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Wage-led and profit-led regime research – promising scientific research programme or scientific *cul-de-sac*?

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Abstract

Over the past three decades, a small but very productive Post Keynesian and Marxian research community has engaged in the elaboration of a scientific research programme (SRP) that has come to be known as wage and profit-led regime research. The intention of this article is to examine whether this SRP can fill an obvious gap in Post-Keynesian theory: In accordance with Keynes's considerable neglect of distributional questions in his General Theory, most Post-Keynesians have underemphasised a phenomenon that has become one of the most socially and politically concerning problems of our times: growing income inequality. It will be argued that neo-Kaleckian and neo-Marxian regime approaches have produced few helpful insights for policy procurement, and through their self-inflicted focus on functional income distribution have even distracted from more important questions of personal income distribution and the incorporation of wage policy into a strategy of coordinated macroeconomic policies to boost growth and employment.

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1. Introduction

Over the past three decades, a small but very productive Post Keynesian and Marxian research community has engaged in the elaboration of a scientific research programme (SRP) which has come to be known as wage- and profit-led regime research.[2] In dozens of journal articles in almost every heterodox economic journal, but mainly the *Cambridge Journal of Economics*, the primary target was to reiterate the classical political economy perspective of functional income distribution as a major determinant of economic development and employment from a Keynesian (effective demand) and Marxian (class struggle) perspective.

Only recently, the *Review of Keynesian Economics* (RoKE) dedicated an incredible four (consecutive) issues to the exposition and discussion of this *Denkstil* convening almost the entire 'wage- and profit-led regime' community; whilst the International Labour Office (ILO) commissioned a major research initiative investigating the interrelationship of functional income distribution and growth (see Lavoie and Stockhammer 2013a).[3]

In particular, as only very few critical voices – such as Skott (2017), Dos Santos (2015) or, quite moderately, Blecker (2016)[4] – joined this illustrious round, I dare to re-open the discussion about the scientific and political merits of the 'wage- and profit-led regime' approach. This is done with the intention to inquire whether this SRP can fill an obvious gap in Post Keynesian theorising. In accordance with Keynes's considerable neglect of distributional issues in his *General Theory*, most Post Keynesians de-emphasised a phenomenon which has become one of the socially and politically most concerning problems of our times: growing income inequality.

This article is structured as follows: In Section Two, the main theoretical arguments of the wage- and profit-led regime approach will be exposed and scrutinised by concentrating on the Bhaduri-Marglin model which has been taken as 'a widely used workhorse model' (Stockhammer 2017 p 25) in this context. Thereafter in Section Three, the empirical part of the literature will be reviewed in order to establish whether distributional regimes can unambiguously be assigned to single countries. Policy conclusions drawn from the regime approach will be challenged in Section Four. The article continues in Section Five with some concluding remarks on the merits of the distributional regime approach.

2. Distribution and growth – the Bhaduri/Marglin model in critical perspective

In classical political economics, conflicts over the distribution of income always lay at the bottom of macroeconomic development in capitalist economies (see e.g. Sandmo 2015). From a Marxian perspective, a squeeze of profit income hampers capital accumulation and, thus, is harmful to economic growth, income generation and employment, as capitalists will only be less able to follow their destination: 'Accumulate, accumulate! That is Moses and the Prophets' (Marx 1887/1954 p 418). In Keynesian economics, on the other hand, wage income is the biggest part of consumption spending which, again, makes up the biggest part of effective demand in any capitalist economy. Although Keynes in his *General Theory* showed little interest in distributional issues (see e.g. Keynes 1939), he provided channels through which changes in income distribution can have an effect on growth and employment, the most obvious one being the impact of income inequality on the marginal propensity to consume as a main determining factor of effective demand.

However, even this channel is addressed in the *General Theory* only in a passing note and appears to concern personal rather than functional income distribution: 'If fiscal policy is used as a deliberate instrument for the more

equal distribution of incomes, its effect in increasing the propensity to consume is, of course, all the greater' (Keynes 1936 p 95). Also, his framing of a change in (personal) income distribution in the context of state action (fiscal policy or taxation) rather than the struggle of different socioeconomic actors over the appropriate share of income (class conflict over functional income) hints to the fact that in Keynes's eyes, functional income distribution was an endogenously determined resultant, not an exogenously set determinant of growth, income and employment.

