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Varieties of demand and growth regimes – post-Keynesian foundations

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We review post-Keynesian contributions to demand and growth regime analysis. First, for the theoretical model perspective, we distinguish the Kalecki–Steindl approach and the Sraffian supermultiplier approach as relevant theoretical foundations for demand and growth regime research, with investment-driven and distribution-led growth in the focus of the former and autonomous demand-led growth in the latter. Second, for the empirical-historical perspective, we review different ways of analysing the co-existence of demand and growth regimes in the current period of neoliberal and finance-dominated capitalism. We distinguish, first, a basic national income and financial accounting decomposition approach; second, a Sraffian supermultiplier inspired growth decomposition approach; and third, several lenses looking at growth drivers. We argue that these three levels of analysis are, in principle, not mutually exclusive nor even contradictory, but that they rather complement each other. We conclude that, in particular, the PK analysis of growth drivers provides several systematic links with comparative and international political economy approaches, when it comes to the introduction of the political economy dimension (social blocs, growth coalitions, changes in institutions favouring certain types of re-distribution and economic policies, etc.), while the national income and financial accounting, as well as the Sraffian supermultiplier growth accounting decomposition approaches provide the consistent macroeconomic foundations for such synthetic approaches.

Keywords: demand and growth regimes, post-Keynesian economics, Kalecki–Steindl models, Sraffian supermultiplier models, wage-/profit-led regimes, finance-led/finance-burdened regimes, profits without investment regimes, debt-led private demand boom regimes, export-led regimes, domestic demand-led regimes

JEL codes: B59, E02, E11, E12, E65, P51

1 INTRODUCTION

Starting with the work by Baccaro/Pontusson (2016, 2018) on ‘growth models’, post-Keynesian economics (PKE) research on ‘demand and growth regimes’ has been included into the comparative political economy (CPE) debates on Varieties of Capitalism (VoC).¹ Schedelik et al. (2021) suggest to apply the PKE inspired growth models approach to

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1. Whereas Baccaro/Pontusson (2016) and the CPE research following their lead are using the term ‘growth model’, we prefer to talk about ‘demand and growth regimes’, which is more common in PKE, both in theoretical and in empirical-historical analysis, while a growth model rather presents a theory of growth more generally. This will be further explained below.

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emerging capitalist economies, too, and Mertens et al. (2022) elaborate on such extensions. In international political economy (IPE), Blyth/Matthijs (2017) also argue in favour of overcoming microeconomic supply-side perspectives by opening up towards (post-) Keynesian (PK) macroeconomics. For a long time, the macroeconomics of VoC research in the tradition of Hall/Soskice (2001) had been based on New Consensus Macroeconomics (NCM) (Carlin/Soskice 2009, 2015), which downgrades the role of aggregate demand, finance, and income and wealth distribution for long-run analysis. Since these areas are of utmost importance for PKE, opening CPE and IPE research to PKE demand-led growth approaches may generate a better understanding of the interactions of institutions, distribution, finance and the macro-economy, and the variations of medium- to long-run growth regimes in modern capitalism, which have emerged during the last decades.

The work by Baccaro/Pontusson (2016, 2018) has triggered some PK responses that endorse this approach but that also try to clarify some of the misunderstandings, extend the analysis to further dimensions like welfare state models (Hein et al. 2021), or outline the PK macroeconomics, which could be useful for CPE analysis more generally (Stockhammer 2022; Stockhammer/Kohler 2022).² Other PK authors, however, still make use of the traditional static Hall/Soskice (2001) VoC distinction between liberal and coordinated market economies, which is meant to be overcome by the more dynamic growth models approach, and have linked this to their research on different demand and growth regimes in modern capitalism (Behringer/van Treeck 2018, 2019; Setterfield/Kim 2020).

However, none of these papers provide a systematic review of the PKE research on demand and growth regimes relating this also to the PK growth theory and growth models as such. Such a review may be helpful for at least two reasons. First, it should clarify the different uses of ‘growth models’ or ‘demand and growth regimes’ in PKE research and link the different levels of analysis which have emanated in a systematic way.³ Second, by doing so, it should facilitate communication with authors from CPE and IPE and clarify where and how PKE and CPE/IPE analyses can be linked and synthesized. In this paper we will thus review two basic ways in which PKs have made use of the notion of a demand and growth regime. Each basic approach will then have several variants, as will be explained below.

A first basic perspective on ‘demand and growth regimes’ is linked to the main growth determinants in PK ‘demand-led growth models’, like investment-led growth, distribution-led growth, or autonomous demand-led growth. A ‘regime’ then refers to the response of the equilibrium solution of a macroeconomic model towards a change in model parameters or exogenous variables, like the wage or profit share, income inequality, the rate of interest, the debt–capital ratio, or also shareholder power. These responses will mainly depend on the coefficients in the behavioural functions of the models, which are determined by history, institutions, power, conventions, etc. Of course, these effects can be and have been estimated in order to show how a certain economy in a certain time period has responded towards changes

2. Stockhammer (2022) points out three core macroeconomic foundations that PKs can provide for CPE: first, the Kaleckian distinction of wage-led and profit-led demand regimes; second, the PK theory of money, finance, financialisation, and Minskyan financial instability; and, third, the focus on path-dependent growth and demand-led technological progress. This does not contradict what we will present in this paper. However, we will go beyond this, with a more detailed focus on demand and growth regime analysis in PKE.

3. Our focus here is thus on PK contributions to demand and growth regime research and not on a general overview, going well beyond PKE, on different approaches toward varieties and varietals of capitalism, as intended by Palley (2022), for example.

in one of these variables, considered to be exogenous for analytical purposes. However, these estimations do not intend to fully explain demand and growth and their determinants for certain countries in some specific time periods. This leads us to the second PK perspective on regimes.

This second basic perspective on demand and growth regimes refers to ‘empirical-historical analysis’, which describes the actual development path of an economy. First, this has been related to the changes in demand and growth regimes over time, as analysed for developed capitalist economies since the Second World War. Second, this is associated with analysing the co-existence of different regimes during certain episodes, like finance-dominated capitalism, before and after the 2007–2009 crises, the Global Financial Crisis, and the Great Recession. We have analysed PK contributions to the historical succession of demand and growth regimes, in particular after the Second World War, in Hein et al. (2015a), focussing on the contributions by Cornwall/Cornwall (2001), Steindl (1979, 1989), Smithin (1996), and Minsky (1986) and comparing them to the contributions from the French Regulation Theory (Aglietta 1976; Boyer 2000) and the US Social Structure of Accumulation approach (Gordon et al. 1987; McDonough et al. 2010). There, we have pointed out that the PK approaches are not only focussed on macroeconomics but also provide some basic analyses of the political economy dimension of these regimes, including institutions, class, and power relationships – in the spirit of Kalecki (1943a).⁴ In the current contribution, we will thus focus on PK analyses of the co-existence of different demand and growth regimes under finance-dominated capitalism. Here, different sources of demand and finance, different drivers of growth, as well as the role of institutions and the application of macroeconomic policies are in the focus. This may then lead to clustering countries for certain periods of time into different demand and growth regimes and examining the change in these regimes over time.

The paper is organised as follows. In Section 2, we start with an overview of potential demand and growth regimes as derived in the Kalecki–Steindl and the Sraffian supermultiplier versions of PK demand-led growth models and point out their differences and commonalities, as well as their implications for empirical-historical growth regime analysis. Section 3 will then turn to the recent debate on the co-existence of different demand and growth regimes in finance-dominated capitalism, as well as the change in regimes with the 2007–2009 financial and economic crises. We will single out the different levels of analysis and their relationships with the theoretical models reviewed in Section 2, and we will argue that the approaches in the literature so far are rather complementary than mutually exclusive or inconsistent. Section 4 will summarise and conclude the paper.

2 DEMAND-LED GROWTH REGIMES IN POST-KEYNESIAN ECONOMICS: THE THEORETICAL MODEL PERSPECTIVE

In PK distribution and growth theory, three basic strands can be distinguished: (i) the Kaldor–Robinson models, based on the works of Kaldor (1955/56, 1957) and Robinson (1956, 1962); (ii) the Kalecki–Steindl models, based on the works of Kalecki (1943b, 1954)

4. We thus do not fully agree with Stockhammer/Kohler (2022: 185), who argue that ‘(w)hile it (PKE, E.H.) frequently refers to power and institutions as explanatory factors, they are not subject of analysis themselves’. In our view, this downgrades in particular the Kalecki–Steindl political economy tradition in PKE, based on Kalecki (1943a), Steindl (1979), and Bhaduri/Steindl (1985). Saying this does, of course, not deny that the expertise of CPE is more in political economy while that of PKE is more in heterodox macroeconomics.

and Steindl (1952); and (iii) the Sraffian supermultiplier models, based on the work of Serrano (1995) (Hein 2023: ch. 7).⁵ Of course, all three strands have in common that long-run growth is demand-led, and that saving adjusts to investment also in the long run. Since income distribution has no independent role to play when it comes to determining long-run growth trends in the Kaldor–Robinson models, in Kaldor’s (1966) later export-led growth model, or in Thirlwall’s (1979) balance-of-payments–constrained growth model which builds on Kaldor (1966), we will focus here, also for lack of space, only on the Kalecki–Steindl and the Sraffian supermultiplier models.⁶

2.1 The Kalecki–Steindl-based PK distribution and growth models: investment-led growth and distribution-led regimes

In the PK demand-led distribution and growth models in the tradition of Kalecki (1943b, 1954) and Steindl (1952), long-run growth is led by firms’ investment and capital accumulation, determined by growth/sales expectations and capacity utilisation, as well as profitability in some models. The rate of capacity utilisation is treated as an endogenous and adjusting variable beyond the short run. Wage and profit shares are mainly determined by mark-up pricing of firms on unit variable costs in oligopolistic or monopolistic goods market.⁷ The mark-up is determined by the degree of competition in the goods market, and thus the relative powers among firms, by the power of workers to raise nominal wages in the labour market as response towards rising mark-ups and prices, and, in the long run, also by persistent changes in overhead costs of firms (Kalecki 1954: chs. 1–2; Hein 2014: ch. 5). The paradox of saving, derived by Keynes (1936) for short-run macroeconomics, is valid in the long run, too: higher propensities to save out of profits or out of wages lead to lower equilibrium capacity utilisation, capital accumulation, growth, and a lower rate of profit. The emerging long-run growth rate is usually associated with underutilisation of the capital stock and unemployment and thus deviates from the neoclassical full utilisation and full employment growth rate, i.e. the natural rate of growth, without any endogenous adjustment.

2.1.1 *Wage- vs. profit-led regimes*

Since income distribution is seen to be exogenous for demand and growth, and determined by institutions and power relationships,⁸ Kalecki–Steindl models provide the

5. For a systematic comparison of different versions of orthodox and heterodox distribution and growth theories in a unified modelling framework making use of the method of model closures, see Hein (2017b; 2023: ch. 7).

6. For presentations of the Kaldor–Robinson first-generation PK distribution and growth models, as well as Kaldor’s export-led and Thirlwall’s balance-of-payments–constrained growth models, see Blecker/Setterfield (2019: ch. 3), Hein (2014: ch. 4), and Lavoie (2022: ch. 6).

7. For presentations of the Kalecki–Steindl PK distribution and growth models, see Blecker/Setterfield (2019: ch. 4), Hein (2014: chs. 5–11), and Lavoie (2022: ch. 6).

8. This does not mean that in Kalecki–Steindl models demand, growth and employment dynamics have no impact on income distribution, as Dutt (2012) has pointed out, and there a several Kalecki–Steindl models exploring such short-run interactions, as accounted in Hein (2017a). However, for medium- to long-run analysis, Kaleckians hold that distributional trends are political economy outcomes, which are difficult to relate directly and uniquely to output and employment dynamics.

space for exploring distribution-led demand and growth regimes. This has generated the prominent distinction between ‘wage- and profit-led demand and growth regimes’.⁹ If an increase in the profit share (b) reduces equilibrium demand, capacity utilisation (u^*), capital accumulation (g^*) and growth, we are in a ‘wage-led regime’, but if it increases these macro-economic variables a ‘profit-led regime’ is given (Table 1). Also an ‘intermediate regime’ with wage-led demand and profit-led growth is possible. Under specific conditions in the wage-led and the intermediate regime, an increase in the profit share may generate a fall in the equilibrium profit rate and hence a ‘paradox of costs’ (Hein 2014: ch. 6).

In the closed economy version of the neo-Kaleckian model, based on Rowthorn (1981) and Dutt (1984, 1987), demand and growth are always wage-led, because variations in the profit share only have direct effects on consumption, as the propensity to save out of profits is higher than out of wages. But there is no direct impact on investment, which is determined by ‘animal spirits’ and the rate of capacity utilisation (as well as the profit rate in some models). However, as shown by Blecker (1989), for an open economy neo-Kaleckian model, with a potentially positive effect of the determinants of the profit share on net exports, assuming a positive link of the profit share with international price competitiveness of domestic producers and the Marshall–Lerner condition to hold, also profit-led demand and growth regimes may arise. This will be the case, if the effect of redistribution on net exports dominates the effect on domestic demand. This is more likely for small open economies with a high share of exports in total demand, with a strong link of profit shares with the real exchange rate and international price competitiveness, and with a high price elasticity of the demand for exports and imports.

Another way of generating profit-led demand and growth, as a potential regime also for the closed economy, is the introduction of a directly positive effect of the profit share into the investment function, as in the post-Kaleckian models by Bhaduri/Marglin (1990) and Kurz (1990). Profit-led demand and growth will emerge, if the direct effects of a variation in the profit share on investment dominates over the effects on consumption, with indirect effects via aggregate demand on investment. For the open economy post-Kaleckian model, the effect of changes in the profit share on net exports is taken into account as well. The nature of the demand and growth regime will thus depend on the propensities to save out of wages and out of profits, the responses of investment towards demand/capacity utilisation and the profit share, the impact of redistribution on international price competitiveness, the relevance of price competitiveness for exports and imports, and the degree of openness of the economy. Starting with Bowles/Boyer (1995), these theoretical models have inspired dozens of empirical papers estimating the type of regime dominating

Table 1 Wage- and profit-led demand and growth regimes in Kaleckian distribution and growth models

	$\frac{\partial u^*}{\partial b}$	$\frac{\partial g^*}{\partial b}$	$\frac{\partial r^*}{\partial b}$
Wage-led demand and growth regime	–	–	+/–
Intermediate regime: Wage-led demand and profit-led growth	–	+	+/–
Profit-led demand and growth regime	+	+	+

Notes: b : profit share, u : rate of capacity utilisation, g : accumulation/growth rate, r : profit rate, *: equilibrium value.

