long-run growth.[2] However, these models are rather limited when it comes to taking into account the recent 'financialisation' processes as sketched above because they have neither a role to play for effective demand in the long run nor for distribution conflict between different social groups or classes.

Post-Keynesian demand driven distribution and growth models, based on the notion of distribution conflict between different groups, have been more sceptical with respect to the real effects of increasing financial intermediation, and rising shareholder power and shareholder value orientation of non-financial business inherent in these developments.[3] Different aspects of the 'financialisation' processes have been stressed in these models:

First, the effects of financialisation on firms' investment behaviour have been discussed. 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' (Lazonick/O'Sullivan 2000). In particular, Crotty (1990) has argued that there is an 'owner-manager conflict' at the firm level, with managers being in favour of long-run growth of the firm, whereas shareholders rather look at the short-run development of stock values. Similarly, Stockhammer (2004, 2005-6) holds that firms typically face a 'growth-profit trade-off', with managements usually advocating growth (accumulation) and shareholders (short-

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

[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: 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 endogenously by a developed banking sector on demand by creditworthy borrowers. See the contributions by, among others, Dutt (1989, 1992, 1995), Dutt/Amadeo (1993), Epstein (1992, 1994), Godley/Lavoie (2007), Hein (2006, 2007, 2008), Lavoie (1992: 347-371, 1993, 1995), Lavoie/Godley (2001-2), Lavoie/Rodriguez/Seccareccia, (2004), Lima/Meirelles (2006, 2007), Smithin (2003a, 2003b), and Taylor (1985, 2004: 272-278).

term) profit maximisation.[4] 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 associated with deregulation of the financial sector 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. Bhaduri/Laski/Riese (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' and increasing consumption is hence associated with increasing indebtedness of private households. Therefore, financial deregulation may improve the perspectives of maintaining a wealth-based credit boom over a considerable period of time. However, it may well be 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 (Bhaduri/Laski/Riese 2006). Or, as 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.

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[4] Stockhammer (2004) also presents econometric evidence in favour of the hypothesis that financialisation caused a slowdown in accumulation for the US, France, and maybe also the UK.

Third, the effect of financialisation on different forms of income redistribution has recently been highlighted. 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 (Boyer 2000).[5] On the other hand, a further implication of shareholder value orientation appears to be an increasing gap between manager salaries and blue collar wages. Palley (2006) and Lavoie (2006) have studied the phenomenon of 'cadrisme' (Lavoie 2006) within the framework of Post-Keynesian models of growth and distribution and have derived different potential regimes for the effect of increasing manager salaries vis-à-vis blue collar wages.

Based on the contradictory effects of 'financialisation' on investment and consumption, some authors have considered the possibility of a 'finance-led growth regime' (Boyer 2000), in which shareholder value orientation has an overall positive impact on growth. The condition for this is a very high propensity to consume out of rentiers' income and/or a very strong wealth effect on consumption, which in turn also 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). Van Treeck (2008b), applying Lavoie's (1995) 'Minsky-Steindl-model' and a monetary extension of the Bhaduri/Marglin (1990) model by Hein (2007), and distinguishing dividend payments/income from interest payments/income in the investment and the saving function of the model, has derived an 'intermediate' case, already inherent in Hein's (2007) and Lavoie's (1995) models.[6] 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

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[5] For empirical results see Argitis/Pitelis (2001), Epstein/Power (2003), Dumenil/Levy (2004, 2005), Epstein/Jayadev (2005), and Power/Epstein/Abrena (2003).
[6] As in Lavoie (1995) and in Hein (2007), the model also has a 'normal' case with a negative effect of an increasing dividend (or interest) rate on the rates of capacity utilisation, profit and capital accumulation throughout, and a 'puzzling' case with a positive effect on each of these rates.

(2007) model), but with a falling rate of capital accumulation.[7] Given a specific parameter constellation, a regime of 'profits without investment' seems to be a viable accumulation constellation. Since van Treeck (2008b) has not integrated the effects of changes in dividend payments on the firms' mark-up and hence on distribution between capital and labour income, Hein/van Treeck (2007) have allowed for a dividend-elastic mark up in two different variants of a Kaleckian model of distribution, the stagnationist version, building on Hein (2006), and the extended Bhaduri/Marglin version, building on Hein (2007). They show that with a dividend-elastic mark-up the 'intermediate' case of 'profits without investment' is still possible, but less likely, in particular in the extended 'stagnationist' version of the Kaleckian model.

However, a major drawback of the Hein/van Treeck (2007) paper, as of many of the papers mentioned above, is that the effects of a change in the dividend rate on the debt- and the equity-capital ratios of the models is not considered explicitly. This means that those models are either very short-run in which those effects may be omitted. This, however, is hardly to square with the obtained conclusions with respect to medium- or even long-run viability (or non-viability) of a 'finance-led' or a 'profits without investment' regime. Or those models only deal with a very special case in which debt- and equity-capital-ratios are not affected by changes in dividend payments in the medium to long run. In the present paper we therefore attempt to move a step forward and we endogenise the debt- and the equity-capital-ratios in the medium run of the model in order to check the stability and viability of 'finance-led' and 'profits without investment' regimes. Our model has a medium-run horizon because we allow the debt and the equity-capital held by outside rentiers to vary relative to the capital stock, but

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[7] This 'intermediate' case of weak investment in the face of prospering profits seems to have been dominating the development in the US since the early 1980s, only interrupted by the new economy boom in the second half of the 1990s. In Germany, a similar development can be seen, interrupted by the unification boom of the early 1990s. See van Treeck/Hein/Dünhaupt (2007) and van Treeck (2008a) for a detailed analysis.

we assume that changes in the dividend rate (relative to the interest rate) do not affect households' portfolio choice between credit/bonds and shares. In our view, portfolio choice is dominated by long-run institutional and habitual factors, such as the pension system and the stock market culture. Therefore, although endogenously determined, the debt- and the rentiers' equity capital-ratios move in step in our model with the firms' equity-capital-ratio being the complementary variable.