Therefore, changes in functional income distribution may be judged quite differently with respect to their impact on economic growth and employment[5]: it may be regarded as a major determining factor with contrasting signs – a positive impact or a negative impact of a growing wage share and, *vice versa*, a negative or a positive impact of a growing profit share – depending on whether the consumption channel (Keynes) or the investment channel (Marx) is seen as dominant. Or it may be regarded as insignificant in Keynes's sense that functional income distribution is understood – as much as growth, income and employment – as an endogenously determined result of economic activity, based on a given and controllable set of factors such as technologies and techniques, tastes, preferences, propensities and institutions and policies but not an outcome of the conflictual actions of collective socioeconomic actors.

Different from most ensuing contributions, Bhaduri and Marglin in their seminal paper (Bhaduri and Marglin 1990 p 375f.; henceforth B/M) were entirely explicit about Keynes's (and, they claim with reference to the so called 'wage theorem', Kalecki's) insistence on the endogeneity of functional income distribution (and, thus, the insignificance of functional income distribution with respect to growth and employment in the above-mentioned sense). Yet, they departed from this point of view for two reasons: 1) even mere 'thought experiments', they claim, may provide useful insights, 2) the argument of the endogeneity of functional income distribution is based on a closed economy reasoning which may be altered when an open economy is considered. We shall have to come back to these two qualifications, because they are crucial for an evaluation of the wage- and profit-led regime approach, and because they have been entirely ignored in most of the theoretical build-up and discussion and empirical specifications that followed the publication of the B/M paper.

Let us follow the presumption of the B/M paper that pure 'thought experiments' – specifically the assumption that the owners of the factors of production can deliberately determine the real remuneration rates of their factors[6] – may gain valuable insights. One set of insights, which has been repeated numerous times, is that both signs for the impact of a changing functional income distribution may be theoretically vindicable: Depending on the respective size of the impact of a change in the wage rate or, what is taken as synonymous in this model, the wage share (or, *vice versa*, a change in the profit rate or profit share) on consumption and investment spending, an increase in the wage share (or real wage rate) will positively – the wage-led regime

misleadingly associated with Keynes – or negatively affect effective demand and, thus, growth and employment: the profit-led regime associated with Marx.

This result rests on the specific assumptions set out in the B/M paper (and the entire wage-led, profit-led regime literature): 1) a 'classical' saving hypothesis with only saving out of capital income (implying a higher marginal propensity to consume of labourers than capitalists), 2) a constant amount of labour per unit of final output (implying the correspondence of average and marginal labour productivity), 3) an investment function determined by the profit rate (and, in the short run, by the difference of 'normal' or 'desired' and actual capital utilisation), 4) a profit margin (mark-up) determined by capitalists, (5) the independence of savings from investment and 6) for an open economy a (given) price-elasticity of exports and a lack of compensating measures via exchange rate or real wage movements on the part of the trading partners (for a discussion of the two-country case, see Stockhammer and Onaran 2012 p 5). Whether an economy can be judged as 'wage-led' or 'profit-led' depends on the difference between the propensities to consume of the two socioeconomic classes, the profit-rate elasticity of investment spending and the price elasticity of exports – larger, more closed economies are more likely to be wage-led while smaller, more open, economies are likely to be profit-led.

The classical saving hypothesis is not an assumption which claims to be very realistic, but it serves the function of securing a positive difference in the propensity to consume of the different classes. This, however, is anything but logically obvious as the propensity to consume sensibly depends on the income *level* of households not the *source* of income. And even if it were empirically to hold[7], the underlying idea of an increase of aggregate demand from increased consumption spending associated with an increase in the wage share (i.e. the wage-led regime) is easily contestable once we distinguish between the wage income of 'operative workers' and the earned income of 'administrative workers', both comprising the wage share. If functional income distribution changes towards the wage share, and personal income distribution becomes ever more unequal as a result of managers' salaries increasing exorbitantly while operative workers' wages are stagnating (as experienced over the past 2 to 3 decades), the argument for a wage-led regime starts to crumble.[8]

The fixed labour-coefficient assumption (i.e. a limitational Leontief production function) is needed for two purposes: firstly, it secures the correspondence of the direction of change in the factor remuneration shares and rates. If we assume, instead, an ordinary Cobb-Douglas environment (i.e. a substitutional production function with elasticities of substitution different from zero)[9], this correspondence blurs.[10]

Secondly, this assumption allows us to presuppose an exogeneity of functional distribution foundational to the whole approach. Now, the price-level p is determined by average (variable) costs (nominal unit labour cost) bw (with $1/b$ = average labour productivity and w = nominal wage rate) and a mark-up (m) set by firms:

$$P = (1 + m)\, bw \tag{1}$$

If we take the mark-up as given and the labour coefficient as technically determined, setting the nominal wage rate will also determine the real wage rate. By simply changing the mark-up (see also aforementioned assumption [4]), the wage rate and, correspondingly, the wage share (and, thus, the profit rate and profit share) will change in the same direction and become an exogenous variable in the control sense.