9. See also Lavoie (2017) for a historical account of the development of the wage-led vs. profit-led demand and growth debate.

in certain countries in certain periods of time, with partly contradicting results, depending on the method applied.¹⁰

The original neo- and post-Kaleckian models – and most of the empirical research – has focussed on functional income distribution and has paid little attention to the distribution of profits and wages among households. The inclusion of this distributional dimension may modify the results regarding wage- and profit-led regimes, as reviewed by Hein/Prante (2020). For example, Palley (2017) assumes that workers' households save and accumulate real and financial wealth, and thus obtain parts of profits, and that saving and consumption behaviour of managers receiving salaries/wages is close to that by the capitalists. The distribution of real and financial wealth, and thus profits from that wealth, between capitalists and workers and the distribution of salaries/wages between managers and workers then have an impact on the nature of the regime. With the propensity to save of managers/capitalists out of their profit and wage incomes being higher than the propensity to save of workers, a higher share of workers in wealth and profits makes the economy more likely to be profit-led, whereas a higher share of workers in wages and salaries makes it more likely to be wage-led. Even though with constant profit and wage dispersion the economy may be wage-led, it may turn profit-led if an increase in the profit share is accompanied by a higher share of workers in capital ownership (and thus profits) or by a higher share of workers in wages/salaries.¹¹

Increasing wage/salaries inequality, however, may affect the demand and growth responses towards changes in the profit shares also in another direction, if workers' consumption demand is affected by relative incomes and interdependent consumption norms ('keeping up with the Joneses'), or by the requirement to maintain a basic level of private consumption when real wages and wage shares are falling.¹² Of course, workers' households also need to have access to credit in order to finance consumption beyond their income and must be willing to go into debt. Consumption emulation can then be seen as a complex phenomenon affected by socio-cultural preferences, institutions, the (non-)provision of public goods (especially housing, education and healthcare), and the degree of regulation of the financial sector. In this case, rising wage inequality associated with a higher profit share may turn an otherwise wage-led regime 'seemingly profit-led' (Hein 2023: ch. 4; Hein/Prante 2020) – and will be associated with rising indebtedness of the workers' household sector.

The issue of distribution-led regimes has also been extended to labour productivity growth and thus to potential growth (Dutt 2006; Hein 2014: ch. 8; Hein/Tarassow 2010; Naastepad 2006; Storm/Naastepad 2012, 2013). For this purpose, the basic Kaleckian model is amended by a productivity growth equation (or a productivity regime).

10. For recent multi-country results, see Hartwig (2014), Onaran/Galanis (2014), and Onaran/Obst (2016). For reviews of empirical studies see Akcay et al. (2022), Hein (2014: ch. 7), and Stockhammer/Onaran (2013). For discussions of different empirical approaches, the structural or single equations approach, on the one hand, and the aggregative or systems approach, on the other hand, see, for example, Blecker (2016) and Stockhammer (2017).

11. Furthermore, if demand and growth are profit-led, a more equal distribution of wages/salaries, i.e. a higher share of workers and a lower share of managers, is always expansionary in Palley's (2017) model.

12. These models are related to Veblen's (1899) 'conspicuous consumption', Duesenberry's (1949) 'relative income hypothesis', and the 'expenditure cascades' proposed by Frank et al. (2014). For different types of PK/Kaleckian macroeconomic models, including interdependent consumption and financing norms, see Belabed et al. (2018), Detzer (2018), Kapeller/Schütz (2014, 2015), Prante et al. (2022), Setterfield/Kim (2017), and Setterfield et al. (2016), for example, partly also analysing the potentials for long-run financial (in)stability.

Table 2 Overall effects of a change in the profit share on the long-run growth regime

	Wage-led demand and growth regime: $\frac{\partial u^*}{\partial b} < 0, \frac{\partial g^*}{\partial b} < 0$	Profit-led demand and growth regime: $\frac{\partial u^*}{\partial b} > 0, \frac{\partial g^*}{\partial b} > 0$		
$\frac{\partial u^{**}}{\partial b}$	–	–	+	+
$\frac{\partial g^{**}}{\partial b}$	–	–	+	+
$\frac{\partial \hat{y}^{**}}{\partial b}$	–	–	–	+
Overall growth regime	Wage-led	Wage-led	Intermediate	Profit-led

Notes: b : profit share, u : rate of capacity utilisation, g : accumulation/growth rate, \hat{y} : productivity growth rate, *: equilibrium value with exogenous productivity growth, **: overall equilibrium value with endogenous productivity growth.

Labour productivity growth is assumed to depend positively on the institutional environment (i.e. government investment in education and R&D, learning by doing conditions, entrepreneurial attitudes, etc.) and demand or capital stock growth, following Kaldor (1957, 1966). Furthermore, a positive effect of the wage share (or of real wage growth) on productivity growth is added, because, in line with Marx (1867), a (potential) squeeze of profits will stimulate capitalists’ efforts to protect the profit share by introducing labour-saving technological change. From the interaction of demand and growth regime with the productivity regime, the ‘overall regime’ – and thus potential growth – will be definitely wage-led if the demand and growth regime is wage-led (Table 2). However, if the demand and growth regime is profit-led, the overall regime may be wage- or profit-led, or intermediate, depending on the relative strengths of the effects of re-distribution on aggregate demand and productivity growth, which will be in opposite directions in these regimes.¹³

Within this kind of approach, profit- or wage-led employment regimes can also be generated (Storm/Naastepad 2013), taking into account the relative effects of distributional change on output growth and on productivity growth. Furthermore, other dimensions of wage and wealth inequality, like gender inequality and gender pay-gaps, have also been explored in a similar vein, examining the effects of changes in the gender pay-gap on functional distribution between profits and wages, consumption, investment, net exports, and productivity growth, and then generating gender-equality-led or gender-equality-burdened regimes (Hein 2020; Onaran et al. 2022a, 2022b; Sequino 2020).

2.1.2 Finance, credit, distribution, and demand and growth regimes

Another distributional dimension affecting demand and growth regimes in Kaleckian models has been introduced by explicitly considering the role of credit and corporate finance and thus adding the distribution between rentiers, i.e. creditors and shareholders, on the one side, and firms or corporations on the other side. In these models, in line with the post-Keynesian horizontalist endogenous money and credit view, the long-term rate of interest is viewed as an exogenous parameter, determined by central bank policies

13. See, for example, Hein/Tarassow (2010) and Hein (2014: ch. 8) for a derivation of the precise conditions for overall wage- and profit-led regimes. Hartwig (2013, 2014), Hein/Tarassow (2010), and Naastepad (2006) have presented estimations of productivity regimes and overall regimes, finding mostly wage-led results.

regarding the short-term money market rate and by liquidity preferences and risk assessments of banks and financial wealth holders, which determine the spread between short-term and long-term rates, while the volumes of credit and money are endogenous to economic activity (Hein 2023: ch. 4; Lavoie 2022: ch. 4).

For a given corporate debt–capital ratio and with a given mark-up in firms’ pricing in the goods market determining the wage and profit shares, variations in the long-term rate of interest thus affect distribution of profits between rentiers and firms. Interest payments are costs for firms and have a negative impact on firms’ retained profits and their investment, because retained profits improve creditworthiness of firms in incompletely competitive credit markets and calm down firms’ fear for insolvency, according to Kalecki’s (1937) ‘principle of increasing risk’. However, interest payments of firms are also income for rentiers with a positive effect on rentiers’ consumption. Including these opposite effects on investment and consumption into neo- or post-Kaleckian models, has led Lavoie (1995) to distinguish between ‘normal and puzzling cases (or regimes)’. In the ‘normal case’, a rise in the long-term rate of interest (i) will have contractive effects on equilibrium demand, capacity utilisation, the rate of profit, capital accumulation and growth, because the depressing effects on investment are larger than the positive impacts on rentiers’ consumption (Table 3). In the ‘puzzling case’, however, the positive effects on rentiers’ consumption dominate the directly negative effects on firms’ investment. The type of regime will thus mainly depend on the rentiers’ propensity to consume and on the effects of interest payments – via internal means of finance – on firms’ investment, as well as on the response of investment to aggregate demand and hence capacity utilisation. Also an ‘intermediate case’ has been derived, in which a higher interest rate raises aggregate demand, capacity utilisation and the rate of profit, but lowers equilibrium capital accumulation, because the accelerator effect in the investment function is weak (Hein 2014: ch. 9).¹⁴

As shown in Hein (2014: ch. 9), the conditions of a puzzling case or regime will also generate a ‘debt-led demand and growth regime’, in which a rising corporate debt–capital ratio will raise the equilibrium rates of capacity utilisation, capital accumulation and growth.¹⁵ The direct distribution effects of higher interest payments associated with a higher debt–capital ratio and a given long-term interest rate will raise rentiers’

Table 3 Normal, intermediate and puzzling cases (regimes) in Kaleckian closed economy distribution and growth models with interest and credit to firms

	$\frac{\partial u^*}{\partial i}$	$\frac{\partial g^*}{\partial i}$	$\frac{\partial r^*}{\partial i}$
Normal case (regime)	–	–	–
Intermediate case (regime)	+	–	+
Puzzling case (regime)	+	+	+

Notes: i : interest rate, u : rate of capacity utilisation, g : accumulation/growth rate, r : profit rate, *: equilibrium value.

14. Introducing a medium- to long-run interest-elastic mark-up into the model, and making functional income distribution between aggregated profits and wages a function of the interest rate, modifies the regimes depending on whether aggregate demand is profit- or wage-led. See also Hein (2007, 2008, 2014: ch. 9) for detailed analysis. Hein/Schoder (2011) provide some empirical estimations of normal or puzzling cases or regimes taking interest rate effects on profit and wage shares into account, and have found the normal case for both Germany and the US.

15. This assumes that the debt-capital ratio of the corporate sector is an exogenous variable under the control of the firm sector, which, however, is not the case, in particular if we take a long-run

consumption more than it depresses firms' investment. The normal case or regime conditions will therefore be associated with a 'debt-burdened demand and growth regime'; a higher corporate debt–capital ratio will mean lower equilibrium rates of capacity utilisation, capital accumulation, and growth.

Some slight extensions allow to make use of this modelling framework to address some basic features of finance-dominated capitalism and to derive potential regimes, for a closed economy model with corporate, but yet without household debt (Hein 2010, 2012: ch. 3, 2014: ch. 10). First, it is assumed that firms not only pay interest to rentiers but also dividends. Instead of the rate of interest as the distribution parameter, the rentiers' rate of return on equity and bonds, a composite of the rate of interest and the dividend rate, is treated as such a parameter. Shareholder value orientation of management, as a main corporate feature of finance-dominated capitalism, will mean a rise of this rentiers' rate of return in order to boost share prices and shareholder value – share buybacks fulfil the same purpose. This has thus depressing effects on firms' investment through the internal means of finance channel, but it raises rentiers' income and hence consumption. In the medium to long run, the mark-up in firms' pricing in the goods market may become elastic with respect to the rentiers' rate of return, which will then also affect wage and profit shares. Second, with financialisation and increasing shareholder value orientation, non-financial corporations' managements' animal spirits regarding real investment in the capital stock may get depressed, because of an imposed preference for short-term profits by means of financial investment instead of long-term profits by means of expanding the capital stock.¹⁶

Through the internal means of finance and the preference channels, increasing shareholder power (Ω) may thus generate a contractive 'finance-burdened demand and growth regime' with depressing effects on equilibrium rates of capacity utilisation, capital accumulation and profit (Table 4). For this regime, it is sufficient that the normal case conditions regarding the effect of the rentiers' rate of return prevail. If the puzzling case conditions dominate and the effect of shareholder value orientation on animal spirits is weak, we may see a 'finance-led demand and growth regime' with positive effects of increasing shareholder power on the macroeconomic variables. In between, we have a 'profits without investment demand and growth regime', which will be generated if the intermediate case conditions are given and the effect of rising shareholder power on managements' animal spirits are weak. In this regime, the effects of increasing shareholder power generate a higher rate of capacity utilisation and a higher rate of profit, but a lower rate of capital accumulation and growth.

As will be seen below, the profits without investment regime, initially pointed out by Cordonnier (2006), has been of particular interest for the empirical-historical regime analysis in finance-dominated capitalism. In the simple closed private economy model of Hein (2010, 2012: ch. 3, 2014: ch. 10), with only corporate debt but no private household debt, this regime requires a low propensity to save out of rentiers' income and a stable or only slightly falling wage share, such that consumption demand is boosted while investment in the capital stock remains depressed. However, in models with potential private household

perspective. In the respective models, therefore, the debt-capital ratio is then endogenised in the long-run analysis and its stability is analysed (Lavoie 1995; Hein 2014: ch. 9). It is shown that only the puzzling case generates long-run stable corporate debt-capital ratios, whereas normal and intermediate cases are associated with long-run unstable corporate debt-capital ratios. However, reviewing this and further refinements in the literature (e.g. Franke 2016; Hein 2013; Sasaki/Fujita 2012) is beyond the scope of the current paper.

16. For the PK theory of the firm under the conditions of finance-dominated capitalism, see Dallery (2009) and Hein/van Treeck (2010a), and on the micro-macro relationship – and potential fallacies of composition – see Hein/van Treeck (2010b).