The approach pursued here is different from other Post-Keynesian models taking into account stock-flow interactions of financial and real variables, as the ones by Skott (1988, 1989: 114-140), Skott/Ryoo (2007, 2008), Lavoie (1998), Lavoie/Godley (2001-2), Taylor (2004: 272-278), and van Treeck (2007). In these models, Tobin's q (or Kaldor's valuation ratio) has a prominent role to play, with positive effects, in particular, on investment but also on consumption, which then often dominate the overall results.[8] However, we doubt especially that an increasing Tobin's q triggered by increasing shareholder power and enforced changes in management's preferences should be associated with rising real investment.[9] These models also do not pay any attention to changes in distribution between capital and labour caused by changes in the financial regime and the related macroeconomic effects via consumption and investment.

The present paper is organised as follows. In the second section we present the basic model. The short-run effects of increasing shareholder power vis a vis firms' management and labour are analysed in the third section, assuming the mark-up in firms' pricing decisions, and hence the profit share, as well as the debt- and the equity capital ratios to be constant. In the fourth

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[8] On Tobin's q see Brainard/Tobin (1968) and Tobin (1969). For a discussion see Crotty (1990) and Tobin/Brainard (1990). On Kaldor's valuation ratio see Kaldor (1966) and the discussion in Lavoie (1998).
[9] Empirical studies have difficulties in finding a statistically significant and empirically relevant effect of Tobin's q on investment. See, for example, Chirinko (1993), Bhaskar/Glyn (1995), and Ndikumana (1999).

section discussing the medium-run effects of increasing shareholder power we allow for a dividend elastic mark-ups and profit share, and we endogenise the development of the debt- and the equity-capital ratios. In particular, we analyse the stability of the medium-run equilibrium. In the fifth section we discuss the stability and viability of a 'finance-led' and a 'profits without investment' regime. The sixth section concludes.

2. 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:

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

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

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

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

$$\lambda = \frac{B}{pK}, \tag{5}$$

$$\gamma = \frac{E^R}{pK}, \tag{6}$$

$$\phi = \frac{E^F}{pK}, \tag{7}$$

$$\Pi = \Pi^F + R^i + R^d, \tag{8}$$

$$R^i = iB, \tag{9}$$

$$R^d = dE^R, \tag{10}$$

$$\Pi^F = r^F E^F, \tag{11}$$

$$\sigma = \frac{S}{pK} = \frac{\Pi - R^i - R^d + s_R(R^i + R^d)}{pK} = r - (1 - s_R)(i\lambda + d\gamma), \qquad 0 < s_R \le 1, \tag{12}$$

$$g = \frac{I}{pK} = \alpha + \beta u + \rho(r - i\lambda - d\gamma), \qquad \alpha, \beta, \rho \ge 0, \qquad \rho < 1, \tag{13}$$

$$g = \sigma, \tag{14}$$

$$\frac{\partial \sigma}{\partial u} - \frac{\partial g}{\partial u} > 0 \quad \Rightarrow \quad (1 - \rho)\frac{h}{v} - \beta > 0. \tag{15}$$

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.[10] 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' households (E^R). Part of firms' liabilities is therefore held by 'outsiders' to the firm, i.e. rentiers' households, whereas another part is controlled by 'insiders', either by the management or by owner managers. Since in our present model we assume prices in goods and financial markets to be constant – capital gains are hence omitted from the analysis –, rentiers are interested in short-run maximum dividend and interest payments, whereas management favours long-term growth of the firm. λ, γ, ϕ are the debt-capital-ratio, the rentiers' equity-capital-ratio and the accumulated retained earnings-capital ratio, respectively (equations 5-7), the sum of which is of course: $\lambda + \gamma + \phi = 1$. We assume these ratios to be constant in the short run, but to be variable and hence endogenously determined in the medium run.

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,

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[10] 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 2008: 70-79).

1989).[11] Dividend payments are given by the dividend rate (d) and the stock of equity held by rentiers' households (equation 10). 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. Finally, firms' retained profits are given by the rate of profit on firms' accumulated retained earnings (r^F) and the stock of retained earnings. These are residual variables.[12]

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 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 sections, 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

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[11] 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 (2008).

[12] Dividing equation (8) by the nominal capital stock and taking into account equations (5) – (7), we obtain: $r = r^F \phi + d\gamma + i\lambda$. Since the rate of profit (r) is determined by the mark-up and by the goods market equilibrium, and the dividend rate and the interest rate are exogenous variables, the rate of profit on firms' accumulated retained earnings cannot be exogenous, too, but is an endogenous or residual variable.

market and weak bargaining power of labour unions. In the face of increasing shareholder power, we consider the mark-up to be dividend inelastic in the short run, but to become dividend-elastic in the medium run of our model because of weakened bargaining power of labourers associated with financialisation and a policy of 'downsize and distribute' (Lazonick/O'Sullivan 2000).

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 (12) 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.[13]

The accumulation rate (g), relating net investment (I) to the capital stock, in equation (13) is based on the 'stagnationist' Kaleckian distribution and growth models and 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 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

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[13] In our model, we consider only rentiers' consumption out of current income flows. With increasing stock prices, it can also 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 Bhaduri/Laski/Riese (2006) and Dutt (2006). However, this will be associated with increasing household debt which might feed back negatively on consumption. This aspect is not modelled here.

because firms' internal funds for investment finance are adversely affected. This also limits the access to external funds in imperfect capital markets, according to Kalecki's (1937) 'principle of increasing risk'. Because of shareholders' desire for profits – compared to managements' desire for growth of the firm – increasing shareholder power vis-à-vis management will increase the dividend rate and reduce available funds for real investment and growth of the firm. But increasing shareholder power will not only affect internal funds but also managements' preferences: Managements' 'animal spirits' reflected in the constant α in the investment function will decline and might even become negative. Therefore, even if the availability of internal funds were irrelevant for firms' investment decisions, increasing shareholder power would affect investment nonetheless in the negative through this channel.

We refrain from integrating a positive effect of the relationship between the dividend rate and the rate of interest or of Tobin's q or Kaldor's valuation ratio into our investment function, because in our model an increase in the dividend rate (relative to the interest rate) indicates rising shareholder power vis a vis management and can hence not be seen as a stimulus for real investment, we rather assume the opposite. In our model, the shares of internal and external investment finance matter for firms' real investment, but the source of external finance (issue of shares or debt) is of minor relevance for investment decisions. Our approach differs from other Post-Keynesian stock-flow consistent models in which Tobin's q or Kaldor's valuation ratio have a prominent role to play and have major effects on the overall results (Skott 1988, 1989: 114-140, Skott/Ryoo 2007, 2008, Lavoie 1998, Lavoie/Godley 2001-2, Taylor 2004: 272-278, and van Treeck 2007).

The goods market equilibrium is determined by the equality of saving and investment decisions (equation 14). The goods market stability condition requires that the saving rate

responds more elastically to changes in capacity utilisation than capital accumulation does (equations 15).

Our model generates the following goods market equilibrium values:

$$u^* = \frac{\alpha + (i\lambda + d\gamma)(1 - s_R - \rho)}{(1-\rho)\dfrac{h}{v} - \beta}, \tag{16}$$

$$r^* = \frac{\dfrac{h}{v}\left[\alpha + (i\lambda + d\gamma)(1 - s_R - \rho)\right]}{(1-\rho)\dfrac{h}{v} - \beta}, \tag{17}$$

$$g^* = \frac{\alpha\dfrac{h}{v} + (i\lambda + d\gamma)\left[\beta(1 - s_R) - \rho\dfrac{h}{v}s_R\right]}{(1-\rho)\dfrac{h}{v} - \beta}. \tag{18}$$

In what follows, the effects of increasing shareholder power on stable goods market equilibria only will be discussed. Increasing shareholder power will first affect managements' preferences and hence 'animal spirits' in the negative, and, secondly it will be associated with an increasing dividend rate. The interest rate will be considered to remain constant throughout the following analysis.

3. Short-run effects of increasing shareholder power

For the discussion of the short-run effects of increasing shareholder power we assume λ, γ, ϕ to be given and constant. For the medium run these ratios will be endogenised, their stabilities will be checked, and the effects of changes in the dividend rate on these ratios will be

examined. For the short run we will also assume that firms are unable to shift increasing dividend payments to prices. The mark-up and the profit share will therefore remain constant, too. This restriction will also be alleviated for the medium-run considerations, and the effects of redistribution between capital and labour on investment and saving will be taken into account.

An increase in shareholder value orientation of managements' investment decisions, and hence a decrease in animal spirits, as indicated by α in the investment function, has uniquely negative effects on the endogenous variables, because animal spirits display unambiguously positive relationships with the equilibrium rates of capacity utilisation, profit and capital accumulation:

$$\frac{\partial u}{\partial \alpha} = \frac{1}{(1-\rho)\frac{h}{v} - \beta} > 0, \tag{19}$$

$$\frac{\partial r}{\partial \alpha} = \frac{\frac{h}{v}}{(1-\rho)\frac{h}{v} - \beta} > 0, \tag{20}$$

$$\frac{\partial g}{\partial \alpha} = \frac{\frac{h}{v}}{(1-\rho)\frac{h}{v} - \beta} > 0. \tag{21}$$

An increase in the dividend rate, however, has ambiguous effects. It affects firms' investment through the availability of internal funds and the access to external financing, but it also has an influence on the income of rentiers households and hence on consumption. With the debt- and the rentiers' equity-capital ratios, as well as the mark-up and the profit share, being

constant in the short run, we obtain the following effect of a change in the dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation:

$$\frac{\partial u}{\partial d} = \frac{(1 - s_R - \rho)\gamma}{(1-\rho)\frac{h}{v} - \beta}, \tag{22}$$

$$\frac{\partial r}{\partial d} = \frac{\frac{h}{v}(1 - s_R - \rho)\gamma}{(1-\rho)\frac{h}{v} - \beta}, \tag{23}$$

$$\frac{\partial g}{\partial d} = \frac{\gamma\left[\beta(1 - s_R) - s_R\rho\frac{h}{v}\right]}{(1-\rho)\frac{h}{v} - \beta}. \tag{24}$$

The effects of a change in the dividend rate may be positive or negative, depending on the parameter values in the saving and the investment function of the model. From equations (22), (23) and (24) we obtain the following conditions for positive effects of a rising dividend rate on the equilibrium values of the system:

$$\frac{\partial u}{\partial d} > 0, \qquad \text{if}: \qquad 1 - s_R > \rho, \tag{22'}$$

$$\frac{\partial r}{\partial d} > 0, \qquad \text{if}: \qquad 1 - s_R > \rho, \tag{23'}$$

$$\frac{\partial g}{\partial d} > 0, \qquad \text{if}: \qquad 1 - s_R > \rho\frac{\frac{h}{v}}{\beta + \rho\frac{h}{v}}. \tag{24'}$$

Assuming the stability condition for the goods market equilibrium (equation 15) to hold

implies for equation (24'): $\dfrac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} > 1.$[14] Therefore, we get the following short-run cases in

Table 1.