Table 4 Demand and growth regimes in closed economy finance-dominated capitalism with increasing shareholder power and without household debt

	Effect via management's animal spirits (preference channel)	Effect via rentiers' rate of return (internal means of finance channel)	$\frac{\partial u^*}{\partial \Omega}$	$\frac{\partial g^*}{\partial \Omega}$	$\frac{\partial r^*}{\partial \Omega}$
Finance-burdened demand and growth regime	Weak/Strong	Normal case	–	–	–
Profits without investment regime	Weak	Intermediate case	+	–	+
Finance-led demand and growth regime	Weak	Puzzling case	+	+	+

Notes: Ω : shareholder power, u : rate of capacity utilisation, g : accumulation/growth rate, r : profit rate, *: equilibrium value.

debt, with an external sector and a government sector, profits without investment regimes and thus (seemingly) profit-led demand regimes can also be generated by workers' households' credit financed consumption, by net exports and thus foreign sector deficits, or by government deficit-financed demand (Hein 2014: ch. 10, 2023: ch. 8; Prante et al. 2022). A 'profits without investment regime' with regard to shareholder power would thus be simultaneously a '(seemingly) profit-led demand regime' with regard to functional distribution between profits and wages, and a 'debt-led demand regime' with regard to household, government, or foreign sector debt.¹⁷

The conditions for profits without investment regimes can also be clarified by making use of Kalecki's (1954: ch. 3) profit equation derived from national income accounting, including government deficit spending but ignoring taxation in our case:

$$\Pi = I + C_R + G + X - M - S_W, \quad (1)$$

with Π representing profits, I private investment, C_R rentiers' consumption out of distributed profits (interest and dividends), G government deficit expenditures, X exports, M imports, and $S_W = W - C_W$, saving out of wages as the difference between wages (W) and consumption out of wages (C_W). Dividing by the capital stock (K) yields:

$$r = g + \frac{C_R}{K} + \frac{G}{K} + \frac{X - M}{K} - \frac{S_W}{K}. \quad (2)$$

Depressed investment and a depressed accumulation rate ($g = I/K$) in finance-dominated capitalism may thus be associated with high profits and a high profit rate ($r = \Pi/K$), if consumption out of rentiers income, government deficit expenditures, net exports,

17. A 'finance-led demand and growth regime' with regard to shareholder power would be simultaneously a '(seemingly) profit-led demand and growth regime' with regard to functional distribution between profits and wages, and a 'debt-led demand and growth regime' with regard to household, government, or foreign sector debt. Reviewing the precise conditions under which these regimes emerge, as well as surveying the stability analysis in models with endogenous private household, government, or foreign sector debt is beyond the scope of our current paper. See Hein (2014, ch. 10) for some further details.

and/or consumption out of wages rise (and thus saving out of wages fall), each also normalised by the capital stock.

2.2 The Sraffian supermultiplier growth models: autonomous demand-led growth regimes

Another variant of PK growth theories relevant for current research on growth regimes is the Sraffian supermultiplier model driven by autonomous non-capacity creating demand, originally proposed by Serrano (1995).¹⁸ In these models, the autonomous growth rate of a non-capacity creating component of aggregate demand, e.g. autonomous consumption, residential investment, exports or government expenditures, determines long-run growth. These demand components are considered autonomous in the sense that they are neither financed out of current income nor directly determined by current income. Investment is viewed as fully induced in the long run and has thus no independent role to play for the long-run growth regime. The rates of capital accumulation and output growth will thus adjust towards the autonomous growth rate determining the growth rate of the system. The same is true for other induced parts of aggregate demand, like income-financed consumption as well as imports determined by domestic income growth.

Different from the Kalecki–Steindl PK distribution and growth models, the rate of capacity utilisation is assumed to converge to the firms' target rate, i.e. the normal rate, in the long run. Only in the short run may capacity utilisation diverge from the normal rate, and capital accumulation from the autonomous growth rate. But in line with the Kalecki–Steindl version, functional income distribution is viewed to be exogenous for long-run demand and growth dynamics, determined by socio-institutional factors and power variables. Therefore, in this demand-led growth approach, saving adjusts to investment neither through changes in capacity utilisation in the long run, as in the Kalecki–Steindl strand, nor through variations in functional income distribution, as in the Kaldor–Robinson strand of PK growth theory, not discussed here. The adjustment towards the long-run equilibrium growth rate determined by autonomous expenditure growth rather takes place through a variable autonomous expenditure–capital ratio, which makes the saving–capital ratio endogenous, too (Hein 2023: ch. 7).

In this model, changes in income distribution have no effect on the long-run growth rate of the economy – long-run growth regimes are thus not distribution-led. However, changes in income distribution will affect the traverse towards the long-run growth equilibrium and may thus have an impact on the level of income and thus on the growth path – short-run demand may hence be distribution-led. Therefore, growth regime analysis can focus on the political economy determination of the different components of autonomous demand determining the long-run growth rate, and on the multiplier affecting the level of output and thus the growth path. Starting from national income accounting and distinguishing autonomous and domestic income-induced parts of demand, we get:

$$Y = C + I + G + X - M = C_a + cY + I_a + \beta Y + G_a + X_a - mY, \quad (3)$$

with Y for income, C for consumption, C_a for autonomous consumption, c for the propensity to consume out of income, I for investment, I_a for autonomous residential investment, β for the inducement to invest by domestic income, G for government expenditures

18. For an introduction to the supermultiplier model and a comparison to other PK distribution and growth models, see Freitas/Serrano (2015, 2017), Blecker/Setterfield (2019: ch. 7), and Hein (2023: ch. 7).

assumed to be fully autonomous from domestic income, hence G_a , X for exports also assumed to be fully autonomous from domestic income, hence X_a , M for imports, and m for the propensity to import from domestic income. We hence obtain the following supermultiplier equation:

$$Y = \mu Z, \quad (4)$$

with autonomous demand $Z = C_a + I_a + G_a + X_a$ and the supermultiplier $\mu = \frac{1}{1-c-\beta+m}$. For the respective growth rates, equation (4) becomes:

$$\hat{Y} = \hat{\mu} + \hat{Z}. \quad (5)$$

With a constant super multiplier ($\dot{\mu} = 0$) in long-run equilibrium, the autonomous growth rate (\hat{Z}) thus determines output growth (\hat{Y}). Changes in the super multiplier, i.e. changes in the propensities to consume, to invest, and/or to import, will temporarily affect output growth, unless these propensities grow or fall permanently, which is quite unlikely. Therefore, the saving paradox is only valid for the level of income and thus the growth path, but not for the growth rate. An improvement in firms' animal spirits and the inducement to invest will also only have short-run level effects, but no long-run growth impact. The same is true for changes in income distribution affecting the average propensity to consume, which will have a short-run effect on output, but no long-run effect on the growth rate. Furthermore, if the components of autonomous demand grow at different rates, the autonomous demand component with the highest growth rate will dominate autonomous demand growth, and its share in autonomous demand will converge to unity in the very long run, whereas the share of the other component will converge to zero.¹⁹ This will then give rise to autonomous consumption-led, residential investment-led, government expenditures-led, or export-led growth regimes or – as long as long-run equilibrium has not been reached – some combinations of these regimes, maybe moderated by changes in the supermultiplier.

2.3 Implications for the macroeconomics of growth regime research

Summing up, following the Kalecki–Steindl approach, long-run growth in the basic model is investment-driven, and positively affected by firms' growth/sales and profitability expectations. The growth rate is negatively affected by the propensities to save out of different types of income. Extending the model, autonomous technological change and financing conditions will also affect investment and hence growth. Furthermore, as Kalecki (1971: ch. 13) has pointed out, growth is also affected by the dynamics of 'external sources' of demand, i.e. government deficits and export surpluses, similar to autonomous demand as growth driver in the Sraffian supermultiplier growth model. Income distribution plays a major role in the Kalecki–Steindl approach, and there are several ways of integrating distribution-led growth: the capital–labour conflict leading to wage- vs. profit-led regimes, as well as the rentiers–management distribution conflict leading to normal or puzzling cases, and, under the condition of finance-dominated capitalism, to finance-burdened, profits without investment, or finance-led regimes. Of course, several other lines of distribution and respective regimes can be introduced, for example, regarding gender distribution. It should be clear that these regimes describe effects of

19. Models with more than one autonomous growth rate have been provided by Allain (2022), Freitas/Christianes (2020), Hein/Woodgate (2021), and Morlin (2022).

changes in distributional model parameters on equilibrium capacity utilisation/demand and capital accumulation/growth. They do not imply that, for example, in a country with a wage-led demand and growth regime, pro-labour distributional policies are applied, or that in a country with a finance-led growth regime pro-rentiers/shareholder policies are indeed implemented.²⁰ Demand and growth regime analysis based on the Kalecki–Steindl approach would thus have to focus on growth of the ‘external sources’ of demand, the determinants of investment and saving, and on the different dimensions of distributional change.

The Kalecki–Steindl approach has been criticised for assuming a variable rate of capacity in the long-run growth equilibrium, which implies that there should be an equilibrium, in which firms have not reached their target rate of capacity utilisation (Hein 2014: ch. 11; Hein et al. 2011, 2012a). This may be a problem for a long-run growth equilibrium in pure theory. However, it is not necessarily a problem for medium- to long-run empirical growth regime analysis, because a long-run equilibrium in which firms operate at a constant and given normal rate of capacity utilisation might never be reached – and may thus not be present in the observable data. Alternatively, the target or normal rate of utilisation may be time-varying and (partly) endogenous to the goods market equilibrium (or actual) rate of utilisation.²¹

From the Sraffian supermultiplier approach, we get that growth is driven by non-capacity creating autonomous demand and growth. Changes in income distribution and saving behaviour or in the inducement to invest or to import have only short-run level effects and have thus an impact on the growth path, but not the growth rate. The latter will be driven by the component of autonomous demand with the highest growth rate in the very long run. Growth regime analysis would thus have to focus on explaining growth of the different components of autonomous demand, while the analysis of distribution and the behavioural coefficients regarding consumption, investment, and imports is shifted to the backseat with only short-run level effects, at least in theory.

However, the Sraffian supermultiplier growth theory has also faced some criticism (Nikoforos 2018; Skott 2019). First, the assumption that investment is fully induced in the long run may not pay sufficient attention to firms’ animal spirits and expectations in a fundamentally uncertain world. Second, it remains somewhat unclear whether any component of autonomous demand is really fully autonomous from income dynamics in the long run. Third, the assumption that firms operate the capital stock at the target or normal rate of utilisation may be a requirement for a consistent long-run growth equilibrium, which, however, in the real world may never be reached – or the target rate may be time-varying and partly endogenous. Therefore, empirical demand and growth regime analysis should also have an eye on the dynamics of the different inducements and propensities to spend out of current income determining the supermultiplier, and thus also on changes in income distribution.

Both the Kalecki–Steindl and the Sraffian supermultiplier variants of PK growth theory face the further critique that they are treating income distribution as exogenous for the analysis of aggregate demand and growth dynamics (Skott 2017, 2019). However, on

20. See Lavoie/Stockhammer (2013) for a discussion of the difference between wage- or profit-led demand and growth regimes, on the one hand, and the applied policy stance with the likely outcomes, on the other hand.

21. For the defence of the Kaleckian notion of an endogenous rate of utilisation beyond the short run, see the reviews in Hein (2014: ch. 11) and in Hein et al. (2011, 2012). For recent contributions to the ‘utilisation controversy’, see, for example, Franke (2020), Girardi/Pariboni (2019), Nikiforos (2013, 2016, 2021), Setterfield (2019), and Setterfield/Avritzer (2020).

the one hand, there have been several Kaleckian models that endogenise distribution dynamics into their (rather short-run) macro models (Hein 2017a). On the other hand, treating distribution as exogenous in long-run growth theory opens up these approaches towards the integration of socio-institutional and power relationships affecting income and wealth distribution. Institutions – i.e. ‘the rules, laws, and customs that define acceptable social behaviour’ (Cornwall/Cornwall 2001: 8) – and power relations also affect the behavioural coefficients in investment, consumption/saving and import functions. Therefore, in our view, the two PK approaches provide some sound theoretical macroeconomic foundations for empirical-historical medium- to long-run demand and growth regime analysis, to which we turn next.

3 THE MACROECONOMICS OF FINANCE-DOMINATED CAPITALISM AND THE CO-EXISTENCE OF DIFFERENT DEMAND AND GROWTH REGIMES: THE EMPIRICAL-HISTORICAL PERSPECTIVE

We have reviewed the notion of demand and growth regimes related to responses of equilibrium values towards changes in exogenous parameters or variables in theoretical PK distribution and growth models in the previous section. In this section, we now change the perspective and turn to a review of the empirical-historical analyses of demand and growth regimes in finance-dominated capitalism, as put forward by PK authors. This analysis is focussed on the sources and financing of demand and growth in specific countries in the time periods under consideration, and on those economic, social and political factors driving growth through (some of) those channels indicated in the theoretical models in the previous section. This empirical-historical regime analysis has initially been based on and motivated by the PK interpretation of the macroeconomic features of finance-dominated capitalism, which we therefore briefly summarise first and relate them to the regimes derived from the theoretical models above.

3.1 The macroeconomic features of finance-dominated capitalism

The changes in the structure, institutions, and power relationships in modern finance-dominated capitalism have been reviewed and summarised in Guttman (2016), Palley (2009, 2012, 2013, 2021a, 2021b), Sawyer (2013/14), and van der Zwan (2014), for example, with a focus on developed capitalist economies.²² From a PK macroeconomic perspective, these changes have had important implications for (1) income distribution, (2) investment in the capital stock, (3) consumption, and (4) the build-up of global and regional (e.g. European) current account imbalances, as explained in Hein (2012, 2014: ch. 10) and Hein/van Treeck (2010a), for example, again with a focus on developed capitalist economies.²³

1. With regard to distribution, financialisation has been conducive to a rising gross profit share, including retained profits, dividends, and interest payments, and thus a falling labour income share, on the one hand, and to increasing inequality of wages and top management salaries and thus of wage dispersion and of personal

22. For financialisation and demand and growth regimes in emerging capitalist economies, see Akcay et al. (2022) and the literature reviewed there.