Table 1: Short-run cases for a change in the dividend rate: constant interest rate, a dividend-inelastic profit share, and constant debt- and rentiers' equity-capital-ratios			
	The 'normal' case	The 'intermediate' case	The 'puzzling' case
	$1 - s_R < \rho$	$\rho < 1 - s_R < \rho \dfrac{\frac{h}{v}}{\beta + \rho \frac{h}{v}}$	$\rho \dfrac{\frac{h}{v}}{\beta + \rho \frac{h}{v}} < 1 - s_R$
$\dfrac{\partial u}{\partial d}$	$-$	$+$	$+$
$\dfrac{\partial r}{\partial d}$	$-$	$+$	$+$
$\dfrac{\partial g}{\partial d}$	$-$	$-$	$+$

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: $1 - s_R < \rho$. Therefore, this case is the more likely the higher the rentiers' propensity to save and the higher the responsiveness of firms' real investment with respect to internal funds. With this parameter constellation the increase in consumption demand associated with the redistribution of income from firms to shareholder households, triggered by a rising dividend rate, is insufficient to compensate for the negative effects on firms' investment. In the 'normal case', the effect of an increasing dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation amplifies the negative effects of rising shareholder power via managments' animal spirits.

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

In the 'puzzling' case, we have an opposite parameter constellation: $\rho\dfrac{\dfrac{h}{v}}{\beta+\rho\dfrac{h}{v}}<1-s_R$. A low

propensity to save out of rentiers' income, a low responsiveness of investment with respect to internal funds and a high elasticity 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. In the 'puzzling case', the effect of an increasing dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation may compensate or even over-compensate the negative effects of rising shareholder power via managments' animal spirits, and an overall positive effect of increasing shareholder power may be possible. This, however, requires that increasing shareholder power is associated with a strong increase in the dividend rate but with a low decline in animal spirits. If this conditions holds, we will obtain a 'finance-led' accumulation regime.

In the model, an 'intermediate' case may arise if: $\rho<1-s_R<\rho\dfrac{\dfrac{h}{v}}{\beta+\rho\dfrac{h}{v}}$. 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, is a low rentiers' propensity to save, which boosts 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. In the intermediate case, the negative effects of increasing shareholder power

via managements's preferences ('animal spirits') may be compensated by the effects of a rising dividend rate with respect to capacity utilisation and the profit rate, but the negative effect on capital accumulation is reinforced. For the former, it is again required that increasing shareholder power is associated with a strong increase in the dividend rate but with a low reduction of animal spirits. If these conditions hold, we will obtain a 'profits without investment' regime.

4. Medium-run effects of an increasing dividend rate

In the medium run of our model we have to take into account that firms may be able to shift higher dividend payments to prices and that the mark-up, and hence the gross profit share (including dividend and interest payments), may increase. Therefore, with a dividend-elastic mark-up: $\frac{\partial h}{\partial d} \geq 0$, and the labour income share may decrease in the face of a rising dividend rate. Retained profits of firms will then 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. In particular the latter seems to be closely related to increasing shareholder value orientation and decreasing 'animal spirits' of management with its negative effects on real investment, the expansion of the firm and hence employment ('downsize and distribute' instead of 'retain and invest', according to Lazonick/O'Sullivan (2000)).

In the medium run, a change in the dividend rate affecting rentiers' income will also affect rentiers' saving and hence the stocks of debt and equity held by rentiers, as well as the rentiers' equity- and the debt-capital-ratio. Since $\lambda + \gamma + \phi = 1$, it is sufficient to analyse the

dynamics of λ and γ. In order to do so, we have to make an assumption about rentiers' portfolio decisions with respect to the allocation of saving to credit/bonds and equity granted to firms. We assume for the medium run that saving is split in fixed proportions (z, 1-z), so that we obtain for the changes in the respective stocks:

$$\Delta B = zS_R = zs_R \left(iB + dE^R \right), \qquad 0 \le z \le 1, \qquad (25)$$

$$\Delta E^R = (1-z)S_R = (1-z)s_R \left(iB + dE^R \right), \qquad 0 \le z \le 1. \qquad (26)$$

Treating the marginal relationship between debt and rentiers' equity as a constant also implies that the relationship between the stock of debt and the stock of rentiers' equity – and hence also between the debt-capital- and the rentiers' equity-capital-ratio – is a constant:

$$\frac{\Delta B}{\Delta E^R} = \frac{B}{E^R} = \frac{\lambda}{\gamma} = \frac{z}{1-z} = \delta. \qquad (27)$$

Assuming the medium-run portfolio choice of households to be constant is justified by the observation that the portfolio choice seems to be dominated by institutional and historical factors which only change slowly in the course of time despite short- and medium-run variations in the dividend rate (relative to the interest rate). Medium-run portfolio choice seems to be dominated by institutional characteristics of the economy related to the pension system (pay as you go vs. capital based), and by historically given national stock market culture as well as sentiments towards risk.[15] Be that as it may, changes in households' portfolio decisions will only affect firms' investment decisions in our model if firms' internal

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

means of finance are affected.[16] But there is no effect via Tobin's q or Kaldor's valuation ratio in our investment function, different from the other stock-flow consistent approaches referred to above.