23. See also Hein (2019, 2022), Hein/Mundt (2012, 2013), Stockhammer (2010, 2012, 2015), van Treeck/Sturm (2012, 2013), the contributions in Hein et al. (2015b, 2016), and several others.

or household incomes, on the other hand (Hein 2012: ch. 2, 2015). The features of finance-dominated capitalism have contributed to the falling labour income share since the early 1980s through three main channels: the falling bargaining power of trade unions, rising profit claims imposed in particular by increasingly powerful rentiers/shareholders, and a change in the sectoral composition of the economy in favour of the financial corporate sector at the expense of the non-financial corporate sector or the public sector with higher labour income shares (Dünhaupt 2017; Dünhaupt/Hein 2019; Hein et al. 2017a, 2017b, 2018; Kohler et al. 2019).

2. Regarding investment in the capital stock, financialisation has meant increasing shareholder power vis-à-vis firms and workers, the demand for an increasing rate of return on equity held by rentiers, and an alignment of management with shareholder interests through short-run performance-related pay schemes, such as bonuses and stock option programmes. On the one hand, this has imposed short-termism on management and has caused a decrease in management's animal spirits with respect to real investment in the capital stock and long-run growth of the firm and an increasing preference for financial investment, generating high profits in the short run. On the other hand, it has drained internal means of finance available for real investment purposes from non-financial corporations, through increasing dividend payments and share buybacks in order to boost stock prices and thus shareholder value. These 'preference' and 'internal means of finance' channels each have partially negative effects on firms' real investment in the capital stock (Dallery 2009; Stockhammer 2004, 2005/6; Davis 2017; Orhangazi 2008; Onaran et al. 2011; Tori/Onaran 2018; van Treeck 2008).
3. Regarding consumption, financialisation has generated an increasing potential for wealth-based and debt-financed consumption in some countries. This created the potential to compensate for the depressing demand effects of financialisation, which have been imposed on the economy via re-distribution and income-financed consumption and via the depressing impact of shareholder value orientation on real investment. Stock market and housing price booms have each increased notional wealth against which households were willing to borrow. Changing financial norms, new financial instruments (credit card debt, home equity lending), and the deterioration of credit-worthiness standards, triggered by securitisation of mortgage and other types of debt and 'originate and distribute' strategies of commercial banks, made credit increasingly available to low-income, low-wealth households in particular. This potentially allowed for consumption to rise faster than median income and thus to stabilise aggregate demand. But it also generated increasing debt-income ratios of private households (Barba/Pivetti 2009; Cynamon/Fazzari 2008; Guttmann/Plihon 2010; Kim 2013, 2016; Kim et al. 2015; van Treeck/Sturm 2012, 2013; van Treeck 2014).
4. The liberalisation of international capital markets and capital accounts in the period of finance-dominated capitalism has allowed for rising and persistent current account imbalances at the global, but also at the regional levels, in particular within the Eurozone (Akçay et al. 2022; Hein 2012: ch. 6, 2014: ch. 10; Hein/Martschin 2020; Hein/Mundt 2012, 2013; Stockhammer 2010, 2012, 2015; van Treeck/Sturm 2012, 2013). These rising current account imbalances were accompanied by rising foreign indebtedness of the current account deficit countries, speculative capital movements, exchange rate volatilities and potential (and actual) currency crises.

Seen from a Kalecki–Steindl theoretical distribution and growth perspective, the macroeconomic effects of finance-dominated capitalism through the first two channels, i.e. the distribution and investment channels, should be contractive, in particular in

economies with a wage-led demand and growth regime. The latter has been found in several (multi-country) empirical studies, in particular for developed capitalist economies (Hartwig 2014; Onaran/Galanis 2014; Onaran/Obst 2016; Stockhammer/Onaran 2013). Without considering the third and fourth channels, this would also imply a finance-burdened regime regarding the effect of rising shareholder power on demand and growth. However, the third and fourth channels, with expansionary effects via credit-financed consumption and residential investment, or, alternatively, via net exports and current account surpluses, may compensate for these depressing effects. This can then give rise to a profits without investment regime, and hence to a (seemingly) profit-led demand regime,²⁴ dominated by debt-led private demand (and rising indebtedness of the domestic private household sector) or by export-led mercantilist dynamics (and rising indebtedness of the counterpart current account deficit countries). Government deficits and debt may fulfil a similar role, as should be clear from our discussion at the end of Section 2.1 and from equations (1) and (2), i.e. Kalecki's profit equation.²⁵

3.2 The national income and financial accounting decomposition approach: sources and financing of demand and growth determining the regime

A first attempt at classifying demand and growth regimes under the conditions of the dominance of finance, income re-distribution at the expense of labour and low-income households, and weak investment in the capital stock, which gives rise to profits-without-investment and seemingly profit-led demand regimes (but not profit-led growth regimes), is a national income and financial accounting decomposition approach. This approach looks at the sources of demand and at the way demand is financed. The approach was introduced by Hein (2011a, 2011b) and has then been used in several studies with slightly differing labelling of regimes for the period before the Global Financial Crisis and the Great Recession (2007–2009).²⁶ In these studies, the following regimes have been distinguished: (i) an export-led mercantilist (ELM) regime; (ii) a weakly export-led (WEL) regime; (iii) a domestic demand-led (DDL) regime; and (iv) a debt-led private demand (boom) (DLPD) regime. Empirically, these demand and growth regimes have been assessed by considering, first, the financial balances of the main macro-economic sectors:

- the private sector financial balance ($FB_p = S - I$), as the difference between private saving (S) and private investment (I), and with the private household sector, the financial and non-financial corporate sectors as sub-sectors;
- the government sector financial balance ($FB_G = T - G$), as the difference between tax revenues and social security contributions (T) and government expenditures (G); and

24. With strong accelerator effects on investment, which over-compensate the depressing effects of increasing shareholder power on investment in the capital stock, even a finance-led growth regime and hence a seemingly profit-led growth regime may emerge.

25. See Hein (2012, 2014: ch. 10, 2023: ch 8) for derivations of these regimes making use of small-scale analytical Kaleckian distribution and growth models. For stock-flow consistent numerical simulation models see, for example, Belabed et al. (2018), Detzer (2018), and Prante et al. (2022).

26. See also Hein (2012: chs 6 and 8, 2013/14) and Hein et al. (2012b). Stockhammer (2010, 2012) has made use of a similar set of indicators to distinguish debt-led and export-led regimes before the 2007–2009 crises. Morlin et al. (2022: 7) are thus wrong arguing that Baccaro/Pontusson (2016) have stimulated the PK research on growth models or regimes in advanced capitalist economies before and after the 2007–2009 crises.

- the external sector financial balance ($FB_E = M - X + FI^{\text{net}}$), as the difference of domestic imports (M) generating foreign sector revenues and domestic exports (X) which are equivalent to foreign sector expenditures. The external sector balance also includes the net revenues from the cross-border payments for factors of production, i.e. wages and capital incomes, as well as cross-border transfers, which may be positive or negative for the external sector, of course (FI^{net}).

The sectoral financial balances of a country should sum up to zero, apart from statistical discrepancies, because a positive financial balance of one sector needs a respective negative financial balance of another sector – a creditor needs a debtor and vice versa:

$$FB_P + FB_G + FB_E = 0. \quad (6)$$

The second step in the determination of demand and growth regimes involves examining the growth contributions of the main demand aggregates. These are the growth contributions of private consumption (C), public consumption (G), as well as private and public investment (I), which sum up to the growth contribution of domestic demand, and finally the growth contribution of the balance of goods and services, i.e. of net exports ($NX = X - M$). The growth contributions of the demand aggregates should sum up to real GDP growth of the respective country:

$$\hat{Y}_t = \frac{dY_t}{Y_{t-1}} = \frac{dC_t}{Y_{t-1}} + \frac{dG_t}{Y_{t-1}} + \frac{dI_t}{Y_{t-1}} + \frac{dNX_t}{Y_{t-1}}. \quad (7)$$

Therefore, looking at these two sets of indicators provides some information on the main sources of demand and growth, on how demand is financed, and countries can be allocated to the regimes applying the criteria summarised in Table 5.

Some recent studies have examined the shift of regimes from the period before the Global Financial Crisis and the Great Recession to the period after these crises for developed capitalist economies.²⁷ The following pattern has been found: most ELM countries before the 2007–2009 crises have maintained this regime or have become WEL in the course of and after the crises, and most WEL regimes before the crises kept this regime or even became ELM. Several DDL economies before the crises moved towards WEL or even ELM regimes after the crises, with a few exceptions. Finally, DLPD countries before the crisis either shifted to WEL or even ELM regimes after the crisis. Alternatively, they turned towards DDL regimes stabilised by high government deficits. This polarisation of post-crises regimes in the developed OECD countries, with ELM or WEL regimes, on the one hand, and DDL regimes stabilised by government deficits, on the other hand, has been accompanied by a tendency of major emerging capitalist economies to remain in DDL or even move towards DLPD regimes (Akçay et al. 2022).

Although very basic, the national income and financial accounting decomposition approach is associated with several important insights for demand and growth regime research. First, it allows for the analysis of the structure of demand dynamics behind output dynamics (or the lack thereof) and to discover related imbalances, both nationally within countries and internationally between countries. Second, it has an eye on financial balances and thus on related debt dynamics, which may not be sustainable and lead to financial crisis, as in 2007–2009. Third, taking these two dimensions together, global or regional imbalances are put into focus. It has been shown that the polarisation of

27. See Dodig et al. (2016), Hein (2019), Dünhaupt/Hein (2019), Hein et al. (2021), and Hein/Martschin (2020). For an overview table, see Akçay et al. (2022) and Hein (2023: ch. 8).

Table 5 Classification of demand-led growth regimes according to sources and financing of demand components

Export-led mercantilist (ELM)	<ul style="list-style-type: none"> • Positive financial balances of the private sector, and the private household sector • Negative financial balances of the external sector • Positive balance of goods and services • Positive growth contributions of net exports
Weakly export-led (WEL)	<p>Either</p> <ul style="list-style-type: none"> • Positive financial balances of the private sector • Negative financial balances of the external sector • Positive balance of goods and services • Negative growth contributions of net exports <p>Or</p> <ul style="list-style-type: none"> • Negative but improving financial balances of domestic sectors • Positive but declining financial balances of external sector • Negative but improving net exports • Positive growth contributions of net exports
Domestic demand-led (DDL)	<ul style="list-style-type: none"> • Positive financial balances of the private household sector and positive or balanced financial balances of the private sector as a whole • Balanced or positive financial balances of the external sector • Growth is almost exclusively driven by domestic demand • Around zero growth contribution of net exports
Debt-led private demand boom (DLPD)	<ul style="list-style-type: none"> • Negative or close to balance financial balances of the private sector • Positive financial balances of the external sector • Significant growth contributions of domestic demand, and private consumption demand in particular • Negative growth contributions of net exports

Source: Based on Dünhaupt/Hein (2019: 458).

current account deficit DLPD and current account surplus ELM economies was associated with rising current account imbalances at the global scale, which has contributed to the severity of the Global Financial Crisis and the Great Recession. Furthermore, it has been pointed out that the post-crises period with the polarisation of DDL regimes, and partly DLPD regimes in emerging capitalist economies, on the one side, and WEL and ELM regimes, on the other side, is still related with considerable global current account imbalances – with severe risks for the global economy (Akçay et al. 2022; Hein 2019). Fourth, the demand and growth regime approach based on the decomposition of national income and financial accounting has been used to link finance-dominated capitalism with the post-crises stagnation tendencies, pointing out that each of the pre- and post-crises regimes in the developed capitalist economies have been profits without

investment regimes with weak capital stock growth and productivity growth – and thus low potential growth (Hein 2019, 2022). Of course, in principle, this approach can be extended to include investment-led regimes, as a version of a DDL regime with high growth contributions of investment in the capital stock, as have been found in the recent decades in some emerging capitalist economies (Mertens et al. 2022).

Although the national income and financial accounting decomposition approach has been developed to distinguish the different types of profits without investment regimes in finance-dominated capitalism, as derived from the Kalecki–Steindl PK demand and growth theory, the approach as such is not limited to a certain theory of growth or of growth drivers. Since it is based on accounting conventions, it is compatible with different theories about the determinants and drivers of demand and growth. However, the authors applying this approach have provided or referred to some empirical indicators for the related growth drivers in their work, like distribution indicators, private household sector indebtedness, share and house price indices, indicators of international competitiveness, as can be seen, for example, already in the initial papers by Hein (2011a, 2011b). These indicators for growth drivers are compatible both with the Kalecki–Steindl and the Sraffian supermultiplier PK demand-led growth theories reviewed in Section 2.

3.3 A Sraffian supermultiplier growth decomposition: distinguishing between autonomous and induced demand dynamics

A step towards a systematic analysis of economic, social, and political growth drivers has been provided by several authors making use of the Sraffian supermultiplier distribution and growth model outlined in Section 2. The empirical analysis thus applies the distinction between autonomous components of aggregate demand – i.e. credit-financed autonomous consumption, residential investment, government expenditures, and exports – and the induced components, i.e. consumption out of income, investment, and imports. GDP growth can then be decomposed into the direct and indirect contributions of the autonomous parts and the contributions of changes in the supermultiplier. Equations (4) or (5) can thus be rewritten and become:

$$\hat{Y}_t = \frac{dY_t}{Y_{t-1}} = \mu_t \frac{dZ_t}{Y_{t-1}} + d\mu_t \frac{Z_t}{Y_{t-1}}, \quad (8)$$

with autonomous demand Z and the multiplier μ defined as in Section 2, and with $dZ_t = dC_{at} + dI_{at} + dG_{at} + dX_{at}$ and $d\mu_t = \frac{\mu_{t-1}(dc_t + d\beta_t - dm_t)}{1 - c_{t-1} - \beta_{t-1} + m_{t-1}}$. Such kind of growth decompositions have been used to explain the political economy of demand and growth dynamics of individual countries over time, like Freitas/Dweck (2013) for Brazil, Girardi/Pariboni (2016) for the USA, and Labat/Summa (2023) for Spain. Comparative multi-country studies have been presented by Morlin et al. (2022) for Germany, Japan, Sweden, and the USA; by Passos/Morlin (2022) for five Latin American countries, Argentina, Bolivia, Brazil, Chile, and Mexico; and by Campana et al. (2023) for Brazil, Russia, India, and China, the BRICs countries, in which also pre- and post-2007–2009 crises periods are distinguished and compared. Some of these studies, like Campana et al. (2023) and Morlin et al. (2022) have also related their results to those of the national income and financial accounting decomposition approach and explained whether shifts of regimes according to the latter approach in the course and after the 2007–2009 crises were due to changes in autonomous expenditures and/or in the component of the supermultiplier.

As pointed out in Section 2, the Sraffian supermultiplier growth decomposition provides the grounds for a systematic inclusion of institutional and power factors which affect the dynamics of the autonomous demand components, but also those of the supermultiplier. Indeed, these studies have found that also in a medium- to long-run perspective, the values of the supermultiplier are not constant and may show some trends driven by changes in income distribution and behaviour parameters. Also, the relative importance of the different components of autonomous demand changes over time, and, of course, varies among countries.

With this kind of analysis, the sources of demand and growth derived from the national income and financial accounting decomposition approach can hence be further decomposed into changes in autonomous and induced demand components – and the economic, social, and political forces behind the changes in demand and growth regimes derived by the basic accounting approach can be traced. We thus view these two approaches as complementary and not as competitive or contradictory.

Furthermore, the studies mentioned above have discussed changes in institutions and power relationship to explain the variations in dynamics of autonomous and induced components of demand for the examined countries, albeit in more or less complete ways, which hence might require extensions. What is missing so far, furthermore, is a larger-scale analysis which allows for exploring differences and similarities among countries and country groups, as well as exploring some regional or global patterns, and relating these to those found by the basic national income and financial accounting decomposition approach, on the one hand, and to economic, social, and political growth drivers, on the other hand.

3.4 Focussing on demand/growth drivers

A third type of PK demand and growth regime studies have, at more concrete level, explicitly focussed on economic, social, and political drivers of demand and growth. Different lenses have been applied in this context.

3.4.1 *The type of redistribution and the presence/absence of relative income concerns for consumption determine the regime*

Behringer/van Treeck (2018, 2019, 2022) have made use of the traditional VoC approach in order to explain debt-led consumption-driven and export-driven regimes, with a focus on the period before the 2007–2009 crises. In their view, it is the type of redistribution, rooted in the institutional structure of an economy, which then determines the demand and growth regime. Coordinated market economies (CMEs), with organised labour markets, relatively strong trade unions, more regulated bank-based financial systems with tighter creditworthiness standards, and an important role of public provision of positional goods (education, health, housing), typically Germany, have seen a fall in the wage share in the context of wage moderation, but only small increases in household income inequality and only slight increases in top income shares, and have generated export-led regimes with current account surpluses. Liberal market economies (LMEs), with flexible labour markets and weak trade unions, more deregulated market-based financial systems with loose creditworthiness standards, little relevance of public provision of positional goods, typically the USA, have seen considerable increases in top income shares, and a more stable functional income distribution, because high management salaries enter into the wage share. They have generated current account deficits and the dominance

of a debt-financed consumption-led regime. The latter is explained by the dominance of relative rather than absolute income concerns for the determination of households' consumption expenditures in LMEs, i.e. 'expenditure cascades' (Frank et al. 2014) in the middle and upper-middle income class, which have been absent in CMEs. This has generated profits without investment regimes (and seemingly profit-led demand regimes) driven by debt-financed consumption expenditures.

Although we see the merits in looking at the type of redistribution in order to explain the different demand regimes and to link this with the social and institutional structures of the economy, we feel that Behringer/van Treeck's (2018, 2019, 2022) line of reasoning is somewhat incomplete and narrow. The inherent instabilities, both within debt-financed consumption and export-led regimes, have received little attention. Endogenous collapses of and changes in regimes have not been considered. Furthermore, while Behringer/van Treeck (2018, 2022) provide panel econometric support for their main claims, estimating current account equations and equations for the private household sector financial balances, other PK authors did not find support for direct effects of personal income inequality on private consumption or on household debt (Moore/Stockhammer 2018; Stockhammer/Wildauer 2016, 2018).

3.4.2 FDI- and tax competition-led growth regimes and strategies in commercialised states

Another lens assessing, in particular, growth drivers and growth strategies of small open economies, exposed to foreign direct investment (FDI) inflows, profit shifting of multinational corporations (MNCs), and tax competition of 'commercialised states', like Ireland, has been proposed by Woodgate (2020, 2021).²⁸ Woodgate (2021), making use of a simple demand-led model driven by autonomous expenditures, shows that foreign-targeted state aid (i.e. lower tax rates or subsidies for MNCs) may lead to a kind of beggar-thy-neighbour, 'FDI-led demand and growth regime' in a single economy under certain conditions. In particular, there has to be little policy competition from other countries. Therefore, such regimes seem to be exceptional cases, mainly in those countries and special economic zones that apply state aid in order to attract MNCs first, benefitting from first mover advantages. State aid for the attraction of MNCs is thus unlikely to be an effective growth strategy under the conditions of intense state competition for MNCs. Woodgate (2020) makes a similar argument, introducing the notion of a 'tax-competition-led demand and growth regime'. In theory, an economy can be tax-competition-led, when lowering the effective corporate tax rate increases demand through higher MNC investment over-compensating for the negative effects of lower tax revenues on government expenditures. Again, a tax-competition-led regime suffers from a fallacy of composition: if applied by only a single country, it may stimulate growth in that country, but applied by several countries, it will lead to a race to the bottom, undermining demand and growth in all the countries involved. We will thus see a 'paradox of tax competition'. In his latest contribution, Woodgate (2023b) distinguishes different types of FDI-led growth regimes, an 'export platform FDI-led regime' and a 'tax-haven FDI-led regime', and he provides empirical indicators for both. Woodgate's contributions amend the PK demand-led growth approaches by a theory – and by empirical applications – of production location

28. Woodgate (2022) also shows that for such economies dominated by MNEs and FDI, like Ireland, national income and financial accounting data may give misleading results when used for wage-/profit-led demand and growth regime estimations or for identifying DLPD, DDL, WEL, or ELM regimes.

(see also Woodgate 2023a). This seems to be relevant in particular for the assessment of demand and growth regimes of small open economies, dominated by FDI inflows and MNCs' profit shifting.

3.4.3 *Regime shifts and growth drivers*

As pointed out above, the authors making use of the national income and financial accounting decomposition approach have usually embedded this approach into the consideration of growth drivers, too, looking at income distribution, housing and financial asset prices, private households' debt-income ratios, international competitiveness indicators, etc. This is also true for those studies concerned with the regime shifts in the course of and after the 2007–2009 crises. Hein (2019), Hein/Martschin (2020), and Hein et al. (2021) argue that the type of shift of the previously DLPD economies has depended, on the one hand, on the requirements of private sector deleveraging after the financial crisis, and, on the other hand, on the ability and willingness to run deficit-financed and stabilising fiscal policies. Hein et al. (2021) also relate these shifts of macroeconomic regimes to the welfare models approach based on Esping-Andersen (1990) and Hay/Wincott (2012). According to these contributions to the analysis of regime shifts, the institutional constraints imposed on national fiscal policies in the Eurozone, the absence of relevant fiscal policies at the Eurozone level, and the turn towards austerity policies when the Eurozone crisis started in 2010, including substantial downsizing of welfare provision in some crisis countries, explain to a large extent, why in particular European DLPD countries turned WEL or ELM after the Global Financial Crisis and the Great Recession. The collapse of domestic demand caused by the requirements for the private sectors to deleverage was reinforced by austerity policies of the public sector, which made imports collapse, net exports rise, and the current account in these countries improve, and in several cases even turn positive. DLPD countries that were able to make use of expansionary deficit-financed fiscal policies before the crisis, in particular the UK and the USA, however, compensated private deleveraging by rising public deficits. This turn towards a DDL regime has stabilised aggregate demand in their countries, and through the import channel, also in the global economy.²⁹

Kohler/Stockhammer (2022) provide a more systematic cross-country analysis of the underlying growth drivers before and after the 2007–2009 crises in 30 OECD countries. To explain the emergence of the post-crises patterns, they consider the requirements of deleveraging in the context of a financial boom–bust cycle, the role of fiscal policies and the relevance of price and non-price competitiveness for exports. Generalising the claims being made in Hein (2019), Hein/Martschin (2020), and Hein et al. (2021), they find that the former two drivers have had a major role to play, i.e. the need for deleveraging generated by high private debt and the (lack of) expansionary deficit-financed fiscal policies. They also find that differences and changes in international price competitiveness are not systematically related to growth performance and thus have been overstated in some of the previous CPE literature on macroeconomic regimes. Since they assume that the regime distinction in the national income and financial accounting decomposition approach is referring to growth drivers, they abandon this regime distinction, which had been developed for the pre-crisis period, and rather focus on the distinction of the different growth drivers for the clustering of countries in the post-crises period.

29. See Hein (2023: ch. 8) for modelling these regime shifts in making use of a small-scale analytical Kaleckian distribution and growth model. For regime shifts in stock-flow consistent numerical simulation models see, for example, Prante et al. (2022).

Jungmann (2023) has extended and applied the growth driver approach by Kohler/Stockhammer (2022) to a set of 19 emerging capitalist economies, including indicators for income distribution, FDI as well as commodity price dynamics as further determinants of GDP growth. Non-price competitiveness is found to have been a significant driver. Furthermore, private debt and expansionary fiscal policy has become more important for growth after the 2007-09 crises in these countries. This seems to be in line with the findings of Akcay et al. (2022) regarding the different pattern of regime changes of emerging capitalist economies as compared to advanced capitalist economies referred to above.

While the selection of potential growth drivers by Kohler/Stockhammer (2022) and Jungmann (2023) can surely be justified on PK theoretical grounds, they can hardly be considered to be comprehensive, neither from a Kalecki–Steindl nor from a Sraffian super-multiplier growth theory perspective. The approach could thus be expanded and include a set of further potential growth drivers consistent with these variants of PK distribution and growth theory. This could include a systematic inclusion of autonomous growth drivers, like non-cyclical government expenditure growth and income growth of the main trading partners of the countries under examination affecting export growth, the development of asset prices and the degree of regulation of the financial sector affecting the potential for debt-financed consumption and residential investment, as well as considering the full macroeconomic policy mix affecting aggregate demand and growth dynamics.

3.4.4 Macroeconomic policy regimes and demand and growth regimes

Hein/Martschin (2021) focus on macroeconomic policies as growth drivers and keep the typology for macroeconomic regimes in finance-dominated capitalism, based on the national income and financial accounting decomposition approach. In an attempt at understanding the role of macroeconomic policies for regime shifts of the big four Eurozone countries, Germany, France, Italy and Spain, and extending the policy dimension of the research by Kohler/Stockhammer (2022), they link this approach with the PK notion of ‘macroeconomic policy regimes’ developed and applied in the early 2000s (Hein/Truger 2005, 2009; Herr/Kazandziska 2011).³⁰

The concept of a macroeconomic policy regime has been used to assess international and intertemporal comparative differences in macroeconomic performances of countries or regions. It describes the set of monetary, fiscal, and wage or income policies, as well as their coordination and interaction, against the institutional background of a specific economy, including the degree of openness and the exchange rate regime. This concept supposes that macroeconomic policies and aggregate demand not only have short-run effects on economic performance, as in the NCM, but also have a long-run impact on output, income, employment, inflation, distribution, and growth, through various channels, as in the PK distribution and growth models presented in Section 2. The PK macroeconomic policy mix proposed by Hein (2023: ch. 6) and Hein/Stockhammer (2010), based on Kalecki–Steindl PK models, is used as a benchmark supporting a stable DDL regime, whereas deviations from this benchmark contribute to moving to the long-run unstable DLPD or ELM regimes with detrimental long-run effects on macroeconomic performance.

For assessing the effect of monetary policies of the central bank, the focus is on the relationship between long-term real interest rates and real GDP growth, assuming that a long-term rate of interest lower than GDP growth should support growth. Wage policies

30. Herr/Priewe (2005), Kazandziska (2019), and Priewe/Herr (2005) have extended this approach to emerging capitalist economies, including further features, like the financial system or industrial policies.

conducive to a stable DDL regime would have to stabilise the inflation rate, as well as functional income distribution. Therefore, it is checked whether unit labour costs have grown at the target rate of inflation, the ECB target rate for the Eurozone as a whole. Furthermore, also changes in functional income distribution, i.e. in the labour income share, are considered. For the assessment of the effects of wage policies via functional income distribution, the type of distribution-led demand and growth regime is considered. For fiscal policy, which should stabilise aggregate demand at non-inflationary full employment in a stable DDL regime, Hein/Martschin (2021) use the changes of the cyclically adjusted budget balance–potential GDP ratio of the government and relate this to the change in the output gap to assess the short-run discretionary responsiveness of fiscal policies. Furthermore, the share of public investment in GDP as an indicator for the growth orientation of fiscal policies is considered. Finally, Hein/Martschin (2021) also consider the open economy conditions, since they have an impact on the effectiveness of domestic macroeconomic policies, on the one hand, and also directly affect the demand and growth regime, as explained in Section 2. They look at the degree of openness measured by export and import shares of GDP, the development of price competitiveness, measured by real effective exchange rates, as well as an economic complexity index as indicator for non-price competitiveness.

Applying these indicators, Hein/Martschin (2021) show how the macroeconomic policy regimes in the four Eurozone countries, Germany, France, Italy, and Spain, have contributed to the respective demand and growth regimes before and after the 2007–2009 crises. Ianni (2023) provides a similar analysis for Argentina, Klassen (2023) for Canada, and Kühnast (2023) for Hungary and Poland. A larger-scale analysis that allows for exploring differences and similarities among countries and country groups regarding the effects of the macroeconomic policy regimes on the demand and growth regimes, as well as exploring some regional or global patterns, is missing so far.