For the growth of debt and equity held by rentiers we get from equations (25), (26), and (27):

$$\hat{B} = \frac{\Delta B}{B} = \hat{E}^R = \frac{\Delta E^R}{E^R} = z s_R \left(i + \frac{d}{\delta} \right). \tag{28}$$

If we assume that prices remain constant, which means that mark-ups and distribution may change but not the price level, the growth rates of the debt-capital- and the rentiers' equity-capital-ratios depend on the growth rates of debt and rentiers' equity, respectively, and on the growth rate of the real capital stock. From equations (5) and (6) we get:

$$\hat{\lambda} = \hat{B} - \hat{K} = \hat{B} - g, \tag{29}$$

$$\hat{\gamma} = \hat{E}^R - \hat{K} = \hat{E}^R - g \tag{30}$$

In equilibrium the endogenously determined values of λ and γ have to be constant, hence $\hat{\lambda} = \hat{\gamma} = 0$ has to hold. Introducing this condition into equations (29) and (30), and making use of equations (27), (28), and (18) yields the following medium-run equilibrium values:

$$\lambda^* = \frac{z s_R \left(i + \frac{d}{\delta} \right) \left[(1-\rho)\frac{h}{v} - \beta \right] - \alpha \frac{h}{v} - d\gamma \left[\beta(1 - s_R) - \rho s_R \frac{h}{v} \right]}{i \left[\beta(1 - s_R) - \rho s_R \frac{h}{v} \right]}, \tag{31}$$

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[16] Firms internal means of finance will be affected by rentiers' households' portfolio choice if the dividend rate differs from the interest rate, which generally should be the case.

$$\gamma* = \frac{zs_R\left(i+\dfrac{d}{\delta}\right)\left[(1-\rho)\dfrac{h}{v}-\beta\right]-\alpha\dfrac{h}{v}-i\lambda\left[\beta(1-s_R)-\rho s_R\dfrac{h}{v}\right]}{d\left[\beta(1-s_R)-\rho s_R\dfrac{h}{v}\right]}.$$ (32)

These medium-run equilibrium values will be stable if $\dfrac{\partial\hat{\lambda}}{\partial\lambda}<0$ and $\dfrac{\partial\hat{\gamma}}{\partial\gamma}<0$, respectively.

Starting from equations (29) and (30), making use of equations (27) and (28), respectively, and equation (18) yields:

$$\frac{\partial\hat{\lambda}}{\partial\lambda}=\frac{-i\left[\beta(1-s_R)-\rho s_R\dfrac{h}{v}\right]}{(1-\rho)\dfrac{h}{v}-\beta},$$ (33)

$$\frac{\partial\hat{\gamma}}{\partial\gamma}=\frac{-d\left[\beta(1-s_R)-\rho s_R\dfrac{h}{v}\right]}{(1-\rho)\dfrac{h}{v}-\beta}.$$ (34)

Taking into account that we assume stable goods market equilibria, it follows for the stability conditions of the debt-capital- and the rentiers' equity-capital-ratios:

$$\frac{\partial\hat{\lambda}}{\partial\lambda}<0,\frac{\partial\hat{\gamma}}{\partial\gamma}<0 \text{ if}: \quad \beta(1-s_R)-\rho s_R\frac{h}{v}>0$$

$$\Leftrightarrow 1-s_R>\rho\frac{\dfrac{h}{v}}{\beta+\rho\dfrac{h}{v}}$$ (33', 34')

Stability of γ and λ requires a low rentiers' propensity to save, a low responsiveness of firms' investment with respect to internal funds and a high elasticity with respect to capacity

utilisation. This is tantamount to a positive partial relationship between the rate of capital accumulation and the debt-capital-ratio and the rentiers' equity-capital-ratio, respectively. From equation (18) we obtain:

$$\frac{\partial g}{\partial \lambda} = \frac{i\left[\beta(1-s_R)-s_R\rho\frac{h}{v}\right]}{(1-\rho)\frac{h}{v}-\beta}, \tag{35}$$

$$\frac{\partial g}{\partial \gamma} = \frac{d\left[\beta(1-s_R)-s_R\rho\frac{h}{v}\right]}{(1-\rho)\frac{h}{v}-\beta}, \tag{36}$$

$$\frac{\partial g}{\partial \lambda} > 0, \frac{\partial g}{\partial \gamma} > 0 \qquad \text{if}: \qquad \beta(1-s_R)-\rho s_R \frac{h}{v} > 0$$

$$\Leftrightarrow 1-s_R > \rho\frac{\dfrac{h}{v}}{\beta+\rho\dfrac{h}{v}} \tag{35', 36'}$$

Note also that medium-run stability of the debt- and the rentiers' equity-capital-ratio is associated with a short-run 'puzzling' effect of a change in the dividend rate on the equilibrium rate of capital accumulation, as can be seen in equation (24').

We are now in a position to discuss the medium-run effects of an increasing dividend rate on the equilibrium position of our system. We start with the effects of a rising dividend rate on the medium-run equilibrium rates of the debt- and the rentiers' equity-capital-ratios. From equations (31) and (32), and taking into account that $\frac{z}{1-z} = \delta$, we obtain the following effects of a change in the dividend rate on these ratios:

$$\frac{\partial \lambda}{\partial d} = \frac{\dfrac{zs_R}{\delta}\left[(1-\rho)\dfrac{h}{v}-\beta\right] - \gamma\left[\beta(1-s_R)-\rho s_R \dfrac{h}{v}\right] + \dfrac{\partial h}{\partial d}\dfrac{1}{v}\left\{s_R\left[z\left(i+\dfrac{d}{\delta}\right)(1-\rho)+\rho(d\gamma+i\lambda)\right]-\alpha\right\}}{i\left[\beta(1-s_R)-\rho s_R \dfrac{h}{v}\right]},$$

(37)

$$\frac{\partial \gamma}{\partial d} = \frac{\dfrac{zs_R}{\delta}\left[(1-\rho)\dfrac{h}{v}-\beta\right] - \gamma\left[\beta(1-s_R)-\rho s_R \dfrac{h}{v}\right] + \dfrac{\partial h}{\partial d}\dfrac{1}{v}\left\{s_R\left[z\left(i+\dfrac{d}{\delta}\right)(1-\rho)+\rho(d\gamma+i\lambda)\right]-\alpha\right\}}{d\left[\beta(1-s_R)-\rho s_R \dfrac{h}{v}\right]}.$$

(38)

For the evaluation of the effects of changing dividend rate we have to distinguish the medium-run stable from the medium-run unstable case.