3.5 Links between the different levels of PK comparative demand and growth regime analysis

We would argue that these three levels of analysis presented in this section, the national income and financial accounting as well as the Sraffian supermultiplier growth accounting decomposition approaches and the different lenses of looking at growth drivers, in principle, are not mutually exclusive or even contradictory, but that they rather complement each other. Both the national income and financial accounting decomposition and the Sraffian supermultiplier growth decomposition approaches as such do not include an analysis of growth drivers and can thus be linked with the different types of growth driver lenses. For the latter, on the one hand, some more model-guided and comprehensive approaches would be helpful, as would be more multi-country analyses to detect regional and global patterns, for instance. On the other hand, the applied growth driver lens may depend on the research question at hand and narrow approaches may thus be justified, too. However, they should be based on the more basic income and financial accounting decomposition approaches to avoid unnecessary accounting inconsistencies.

4 CONCLUSIONS

In this paper we have reviewed PK contributions to demand and growth regime analysis. We have distinguished the Kalecki–Steindl and the Sraffian supermultiplier approaches as relevant theoretical model foundations for demand and growth regime research. In the

Kalecki–Steindl theories, demand and growth are investment-driven and distribution-led in several respects. However, autonomous sources of demand and growth also play a role. We have outlined the distinction between wage-/profit-led (and ‘seemingly’ profit-led) demand and growth regimes, as well as wage-/profit-led productivity and overall growth regimes. Explicitly integrating credit and finance, normal/puzzling cases with respect to interest rate changes have been distinguished, and with respect to shareholder power, finance-led/finance-burdened demand and growth regimes, with the profits without investment regime as an important intermediate regime. In the Sraffian supermultiplier theories, long-run growth is driven by autonomous growth of non-capacity creating components of aggregate demand, i.e. autonomous consumption, residential investment, government expenditures and/or exports. Investment dynamics and changes in distribution may only affect short-run demand and output and thus the traverse towards the long-run growth equilibrium and hence the growth path. We have argued that although there are substantial differences between both approaches regarding the determination of long-run equilibrium growth, when it comes to assessing out of equilibrium growth episodes, these approaches have a lot in common and can be used as macroeconomic foundations for the analysis of demand and growth regimes and the drivers of these regimes.

Based on these theoretical foundations, we have reviewed different ways of historical empirical analyses of the co-existence of different demand and growth regimes in the current period of finance-dominated capitalism. We have distinguished, first, a basic national income and financial accounting decomposition approach; second, a Sraffian supermultiplier inspired growth decomposition approach focussing on autonomous and induced components of demand; and third, several lenses of looking at growth drivers, i.e. the type of re-distribution and the relevance of relative income effects on consumption, FDI and tax competition, requirements of deleveraging in the context of a financial boom–bust cycles, the role of fiscal policies and the relevance of price and non-price competitiveness for exports, amended by redistribution trends and commodity price cycles, and finally the full macroeconomic policy regime, i.e. the stance of monetary, fiscal, and wage/incomes policies, their interaction and the international environment.

We have argued that these three levels of analysis are, in principle, not mutually exclusive or even contradictory, but that they rather complement each other. Both the national income and financial accounting and the Sraffian supermultiplier growth decomposition approaches as such do not include an analysis of growth drivers and can thus be linked with different lenses of looking at growth drivers. For the latter, on the one hand, some more model-guided and comprehensive approaches, based on the demand and growth determinants included into the behavioural functions of the Kalecki–Steindl or the Sraffian supermultiplier models would be helpful, as would be more multi-country analyses to detect regional and global patterns, for instance. On the other hand, the applied growth driver lens may depend on the research question at hand and narrow approaches may thus be justified, too. The PK analysis of growth drivers provides several links for CPE and IPE approaches, when it comes to the introduction of the political economy dimension, like social blocs, growth coalitions, changes in institutions favouring certain type of redistribution, economic policies and growth strategies, etc. (Amable 2016, 2018; Baccaro/Pontusson 2019, 2022), while the national income and financial accounting, as well as the Sraffian supermultiplier growth accounting decomposition approaches provide the consistent macroeconomic foundations for such synthetic approaches.³¹

31. See Akcay/Jungmann (2023), Campana et al. (2023), Kühnast (2023), Mertens et al. (2022), and Stockhammer et al. (2016) as some recent examples for such cross-over work of PKE and CPE/IPE.

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REFERENCES

- Aglietta, M. (1976): *Régulation et crises du capitalisme. L'expériences des Etats-Unis*, Paris: Calmann-Lévy, English translation, *A Theory of Capitalist Regulation: the US Experience*, London: Verso, 2001.
- Akcay, Ü., Hein, E., Jungmann, B. (2022): Financialisation and macroeconomic regimes in emerging capitalist countries before and after the Great Recession, in: *International Journal of Political Economy*, 51(2), 77–100.
- Akcay, Ü., Jungmann, B. (2023): Political economy of growth regimes in Poland and Turkey, in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejep.2023.0123>.
- Allain, O. (2022): A supermultiplier model with two non-capacity-generating semi-autonomous demand components, in: *Structural Change and Economic Dynamics*, 63, 91–103.
- Amable, B. (2016): Institutional complementarities in the dynamic comparative analysis of capitalism, in: *Journal of Institutional Economics*, 12(1), 79–103.
- Amable, B. (2018): Diversity and the dynamics of capitalism, in: *European Journal of Economics and Economics Policies: Intervention*, 15(2), 238–248.
- Baccaro, L., Pontusson, J. (2016): Rethinking comparative political economy: the growth model perspective, in: *Politics & Society*, 44(2), 175–207.
- Baccaro, L., Pontusson, J. (2018): Comparative political economy and varieties of macroeconomics, MPIfG Discussion Paper 18/10, Max Planck Institute for the Study of Societies, Cologne.
- Baccaro, L., Pontusson, J. (2019): Social blocs and growth models: an analytical framework with Germany and Sweden as illustrative cases, *Unequal Democracies*, Working Paper No. 7, Department of Political Science and International Relations, University of Geneva.
- Baccaro, L., Pontusson, J. (2022): The politics of growth models, in: *Review of Keynesian Economics*, 10(2), 204–221.
- Barba, A., M. Pivetti (2009): Rising household debt: its causes and macroeconomic implications—a long-period analysis, in: *Cambridge Journal of Economics*, 33(1), 113–137.
- Behringer, J., van Treeck, T. (2018): Income distribution and the current account, in: *Journal of International Economics*, 114(C), 238–254.
- Behringer, J., van Treeck, T. (2019): Income distribution and growth models: a sectoral balances approach, in: *Politics & Society*, 47(3), 303–332.
- Behringer, J., van Treeck, T. (2022): Varieties of capitalism and growth regimes: the role of income distribution, in: *Socio-Economic Review*, 20(3), 1249–1286.
- Belabed, C., Theobald, T., van Treeck, T. (2018): Income distribution and current account imbalances, in: *Cambridge Journal of Economics*, 42(1), 47–94.
- Bhaduri, A., Marglin, S. (1990): Unemployment and the real wage: the economic basis for contesting political ideologies, in: *Cambridge Journal of Economics*, 14(4), 375–393.
- Bhaduri, A., Steindl, J. (1985): Monetarism as a social doctrine, in: Arestis, P., Skouras, T. (eds.), *Post-Keynesian Economic Theory*, Sussex: Wheatsheaf.
- Blecker, R.A. (1989): International competition, income distribution and economic growth, in: *Cambridge Journal of Economics*, 13(3), 395–412.
- Blecker, R.A. (2016): Wage-led versus profit-led demand regimes: the long and the short of it, in: *Review of Keynesian Economics*, 4(4), 373–390.
- Blecker, R.A., Setterfield, M. (2019): *Heterodox Macroeconomics: Models of Demand, Distribution and Growth*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.

- Blyth, M., Matthijs, M. (2017): Black swans, lame ducks, and the mystery of IPE's missing macro-economy, in: *Review of International Political Economy*, 24(2), 203–231.
- Bowles, S., Boyer, R. (1995): Wages, aggregate demand, and employment in an open economy: an empirical investigation, in: Epstein, G.A., Gintis, H.M. (eds), *Macroeconomic Policy after the Conservative Era*, Cambridge, UK: Cambridge University Press.
- Boyer, R. (2000): Is a finance-led growth regime a viable alternative to Fordism? A preliminary analysis, in: *Economy and Society*, 29, 111–145.
- Campana, J., Embova Vaz, J., Hein, E., Jungmann, B. (2023): Demand and growth regimes of the BRICs countries – the national income and financial accounting decomposition approach and an autonomous demand-led growth perspective, in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejeep.2023.0100>.
- Carlin, W., Soskice, D. (2009): Teaching intermediate macroeconomics using the 3-equation model, in: Fontana, G., Setterfield, M. (eds.), *Macroeconomic Theory and Macroeconomic Pedagogy*, Basingstoke, UK: Palgrave Macmillan.
- Carlin, W., Soskice, D. (2015): *Macroeconomics: Institutions, Instability, and the Financial System*, Oxford, UK: Oxford University Press.
- Cordonnier, L. (2006): Le profit sans l'accumulation: la recette du capitalisme dominé par la finance, in: *Innovations: Cahiers d'Economie de l'Innovation*, 23, 51–72.
- Cornwall, J., Cornwall, W. (2001): *Capitalist Development in the Twentieth Century. An Evolutionary-Keynesian Analysis*, Cambridge, UK: Cambridge University Press.
- Cynamon, B.Z., Fazzari, S.M. (2008): Household debt in the consumer age: source of growth – risk of collapse, in: *Capitalism and Society*, 3(2), 1–30.
- Dallery, T. (2009): Post-Keynesian theories of the firm under financialization, in: *Review of Radical Political Economics*, 41(4), 492–515.
- Davis, L.E. (2017): Financialization and investment: a survey of the empirical literature, in: *Journal of Economic Surveys*, 31(5), 1332–1358.
- Detzer, D. (2018): Inequality, emulation and debt: the occurrence of different growth regimes in the age of financialisation in a stock-flow consistent model, in: *Journal of Post Keynesian Economics*, 41(2), 284–315.
- Dodig, N., Hein, E., Detzer, D. (2016): Financialisation and the financial and economic crises: theoretical framework and empirical analysis for 15 countries, in: Hein, E., Detzer, D., Dodig, N. (eds.), *Financialisation and the Financial and Economic Crises: Country Studies*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Duesenberry, J.S. (1949): *Income, Saving and the Theory of Consumer Behavior*, Cambridge, Mass.: Harvard University Press.
- Dünhaupt, P. (2017): Determinants of labour's income share in the era of financialisation, in: *Cambridge Journal of Economics*, 41(1), 283–306.
- Dünhaupt, P., Hein, E. (2019): Financialisation, distribution, and macroeconomic regimes before and after the crisis: a post-Keynesian view on Denmark, Estonia, and Latvia, in: *Journal of Baltic Studies*, 50(4), 435–465.
- Dutt, A.K. (1984): Stagnation, income distribution and monopoly power, in: *Cambridge Journal of Economics*, 8(1), 25–40.
- Dutt, A.K. (1987): Alternative closures again: a comment on 'Growth, distribution and inflation', in: *Cambridge Journal of Economics*, 11(1), 75–82.
- Dutt, A.K. (2006): Aggregate demand, aggregate supply and economic growth, in: *International Review of Applied Economics*, 20, 319–336.
- Dutt, A.K. (2012): Distributional dynamics in Post Keynesian growth models, in: *Journal of Post Keynesian Economics*, 34(3), 431–451.
- Esping-Andersen, G. (1990): *The Three Worlds of Welfare Capitalism*, Cambridge, UK: Polity Press.
- Frank, R.H., Levine A.S., Dijk, O. (2014): Expenditure cascades, in: *Review of Behavioral Economics*, 1(1–2), 55–73.
- Franke, R. (2016): A supplementary note on Professor Hein's (2013) version of a Kaleckian debt accumulation, in: *Metroeconomica*, 67, 529–550.
- Franke, R. (2020): An attempt at a reconciliation of the Sraffian and Kaleckian views on desired utilization, in: *European Journal of Economics and Economic Policies: Intervention*, 17(1), 61–77.

- Freitas, F., Christianes, R. (2020): A baseline supermultiplier model for the analysis of fiscal policy and government debt, in: *Review of Keynesian Economics*, 8(3), 313–338.
- Freitas, F., Dweck, E. (2013): The pattern of economic growth of the Brazilian economy 1970–2005: a demand-led growth perspective, in: Levrero, S., Palumbo, A., Stirati, A. (eds), *Sraffa and the Reconstruction of Economic Theory: Volume Two*, Basingstoke, London: Palgrave Macmillan.
- Freitas, F., Serrano, F. (2015): Growth rate and level effects, the stability of the adjustment of capacity to demand and the Sraffian supermultiplier, in: *Review of Political Economy*, 27(3), 258–281.
- Freitas, F., Serrano, F. (2017): The Sraffian supermultiplier as an alternative closure for heterodox growth theory, in: *European Journal of Economics and Economic Policies: Intervention*, 14(1), 70–91.
- Girardi, D., Pariboni, R. (2016): Long-run effective demand in the US economy: an empirical test of the Sraffian supermultiplier model, in: *Review of Political Economy*, 28(4), 523–544.
- Girardi, D., Pariboni, R. (2019): Normal utilisation as the adjusting variable in neo-Kaleckian growth models: a critique, in: *Metroeconomica*, 70, 341–358.
- Gordon, D., Weisskopf, T. E., Bowles, S. (1987): Power, accumulation and crisis: the rise and demise of the postwar social structure of accumulation, in: Cherry, R. (ed.), *The Imperiled Economy*, Book I, New York: The Union for Radical Political Economics (URPE).
- Guttmann, R (2016): *Finance-led Capitalism: Shadow Banking, Re-Regulation, and the Future of Global Markets*, Basingstoke: Palgrave Macmillan.
- Guttmann, R., Plihon, D. (2010): Consumer debt and financial fragility, in: *International Review of Applied Economics*, 24(3), 269–283.
- Hall, P.A., Soskice, D. (2001): *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford, UK: Oxford University Press.
- Hartwig, J. (2013): Distribution and growth in demand and productivity in Switzerland (1950–2010), in: *Applied Economics Letters*, 20(10), 938–944.
- Hartwig, J. (2014): Testing the Bhaduri–Marglin model with OECD panel data, in: *International Review of Applied Economics*, 28(4), 419–435.
- Hay, C., Wincott, D. (2012): *The Political Economy of European Welfare Capitalism*, Basingstoke: Palgrave Macmillan.
- Hein, E. (2007): Interest rate, debt, distribution and capital accumulation in a post-Kaleckian model, in: *Metroeconomica*, 58(2), 310–339.
- Hein, E. (2008): *Money, Distribution Conflict and Capital Accumulation: Contributions to 'Monetary Analysis'*, Basingstoke, UK: Palgrave Macmillan.
- Hein, E. (2010): Shareholder value orientation, distribution and growth – short- and medium-run effects in a Kaleckian model, in: *Metroeconomica*, 61(2), 302–332.
- Hein, E. (2011a): Redistribution, global imbalances and the financial and economic crisis – the case for a Keynesian New Deal, in: *International Journal of Labour Research*, 3(1), 51–73.
- Hein, E. (2011b): Financialisation, re-distribution, and the financial and economic crisis – a Kaleckian perspective, in: Niechoj, T., Onaran, Ö., Stockhammer, E., Truger, A., van Treeck, T. (eds.), *Stabilising an Unequal Economy? Public Debt, Financial Regulation, and Income Distribution*, Marburg: Metropolis.
- Hein, E. (2012): *The Macroeconomics of Finance-dominated Capitalism – and Its Crisis*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Hein, E. (2013): On the importance of the retention ratio in a Kaleckian distribution and growth model with debt accumulation: a comment on Sasaki and Fujita (2012), in: *Metroeconomica*, 64, 186–196.
- Hein, E. (2013/14): The crisis of finance-dominated capitalism in the euro area, deficiencies in the economic policy architecture and deflationary stagnation policies, in: *Journal of Post Keynesian Economics*, 36(2), 325–354.
- Hein, E. (2014): *Distribution and Growth after Keynes: A Post-Keynesian Guide*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Hein, E. (2015): Finance-dominated capitalism and re-distribution of income – a Kaleckian perspective, in: *Cambridge Journal of Economics*, 39(3), 907–934.