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

$$\frac{\partial \lambda}{\partial d} > 0, \frac{\partial \gamma}{\partial d} > 0$$

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

(37', 38')

$$\text{and}: \quad \frac{\dfrac{zs_R}{\delta}\left[(1-\rho)\dfrac{h}{v}-\beta\right] + \dfrac{\partial h}{\partial d}\dfrac{1}{v}\left\{s_R\left[z\left(i+\dfrac{d}{\delta}\right)(1-\rho)+\rho i\lambda\right]-\alpha\right\}}{\left[\beta(1-s_R)-\rho s_R \dfrac{h}{v}\right]-\dfrac{\partial h}{\partial d}\dfrac{1}{v}s_R\rho d} > \gamma.$$

In the medium-run stable case, the effect of a change in the dividend rate on the debt- and rentiers' equity-capital-ratio depends on the initial value of the rentiers' equity-capital-ratio (and also on the initial value of the debt-capital-ratio because we have assumed $\dfrac{\lambda}{\gamma}=\delta$ to be

constant in the medium run). If γ is below the value defined in equation (37', 38'), an increase in the dividend rate will raise λ and γ, if γ is above this value λ and γ will fall, and if γ is exactly equal to this value there will be no effect of a change in the dividend rate on λ and γ. Note that a high elasticity of the mark-up and the profit share with respect to the dividend rate will increase the critical values in (37') and (38'), whereas lower 'animal spirits' and hence increasing shareholder orientation of managements, will decrease these values.

In the medium-run unstable case, in which $\beta(1-s_R)-\rho s_R \dfrac{h}{v}<0$, the inspection of equations (37) and (38) unambiguously yields:

$$\frac{\partial \lambda}{\partial d}<0, \frac{\partial \gamma}{\partial d}<0 \qquad \text{if}: \qquad \beta(1-s_R)-\rho s_R \frac{h}{v}<0. \tag{37'', 38''}$$

A change in the dividend rate will therefore have an adverse effect on the equilibrium debt- and the rentiers' equity-capital-ratios.

The total effects of change in the dividend rate on the equilibrium rates of capacity utilisation, profit and capital accumulation can be derived from equations (16) - (18), taking now into account the potential medium-run effects on h, γ and λ:

$$\frac{\partial u}{\partial d}=\frac{\left(\gamma+d\dfrac{\partial \gamma}{\partial d}+i\dfrac{\partial \lambda}{\partial d}\right)(1-s_R-\rho)-\dfrac{\partial h}{\partial d}\dfrac{1}{v}(1-\rho)u}{(1-\rho)\dfrac{h}{v}-\beta}, \tag{39}$$

$$\frac{\partial r}{\partial d}=\frac{\left(\gamma+d\dfrac{\partial \gamma}{\partial d}+i\dfrac{\partial \lambda}{\partial d}\right)\dfrac{h}{v}(1-s_R-\rho)-\dfrac{\partial h}{\partial d}\dfrac{1}{v}\beta u}{(1-\rho)\dfrac{h}{v}-\beta}, \tag{40}$$

$$\frac{\partial g}{\partial d} = \frac{\left(\gamma + d\frac{\partial\gamma}{\partial d} + i\frac{\partial\lambda}{\partial d}\right)\left[\beta(1-s_R) - s_R\rho\frac{h}{v}\right] - \frac{\partial h}{\partial d}\frac{u}{v}\beta}{(1-\rho)\frac{h}{v} - \beta}.$$ (41)

From this, we obtain the following conditions for a medium-run expansionary effect of an increasing dividend rate:

$$\frac{\partial u}{\partial d} > 0, \qquad \text{if:} \qquad 1 - s_R > \rho + \frac{\frac{\partial h}{\partial d}\frac{u}{v}(1-\rho)}{\gamma + d\frac{\partial\gamma}{\partial d} + i\frac{\partial\lambda}{\partial d}},$$ (39')

$$\frac{\partial r}{\partial d} > 0, \qquad \text{if:} \qquad 1 - s_R > \rho + \frac{\frac{\partial h}{\partial d}\frac{\beta u}{h}}{\gamma + d\frac{\partial\gamma}{\partial d} + i\frac{\partial\lambda}{\partial d}},$$ (40')

$$\frac{\partial g}{\partial d} > 0, \qquad \text{if:} \qquad 1 - s_R > \rho\frac{\frac{h}{v}}{\beta + \rho\frac{h}{v}} + \frac{\frac{\partial h}{\partial d}\frac{\beta u}{v}}{\left(\beta + \rho\frac{h}{v}\right)\left(\gamma + d\frac{\partial\gamma}{\partial d} + i\frac{\partial\lambda}{\partial d}\right)}.$$ (41')

A change in the mark-up and hence in the gross profit share associated with a persistent increase in the dividend rate (and a decline in managements' animal spirits) has a partially negative effect on each of the 'real' endogenous variables in the medium run. The model is hence unambiguously wage-led. Therefore, it seems that the 'puzzling' and the 'intermediate' case become less likely if this distribution effect is taken into account.

For the (partial) effects of the changes in the debt- and the rentiers' equity-capital ratios on the medium-run real equilibrium we obtain a differentiated picture: If the medium-run equilibrium is stable, and a rising dividend rate increases the debt- and the rentiers' equity-

capital ratios, this will accelerate the positive effect on the real equilibrium given in the short run in this case. If the effect of the dividend rate on γ and λ is zero there will be no further effect on u, g an r, and if γ and λ are negatively affected by a rise in the dividend rate, this will dampen the short-run effects. In the medium-run unstable case, the effect of a rising dividend rate on γ and λ will be unambiguously negative. This will dampen or reverse the short-run negative effects on the accumulation rate. The short-run effects of a rising dividend rate on capacity utilisation and the profit rate which may be negative or positive, will be dampened or even reversed, too.