- Hein, E. (2017a): Post-Keynesian macroeconomics since the mid-1990s – main developments, in: *European Journal of Economics and Economic Policies: Intervention*, 14(2), 131–172.
- Hein, E. (2017b): The Bhaduri/Marglin post-Kaleckian model in the history of distribution and growth theories – an assessment by means of model closures, in: *Review of Keynesian Economics*, 5(2), 218–238.
- Hein, E. (2019): Financialisation and tendencies towards stagnation: the role of macroeconomic regime changes in the course of and after the financial and economic crisis 2007–9, in: *Cambridge Journal of Economics*, 43(4), 975–999.
- Hein, E. (2020): Gender issues in Kaleckian distribution and growth models: on the macroeconomics of the gender wage gap, in: *Review of Political Economy*, 32(4), 640–664.
- Hein, E. (2022): Financialisation and stagnation – a macroeconomic regime perspective, in: Wray, L. R., Dantas, F. (eds), *The Handbook of Economic Stagnation*, London: Academic Press, Elsevier.
- Hein, E. (2023): *Macroeconomics after Kalecki and Keynes: Post-Keynesian Foundations*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Hein, E., Martschin, J. (2020): The Eurozone in crisis – a Kaleckian macroeconomic regime and policy perspective, in: *Review of Political Economy*, 32(4), 563–588.
- Hein, E., Martschin, J. (2021): Demand and growth regimes in finance-dominated capitalism and the role of the macroeconomic policy regime: a post-Keynesian comparative study on France, Germany, Italy and Spain before and after the Great Financial Crisis and the Great Recession, in: *Review of Evolutionary Political Economy*, 2(3), 493–527.
- Hein, E., Mundt, M. (2012): Financialisation and the requirements and potentials for wage-led recovery – a review focussing on the G20, Conditions of Work and Employment Series No. 37, Geneva: ILO.
- Hein, E., Mundt, M. (2013): Financialisation, the financial and economic crisis, and the requirements and potentials for wage-led recovery, in: Lavoie, M., Stockhammer, E. (eds), *Wage-led Growth: An Equitable Strategy for Economic Recovery*, Basingstoke; London: Palgrave Macmillan.
- Hein, E., Prante, F.J. (2020): Functional distribution and wage inequality in recent Kaleckian growth models, in: Bougrine, H., Rochon, L.-P. (eds), *Economic Growth and Macroeconomic Stabilization Policies in Post-Keynesian Economics: Essays in Honour of Marc Lavoie and Mario Seccareccia, Book Two*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Hein, E., Schoder, C. (2011): Interest rates, distribution and capital accumulation – a post-Kaleckian perspective on the US and Germany, in: *International Review of Applied Economics*, 25(6), 693–723.
- Hein, E., Stockhammer, E. (2010): Macroeconomic policy mix, employment and inflation in a post-Keynesian alternative to the New Consensus model, in: *Review of Political Economy*, 22(3), 317–354.
- Hein, E., Tarassow, A. (2010): Distribution, aggregate demand and productivity growth – theory and empirical results for six OECD countries based on a post-Kaleckian model, in: *Cambridge Journal of Economics*, 34(4), 727–754.
- Hein, E., Truger, A. (2005): What ever happened to Germany? Is the decline of the former European key currency country caused by structural sclerosis or by macroeconomic mismanagement?, in: *International Review of Applied Economics*, 19(1), 3–28.
- Hein, E., Truger, A. (2009): How to fight (or not to fight) a slowdown, in: *Challenge: The Magazine of Economic Affairs*, 52(2), 52–75.
- Hein, E., van Treeck, T. (2010a): 'Financialisation' in post-Keynesian models of distribution and growth – a systematic review', in: Setterfield, M. (ed.), *Handbook of Alternative Theories of Economic Growth*, Cheltenham, UK, and Northampton, MA: Edward Elgar.
- Hein, E., van Treeck, T. (2010b): Financialisation and rising shareholder power in Kaleckian/post-Kaleckian models of distribution and growth, in: *Review of Political Economy*, 22(2), 205–233.
- Hein, E., Woodgate, R. (2021): Stability issues in Kaleckian models driven by autonomous demand growth – Harrodian instability and debt dynamics, in: *Metroeconomica*, 72(2), 388–404.
- Hein, E., Lavoie, M., van Treeck, T. (2011): Some instability puzzles in Kaleckian models of growth and distribution: a critical survey, in: *Cambridge Journal of Economics*, 35(3), 587–612.

- Hein, E., Lavoie, M., van Treeck, T. (2012a): Harrodian instability and the ‘normal rate’ of capacity utilisation in Kaleckian models of distribution and growth – a survey, in: *Metroeconomica*, 63(1), 139–169.
- Hein, E., Truger, A., van Treeck, T. (2012b): The European financial and economic crisis: alternative solutions from a (post-)Keynesian perspective, in: Arestis, P., Sawyer, M. (eds), *The Euro Crisis*, Basingstoke, UK: Palgrave Macmillan.
- Hein, E., Dodig, N., Budyldina, N. (2015a): The transition towards finance-dominated capitalism: French Regulation School, Social Structures of Accumulation and post-Keynesian approaches compared, in: Hein, E., Detzer, D., Dodig, N. (eds.), *The Demise of Finance-dominated Capitalism: Explaining the Financial and Economic Crises*, Cheltenham, UK, and Northampton, MA: Edward Elgar,
- Hein, E., Detzer, D., Dodig, N. (eds.) (2015b): *The Demise of Finance-dominated Capitalism: Explaining the Financial and Economic Crises*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Hein, E., Detzer, D., Dodig, N. (eds.) (2016): *Financialisation and the Financial and Economic Crises: Country Studies*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Hein, E., Dünhaupt, P., Alfageme, A., Kulesza, M. (2017a): Financialisation and distribution before and after the crisis: patterns for six OECD countries, in: Arestis, P., Sawyer, M. (eds.), *Economic Policies since the Global Financial Crisis. International Papers in Political Economy*, Basingstoke: Palgrave Macmillan.
- Hein, E., Dünhaupt, P., Kulesza, M., Alfageme, A. (2017b): Financialisation and distribution from a Kaleckian perspective: the US, the UK and Sweden compared – before and after the crisis, in: *International Journal of Political Economy*, 46(4), 233–266.
- Hein, E., Dünhaupt, P., Alfageme, A., Kulesza, M. (2018): A Kaleckian perspective on financialisation and distribution in three main Eurozone countries before and after the crisis: France, Germany and Spain, in: *Review of Political Economy*, 30(1), 41–71.
- Hein, E., Paternesi Meloni, W., Tridico, P. (2021): Welfare models and demand-led growth regimes before and after the financial and economic crisis, in: *Review of International Political Economy*, 28(5), 1196–1223.
- Herr, H., Kazandziska, M. (2011): *Macroeconomic Policy Regimes in Western Industrial Countries*, London: Routledge.
- Herr, H., Priewe, J. (2005): Beyond the ‘Washington Consensus’: macroeconomic policies for development, in: *Internationale Politik und Gesellschaft*, 2(1), 72–97.
- Ianni, J. (2023): Macroeconomic policy regimes and demand and growth regimes in emerging markets: the case of Argentina, in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejeep.2023.0113>.
- Jungmann, B. (2023): Growth drivers in emerging capitalist economies: building blocks for a post-Keynesian analysis and an empirical exploration of the years before and after the Global Financial Crisis, in: *Review of Evolutionary Political Economy*, advance access, doi: <https://doi.org/10.1007/s43253-023-00101-1>.
- Kaldor, N. (1955/56): Alternative theories of distribution, in: *Review of Economic Studies*, 23(2), 83–100. (Reprinted in: Kaldor, N. (1980), *Collected Economic Essays, Vol. 1: Essays on Value and Distribution*, 2nd edn, London: Duckworth.)
- Kaldor, N. (1957): A model of economic growth, in: *The Economic Journal*, 67(268), 591–624. (Reprinted in Kaldor, N. (1960): *Collected Economic Essays, Vol. 2: Essays on Economic Stability and Growth*, London: Duckworth.)
- Kaldor, N. (1966): *Causes of the Slow Rate of Economic Growth in the United Kingdom*, Cambridge, UK: Cambridge University Press. (Reprinted in: Kaldor, N. (1978), *Collected Economic Essays, Vol. 5: Further Essays on Economic Theory*, London: Duckworth.)
- Kalecki, M. (1937): The principle of increasing risk, in: *Economica*, 4(16), 440–447.
- Kalecki, M. (1943a): Political aspects of full employment, in: *Political Quarterly*, 14(4), 322–331. (Reprinted in: Osiatynski, J. (ed.) (1990), *Collected Works of Michal Kalecki, Vol. I: Capitalism: Business Cycles and Full Employment*, Oxford: Clarendon Press.)
- Kalecki, M. (1943b): *Studies in Economic Dynamics*, London: Allen and Unwin. (Reprinted in: Osiatynski, J. (ed.) (1991), *Collected Works of Michal Kalecki, Vol. II: Capitalism: Economic Dynamics*, Oxford: Clarendon Press.)

- Kalecki, M. (1954): *Theory of Economic Dynamics: An Essay on Cyclical and Long-run Changes in Capitalist Economy*, London: Allen and Unwin. (Reprinted in: Osiatynski, J. (ed.) (1991), *Collected Works of Michal Kalecki, Vol. II: Capitalism: Economic Dynamics*, Oxford: Clarendon Press.)
- Kalecki, M. (1971): *Selected Essays on the Dynamics of the Capitalist Economy, 1933–1970*, Cambridge: Cambridge University Press.
- Kapeller, J., Schütz, B. (2014): Debt, boom, bust: a theory of Minsky–Veblen cycles, in: *Journal of Post Keynesian Economics*, 36(4), 781–814.
- Kapeller, J., Schütz, B. (2015): Conspicuous consumption, inequality and debt: the nature of consumption driven profit-led regimes, in: *Metroeconomica*, 66(1), 51–70.
- Kazandziska, M. (2019): *Macroeconomic Policy Regimes in Emerging Countries: The Case of Central Eastern Europe*, Marburg: Metropolis.
- Keynes, J.M. (1936): *The General Theory of Employment, Interest, and Money*, in: *The Collected Writings of J.M. Keynes*, Volume VII, London: Macmillan, 1973.
- Kim, Y.K. (2013): Household debt, financialization, and macroeconomic performance in the United States, 1951–2009, in: *Journal of Post Keynesian Economics*, 35(4), 675–694.
- Kim, Y.K. (2016): Macroeconomic effects of household debt: an empirical analysis, in: *Review of Keynesian Economics*, 4(2), 127–150.
- Kim, Y.K., Setterfield, M., Mei, Y. (2015): Aggregate consumption and debt accumulation: an empirical examination of US household behaviour, in: *Cambridge Journal of Economics*, 39(1), 93–112.
- Klassen, T. (2023): Demand, growth, and the macroeconomic policy regime: Canada’s transition from export-led to debt-led private demand growth, in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejeep.2023.0114>.
- Kohler, K., Stockhammer, E. (2022): Growing differently? Financial cycles, austerity, and competitiveness in growth models since the Global Financial Crisis, in: *Review of International Political Economy*, 29(4), 1314–1341.
- Kohler, K., Guschanski, A., Stockhammer, E. (2019): The impact of financialisation on the wage share: a theoretical clarification and empirical test, in: *Cambridge Journal of Economics*, 43(4), 937–974.
- Kühnast, J. (2023): Growth regimes of populist governments: a comparative study on Hungary and Poland, in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejeep.2023.0104>.
- Kurz, H.D. (1990): Technical change, growth and distribution: a steady-state approach to ‘unsteady’ growth, in: Kurz, H.D., *Capital, Distribution and Effective Demand*, Cambridge, UK: Polity Press.
- Labat, H., Summa, R. (2023): A supermultiplier demand-led growth accounting analysis applied to the Spanish economy (1998–2019), in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejeep.2023.0115>.
- Lavoie, M. (1995): Interest rates in post-Keynesian models of growth and distribution, in: *Metroeconomica*, 46(2), 146–177.
- Lavoie, M. (2017): The origins and evolution of the debate on wage-led and profit-led regimes, in: *European Journal of Economics and Economic Policies: Intervention*, 14(2), 200–221.
- Lavoie, M. (2022): *Post-Keynesian Economics: New Foundations*, 2nd edition, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Lavoie, M., Stockhammer, E. (2013): Wage-led growth: concept, theories and policies, in: Lavoie, M., Stockhammer, E. (eds.), *Wage-led Growth: An Equitable Strategy for Economic Recovery*, Basingstoke, UK: Palgrave Macmillan.
- Marx, K. (1867 [1890]): *Das Kapital. Kritik der politischen Ökonomie, Erster Band: Der Produktionsprozeß des Kapitals*, 4th edn, in: Marx-Engels-Werke, Volume 23, Berlin: Dietz Verlag 1962, English translation: *Capital. A Critique of Political Economy, Volume 1: The Process of Capitalist Production*, New York: International Publisher, 1967.
- McDonough, T., Reich, M., Kotz, D. M. (2010): The state of the art of social structure of accumulation theory, in: McDonough, T., Reich, M. and Kotz, D.M. (eds), *Contemporary Capitalism and Its Crises. Social Structure of Accumulation Theory for the 21st Century*, Cambridge, UK: Cambridge University Press.