From these considerations it seems that the medium-run effects of a changing dividend rate on the rates of capacity utilisation, profit and capital accumulation are rather opaque. However, seen from another angle, the picture becomes much clearer. From equations (27), (28), (29) and (30) we obtain for the medium-run equilibrium, in which the condition $\hat{\lambda} = \hat{\gamma} = 0$ has to hold:

$$g = \hat{B} = \hat{E}^R = zs_R\left(i + \frac{d}{\delta}\right). \tag{42}$$

From this, the effect of a change in the dividend rate on the equilibrium rate of capital accumulation has to be positive in the medium run, in the stable and in the unstable case:

$$\frac{\partial g}{\partial d} = \frac{zs_R}{\delta} > 0. \tag{43}$$

Therefore, also equation (41) has to be positive. And if there is an overall positive effect of the dividend rate on the accumulation rate in the medium run, also the effect on the profit rate

and on the rate of capacity utilisation has to be positive, if only stable goods market equilibria

are considered. For stable goods market equilibria it has to hold $\dfrac{\dfrac{h}{v}}{\beta + \rho\dfrac{h}{v}} > 1$ or $\dfrac{1}{\dfrac{v}{h}\beta + \rho} > 1$,

and therefore if (41') is positive, (40') has to be positive, too.

5. Short- and medium-run effects of increasing shareholder power

We can now trace the effects of increasing shareholder power through our model and distinguish between short- und medium-run effects and between a stable medium-run equilibrium and an unstable one (Table 2).

Starting with the medium-run stable case, we obtain that increasing shareholder power will be associated with decreasing managements' animal spirits which will have a negative effect on the equilibrium rates of capacity utilisation, profit and capital accumulation, in the short and in the medium run. These negative effects may be compensated or even over-compensated by the positive effect of an increasing dividend rate on the real equilibrium, both in the short and in the medium run, provided that increasing shareholder power is associated with a strong increase in the dividend rate but with only a weak decline in animal spirits. A medium-run increase in the mark-up and the profit share, although having a partially negative effect on the goods market equilibrium will not prevent this result. The debt- and the rentiers' equity-capital-ratio will rise, fall or even remain constant, depending on the initial values of these ratios, which implies that the equilibrium values of these ratios will converge towards some definite values and then remain inelastic with respect to further changes in the dividend rate.

Table 2: Effects of increasing shareholder power in the short and the medium run			
		$\beta(1-s_R)-\rho s_R \dfrac{h}{v}$	
		+	−
Short run			
Dividend rate, profit share, debt- and the rentiers' equity-capital-ratio	$\dfrac{\partial h}{\partial d}, \dfrac{\partial \lambda}{\partial d}, \dfrac{\partial \gamma}{\partial d}$ (short run)	0	0
Animal spirits, goods market equilibrium	$\dfrac{\partial u}{\partial \alpha}, \dfrac{\partial r}{\partial \alpha}, \dfrac{\partial g}{\partial \alpha}$ (19), (20), (21)	+	+
Dividend rate, equilibrium capacity utilisation and profit rate	$\dfrac{\partial u}{\partial d}, \dfrac{\partial r}{\partial d}$ (22), (23)	+	+/−
Dividend rate, equilibrium capital accumulation	$\dfrac{\partial g}{\partial d}$ (24)	+	−
Medium run			
Stability of debt- and rentiers' equity-capital-ratio	$\dfrac{\partial \hat{\lambda}}{\partial \lambda}, \dfrac{\partial \hat{\gamma}}{\partial \gamma}$ (33), (34)	− (stable)	+ (unstable)
Animal spirits, goods market equilibrium	$\dfrac{\partial u}{\partial \alpha}, \dfrac{\partial r}{\partial \alpha}, \dfrac{\partial g}{\partial \alpha}$ (19), (20), (21)	+	+
Dividend rate, profit share	$\dfrac{\partial h}{\partial d}$ (medium run)	+	+
Dividend rate, and equilibrium debt- and rentiers' equity-capital-ratio	$\dfrac{\partial \lambda}{\partial d}, \dfrac{\partial \gamma}{\partial d}$ (37), (38)	+/0/−	−
Dividend rate, equilibrium capacity utilisation and profit rate	$\dfrac{\partial u}{\partial d}, \dfrac{\partial r}{\partial d}$ (39), (40)	+	+
Dividend rate, equilibrium capital accumulation	$\dfrac{\partial g}{\partial d}$ (41), (43)	+	+

From this it follows that a 'finance-led' accumulation regime is a viable regime, not only in the short but also in the medium run, provided that the positive effect of increasing shareholder power via the dividend rate is strong enough to over-compensate the negative effect via managements' preferences. If, however, the negative effect of increasing shareholder power on managements' preferences exceeds the positive effect via the increasing dividend rate, it will be impossible to reach the medium-run equilibrium, because medium-run stability requires an overall positive effect of rising shareholder power on capital accumulation, and the system will turn unstable with the consequences discussed below. Therefore, medium-run viability of a finance-led regime characterised by high or rising rates of capacity utilisation, profit and capital accumulation requires, in particular, a low rentiers' propensity to save, a low elasticity of investment with respect to internal funds and a high responsiveness with respect to capacity utilisation. In addition, also weak effects of rising shareholder power on managements' preferences are required.