- Mertens, D., Nölke, A., May, C., Schedelik, M., ten Brink, T., Gomes, A. (2022): Moving the center: adapting the toolbox of growth model research to emerging capitalist economies, Working Paper, No 188/2022, Institute for International Political Economy (IPE), Berlin School of Economics and Law.
- Minsky, H. (1986): *Stabilizing an Unstable Economy*, New York: McGraw-Hill, 2008.
- Moore, G.L., Stockhammer, E. (2018): The drivers of household indebtedness reconsidered: an empirical evaluation of competing arguments on the macroeconomic determinants of household indebtedness in OECD countries, in: *Journal of Post Keynesian Economics*, 41(4), 547–577.
- Morlin, G.S. (2022): Growth led by government expenditure and exports: Public and external debt stability in a supermultiplier model, *Structural Change and Economic Dynamics*, 62, 586–598.
- Morlin, G.S., Passos, N., Pariboni, R. (2022): Growth theory and the growth model perspective: insights from the supermultiplier, in: *Review of Political Economy*, advance access, doi: <https://doi.org/10.1080/09538259.2022.2092998>
- Naastepad, C.W.M. (2006): Technology, demand and distribution: a cumulative growth model with an application to the Dutch productivity growth slowdown, in: *Cambridge Journal of Economics*, 30(3), 403–434.
- Nikiforos, M. (2013): The (normal) rate of capacity utilization at the firm level, in: *Metroeconomica*, 64(3), 513–538.
- Nikiforos, M. (2016): On the utilisation controversy: a theoretical and empirical discussion of the Kaleckian model of growth and distribution, in: *Cambridge Journal of Economics*, 40(2), 437–67
- Nikiforos, M. (2018): Some comments on the Sraffian supermultiplier approach to growth and distribution, in: *Journal of Post Keynesian Economics*, 41(1), 659–674.
- Nikiforos, M. (2021): Notes on the accumulation and utilization of capital: some empirical issues, in: *Metroeconomica*, 72(4), 679–695.
- Onaran, Ö., Galanis, G. (2014): Income distribution and growth: a global model, in: *Environment and Planning A: Economy and Space*, 46(10), 2489–2513.
- Onaran, Ö., Obst, T. (2016): Wage-led growth in the EU15 member-states: the effects of income distribution on growth, investment, trade balance and inflation, in: *Cambridge Journal of Economics*, 40(6), 1517–1551.
- Onaran, Ö., Stockhammer, E., Grafl, L. (2011): Financialisation, income distribution and aggregate demand in the USA, in: *Cambridge Journal of Economics*, 35(4), 637–661.
- Onaran, Ö., Oyvat, C., Fotopoulou, E. (2022a): A macroeconomic analysis of the effects of gender inequality, wages, and public social infrastructure: the case of the UK, in: *Feminist Economics*, 28(2), 152–188.
- Onaran, Ö., Oyvat, C., Fotopoulou, E. (2022b): Gendering macroeconomic analysis and development policy, in: *Feminist Economics*, 28(3), 23–55.
- Orhangazi, Ö. (2008): Financialisation and capital accumulation in the non-financial corporate sector: a theoretical and empirical investigation on the US economy, 1973–2003, in: *Cambridge Journal of Economics*, 32(6), 863–886.
- Palley, T.I. (2009): The macroeconomics of financialization: a stages of development approach, in: *Ekonomiaz*, No. 73, 34–51.
- Palley, T.I. (2012): *From Crisis to Stagnation: The Destruction of Shared Prosperity and the Role of Economics*, Cambridge, UK: Cambridge University Press.
- Palley, T.I. (2013): *Financialization: The Economics of Finance Capital Domination*, Basingstoke, UK: Palgrave Macmillan.
- Palley, T.I. (2017): Wage- vs. profit-led growth: the role of the distribution of wages in determining regime character, in: *Cambridge Journal of Economics*, 41(1), 49–61.
- Palley, T.I. (2021a): *Neoliberalism and the Road to Inequality and Stagnation*, Cheltenham, UK, and Northampton, MA: Edward Elgar Publishing.
- Palley, T.I. (2021b): Financialization revisited: the economics and political economy of the vampire squid economy, in: *Review of Keynesian Economics*, 9(4), 461–492.
- Palley, T.I. (2022): Theorizing varieties of capitalism, economics and the fallacy that ‘there is no alternative (TINA)’, in: *Review of Keynesian Economics*, 10(2), 129–166.
- Passos, N., Morlin, G. (2022): Growth models and comparative political economy in Latin America, in: *Revue de la Régulation*, 33(2), doi: <https://doi.org/10.4000/regulation.21444>.

- Prante, F.J., Hein, E., Bramucci, A. (2022): Varieties and interdependencies of demand and growth regimes in finance-dominated capitalism: a post-Keynesian two-country stock-flow consistent simulation approach, in: *Review of Keynesian Economics*, 10(2), 262–288.
- Priewe, J., Herr, H. (2005): *The Macroeconomics of Development and Poverty Reduction – Strategies beyond the Washington Consensus*, Baden-Baden: NOMOS.
- Robinson, J. (1956): *The Accumulation of Capital*, London: Macmillan.
- Robinson, J. (1962): *Essays in the Theory of Economic Growth*, London: Macmillan.
- Rowthorn, R.E. (1981): Demand, real wages and economic growth, in: *Thames Papers in Political Economy*, Autumn, 1–39.
- Sasaki, H., Fujita, S. (2012): The importance of the retention ratio in a Kaleckian model with debt accumulation, in: *Metroeconomica*, 63, 417–428.
- Sawyer, M. (2013/14): What is financialization?, in: *International Journal of Political Economy*, 42(4), 5–18.
- Schedelik, M., Nölke, A., Mertens, D., May, C. (2021): Comparative capitalism, growth models and emerging markets: the development of the field, in: *New Political Economy*, 26(4), 514–526.
- Seguino, S. (2020): Engendering macroeconomic theory and policy, in: *Feminist Economics*, 26(2), 27–61.
- Serrano, F. (1995): Long-period effective demand and the Sraffian supermultiplier, in: *Contributions to Political Economy*, 14(1), 67–90.
- Setterfield, M. (2019): Long-run variation in capacity utilization in the presence of a fixed normal rate, in: *Cambridge Journal of Economics*, 43(2), 443–463.
- Setterfield, M., Avritzer, J.D. (2020): Hysteresis in the normal rate of capacity utilization: a behavioural explanation, in: *Metroeconomica*, 71(4), 898–919.
- Setterfield, M., Kim, Y.K. (2017): Household borrowing and the possibility of consumption-driven, profit-led growth, in: *Review of Keynesian Economics*, 5(1), 43–60.
- Setterfield, M., Kim, Y.K. (2020): Varieties of capitalism, increasing income inequality and the sustainability of long-run growth, in: *Cambridge Journal of Economics*, 44(3), 559–582.
- Setterfield, M., Kim, Y.K., Rees, J. (2016): Inequality, debt servicing and the sustainability of steady state growth, in: *Review of Political Economy*, 28(1), 45–63.
- Skott, P. (2017): Weaknesses of wage-led growth, in: *Review of Keynesian Economics*, 5(3), 336–359.
- Skott, P. (2019): Autonomous demand, Harroldian instability and the supply side, in: *Metroeconomica*, 70(2), 233–246.
- Smithin, J. (1996): *Macroeconomic Policy and the Future of Capitalism. The Revenge of the Rentiers and the Threat to Prosperity*, Cheltenham, UK, and Northampton, MA: Edward Elgar.
- Steindl, J. (1952): *Maturity and Stagnation in American Capitalism*, Oxford: Blackwell, 2nd edition, 1976, New York and London: Monthly Review Press.
- Steindl, J. (1979): Stagnation theory and stagnation policy, in: *Cambridge Journal of Economics*, 3(1), 1–14.
- Steindl, J. (1989): From stagnation in the 30s to slow growth in the 70s, in: Berg, M. (ed.), *Political Economy in the Twentieth Century*, Oxford: Philip Allan (Reprinted in: Steindl, J. (1990): *Journal of Economic Papers, 1941–88*, Basingstoke: Macmillan).
- Stockhammer, E. (2004): Financialisation and the slowdown of accumulation, in: *Cambridge Journal of Economics*, 28(5), 719–741.
- Stockhammer, E. (2005/6): Shareholder value orientation and the investment-profit puzzle, in: *Journal of Post Keynesian Economics*, 28(2), 193–215.
- Stockhammer, E. (2010): Income distribution, the finance-dominated accumulation regime, and the present crisis, in: Dullien, S., Hein, E., Truger, A., van Treeck, T. (eds), *The World Economy in Crisis - the Return of Keynesianism?*, Marburg: Metropolis.
- Stockhammer, E. (2012): Financialization, income distribution and the crisis, in: *Investigación Económica*, 71(279), 39–70.
- Stockhammer, E. (2015): Rising inequality as a cause of the present crisis, in: *Cambridge Journal of Economics*, 39(3), 935–958.
- Stockhammer, E. (2017): Wage-led versus profit-led demand: what have we learned? A Kaleckian-Minskyan view, in: *Review of Keynesian Economics*, 5(1), 25–42.
- Stockhammer, E. (2022): Post-Keynesian macroeconomic foundations for comparative political economy, in: *Politics & Society*, 50(1), 156–187.

- Stockhammer, E., Kohler, K. (2022): Learning from distant cousins? Post-Keynesian economics, comparative political economy, and the growth models approach, in: *Review of Keynesian Economics*, 10(2), 184–203.
- Stockhammer, E., Onaran, Ö. (2013): Wage-led growth: theory, evidence, policy, in: *Review of Keynesian Economics*, 1(1), 61–78.
- Stockhammer, E., Wildauer, R. (2016): Debt-driven growth? Wealth, distribution and demand in OECD countries, in: *Cambridge Journal of Economics*, 40(6), 1609–1634.
- Stockhammer, E., Wildauer, R. (2018): Expenditure cascades, low interest rates or property booms? Determinants of household debt in OECD countries, in: *Review of Behavioural Economics*, 5(2), 85–121.
- Stockhammer, E., Durand, C., List, L. (2016): European growth models and working class restructuring: an international post-Keynesian political economy perspective, in: *Environment and Planning A*, 48(9), 1804–1828.
- Storm, S., Naastepad, C.W.M. (2012): *Macroeconomics beyond the NAIRU*, Cambridge, MA, and London: Harvard University Press.
- Storm, S., Naastepad, C.W.M. (2013): Wage-led or profit-led supply: wages, productivity and investment, in: Lavoie, M., Stockhammer, E. (eds), *Wage-led Growth: An Equitable Strategy for Economic Recovery*, Basingstoke: Palgrave Macmillan.
- Thirlwall, A.P. (1979): The balance of payments constraint as an explanation for international growth rate differences, in: *BNL Quarterly Review*, 32(128), 45–53.
- Tori, D., Onaran, Ö. (2018): The effects of financialisation on investment: evidence from firm-level data for the UK, in: *Cambridge Journal of Economics*, 42(5), 1393–1416.
- Van der Zwan, N. (2014): Making sense of financialization, in: *Socio-Economic Review*, 12(1), 99–129.
- Van Treeck, T. (2008): Reconsidering the investment-profit nexus in finance-led economies: an ARDL-based approach, in: *Metroeconomica*, 59(3), 371–404.
- Van Treeck, T. (2014): Did inequality cause the US financial crisis?, in: *Journal of Economic Surveys*, 28(3), 421–448.
- Van Treeck, T., Sturn, S. (2012): Income inequality as a cause of the Great Recession? A survey of current debates, Conditions of Work and Employment Series, No 39, Geneva: ILO.
- Van Treeck, T., Sturn, S. (2013): The role of income inequality as a cause of the Great Recession and global imbalances, in: Lavoie, M., Stockhammer, E. (eds), *Wage-led Growth: An Equitable Strategy for Economic Recovery*, Basingstoke, London: Palgrave Macmillan.
- Veblen, T. (1899): *The Theory of the Leisure Class*, London: Allen and Unwin, 1970.
- Woodgate, R. (2020): Can tax competition boost demand? Causes and consequences of the global race to the bottom in corporate tax rates, in: *Review of Keynesian Economics*, 8(4), 512–535.
- Woodgate, R. (2021): Multinational corporations and commercialised states: can state aid serve as the basis for an FDI-driven growth strategy?, Working Paper, No 161/2021, Institute for International Political Economy (IPE), Berlin School of Economics and Law.
- Woodgate, R. (2022): Profit-led in effect or in appearance alone? Estimating the Irish demand regime given the influence of multinational enterprises, in: *Review of Evolutionary Political Economy*, 3(2), 319–350.
- Woodgate, R. (2023a): Offshoring via vertical FDI in a long-run Kaleckian model, in: *Journal of Post-Keynesian Economics*, 46(1), 32–64.
- Woodgate, R. (2023b): FDI-led growth models: Sraffian Supermultiplier models of export platforms and tax haven, in: *European Journal of Economics and Economic Policies: Intervention*, advance access, doi: <https://doi.org/10.4337/ejep.2023.0110>.