In the medium-run unstable case, the short-run negative effects of rising shareholder power on the real equilibrium via managements' preferences are reinforced by the effects of an increasing dividend rate with respect to capital accumulation. The effects of the increasing dividend rate on the rates of capacity and profit may be negative, which will then give the 'normal' case, or they may be positive and even over-compensate the negative effect of increasing shareholder power on managements' animal spirits, and the 'intermediate' case or the 'profits without investment' regime is obtained. The negative effect of decreasing animal spirits associated with rising shareholder power is maintained in the medium run of the unstable case, too. In the medium run, with an increasing profit share, the increase in the dividend rate causes the equilibrium debt- and rentiers' equity-capital-ratios to fall and the

equilibrium rates of capacity utilisation, profit and capital accumulation to rise. Therefore, considering equilibrium situations, the short-run 'normal' and 'intermediate' cases seem to vanish in the medium run. However, these medium-run equilibria will not be reached if the system is in disequilibrium.

If we start in medium-run equilibrium and consider an increase in shareholder power and the dividend rate, this will have the potential short-run effects outlined above, and it will decrease the medium-run equilibrium debt- and rentiers' equity-capital ratios and increase the medium-run rates of capacity utilisation, profit and capital accumulation. Actual debt- and rentiers' equity-capital ratios will therefore exceed their new medium-run equilibrium values, and actual rates of capital accumulation and also of capacity utilisation and profit will fall short of their new medium-run equilibrium values. Therefore, a disequilibrium process with rising debt- and rentiers' equity-capital-ratios – and falling firms' equity-capital-ratios – and decreasing rates of capital accumulation, profit and capacity utilisation will be triggered by an increasing dividend rate. Deteriorating managements' animal spirits will reinforce this cumulative disequilibrium process. In this process, the economy will also be characterised by the macroeconomic 'paradox of debt', i.e. rising debt-capital-ratios in the face of falling rates of capital accumulation.

Therefore, if rising shareholder power, and hence decreasing 'animal spirits' and an increasing dividend rate, is associated with an 'intermediate' case of rising rates of capacity utilisation and profits but a falling rate of capital accumulation in the short run, this will inevitably turn into a 'normal' disequilibrium process of falling rates of capital accumulation, profit and capacity utilisation, accompanied by a rising share of profit, by rising debt- and rentiers' equity-capital-ratios and by falling firms' equity-capital ratios. The 'intermediate' or

'profits without investment' case does therefore not only require very special conditions in the short run, it is also a highly unstable and fragile regime when it comes to medium-run considerations.

6. Conclusions

In this paper we have discussed the effects of rising shareholder power on distribution and capital accumulation in a Kaleckian model. Increasing shareholder power has been associated with the subordination of managements' desire for growth under shareholders' preference for short-term profits and hence with decreasing managements' animal spirits, on the one hand, and increasing dividends distributed to shareholders, on the other hand. We have examined the short- and medium-run effects of these developments, assuming for the short run the firms' mark-up and hence the profit share to be inelastic with respect to the dividend rate and the debt- and the rentiers' equity-capital-ratio to be invariant, too. In the medium run the mark-up, and hence the profit share, has been assumed to be dividend elastic and the debt- and the rentiers' equity-capital-ratio to be variable. However, we have supposed that households' portfolio decisions remain unaffected by changes in the dividend rate (relative to the interest rate). This remains to be introduced into this model in order to consider the long-run properties of the system. However, as long as households' portfolio decisions have no effect on firms' real investment decision, as supposed in our model, the long-run properties of the model will presumably not deviate from our medium-run results.

In the short run, increasing shareholder power may have a positive ('puzzling') effect on the equilibrium rates of capacity utilisation, profit and capital accumulation, if the negative

effects on managements' animal spirits are over-compensated by the positive effects of a rising dividend rate on effective demand. The latter requires a very low rentiers' propensity to save, a low elasticity of firms' investment with respect to internal funds and a high elasticity with respect to capacity utilisation. In the medium run, these conditions give rise to stable debt- and rentiers' equity-capital ratios, and the 'finance-led' accumulation regime may be maintained, provided that the positive effect of increasing shareholder power via the dividend rate is strong enough to over-compensate the negative effect via managements' preferences.

The short run may also give rise to the normal and the 'intermediate' case. In the normal case increasing shareholder power has a depressing effect on the real equilibrium. The negative impact on managements' animal spirits is reinforced by a negative demand effect of increasing dividend rates, due to a high shareholders' propensity to save and a high elasticity of firms' investment with respect to internal funds. In the 'intermediate' or 'profits without investment' case there is only a negative effect on capital accumulation, but a positive effect on capacity utilisation and the rate of profit, due to a low rentiers' propensity to save, but a low elasticity of investment concerning capacity utilisation and a high responsiveness to internal funds. In the medium run, the debt- and the rentiers' equity capital ratios are highly unstable in this case, and a rising dividend rate will trigger cumulative disequilbrium processes characterised by falling rates of capacity utilisation, profit and capital accumulation, and rising debt- and rentiers' equity capital-ratios, and hence by the macroeconomic 'paradox of debt'. The effects of rising shareholder power on managements' preferences will accelerate this process. Therefore, the intermediate or 'profits without investment' case is only a short-lived phenomenon in our model and will trigger highly unstable disequilibrium processes in the medium run.

Finally, it should be noted that these instability properties are supplemented by further problems, not explicitly addressed in the present paper: An 'intermediate' or 'profits without investment' regime, if it prevails for a certain period of time, will be characterised by weak real investment, weak capital stock growth and slow productivity growth, as far as the latter is embodied in capital stock. Although generating a high level of activity and a high profit rate in the short run, this regime will therefore face medium to long-run growth, employment and inflation problems caused by weak capital stock growth.[17]

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[17] 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 (2005b), Leon-Ledesma/Thirlwall (2002), Rowthorn (1995, 1999), and Sawyer (2002).

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