This is, probably, why most adherents to this approach do not take the exogeneity assumption as merely a 'thought experiment' but as a crucial characteristic of their distributional models. However, it rests on the assumption that the mark-up is a matter of conflict of the two socioeconomic classes and, thus, becomes a power-related variable. Yet how a shift in power relations can influence the mark-up has never been shown convincingly[11]: all the socioeconomic classes can struggle over in a capitalist economy is the nominal wage rate[12], not the real wage rate. Whether a change in the nominal wage rate translates into a change in the real wage rate depends on the ability of firms to set the price of their commodities. This ability depends on the degree of competition in the commodity market. As long as this degree does not change, it is hard to see how firms should be able to increase their mark-up even though labour might have weakened.[13] Therefore, the real wage rate necessary to determine functional income distribution is fixed once the nominal wage rate, technology and the market structure of commodity markets are given. Moreover, it cannot be altered via conflicting claims on the labour market resulting in, *ceteris paribus*, nominal wage rate and corresponding price changes.

The investment function used in wage-led, profit-led models is, boldly speaking, inadequate.[14] It relates investment spending to the profit share and, in the short run covering periods of disequilibrium (or partial equilibrium, if the capacity utilisation rate is used as a short-term instrument of adjustment), the capacity utilisation rate (see e.g. Lavoie *et al* 2004). Neglecting the latter determinant for aforementioned reasons (see note 4), giving the profit share and, thus, the profit rate such a prominent place in determining investment spending serves the purpose of being able to close the distributional system. This is done by also making savings dependent on the profit share and claiming independence of investment and savings: then, by equating I and S (as an equilibrium condition!), the (equilibrium) profit share and, implicitly, the (equilibrium) mark-up are determined and the distributional system closed.

This reasoning is flawed on three grounds: 1) simply relating investment demand to (realised) profits is certainly not a persuasive rationale for action in a world where capitalists do not merely accumulate but have to choose between investing, consuming or keeping liquidity. What is needed is a comparison of *expected* profits with an independent opportunity cost factor such as the interest rate in (Post-)Keynesian determination. To take *actual* profits as a proxy for *expected* profits, as is done explicitly by Bhaduri and Marglin (1990 p 380), would assume an entirely deterministic world.

This is a strange idea, yet it is not enough to determine investment demand as long as the interest rate is not taken into account. Even including the interest rate as an additional factor in the investment function as is occasionally done (see e.g. Stockhammer and Onaran 2012 p 4), does not help as long as the interest rate is not the very factor which keeps capital scarce (i.e. which restricts capital accumulation) because it 'rules the roost of the 'own rates of interest' (Keynes 1936 p 223).

In neo-Kaleckian, neo-Marxian theories, the interest rate is merely the 'financial twin' of the profit rate, which serves primarily as an allocational (and distributional) function between capitalists and rentiers. Or, to put it differently, in neo-Kaleckian, neo-Marxian models it is the profit rate which, in the long run, determines the interest rate, not the other way around.[15] Therefore, including the interest rate in the investment function does not really help.

2) ever since Keynes's treatment of savings and investment in his *General Theory*, we know that both variables are mere accounting identities – they cannot diverge from each other: any investment spending creates – *uno actu* – an equal amount of savings[16], although we can define both categories in a way – like 'desired', 'planned', 'full employment', etc. – that they may diverge: 'planned' or 'desired' savings may be lower than 'planned' or 'desired' investment. Yet, this does not explain why and how a change in functional income distribution is supposed to take care of this inequality.

In the short run, any error in expecting the correct (i.e. *ex post* realised) amount of effective demand leading, for instance, to a situation of *ex-ante* 'over-investment' (i.e. the propensity to save of households has been underrated) will be 'cured' (i.e. brought into numerical equality *ex post*) by a change in functional income distribution to the detriment of profit earners. However, once capacities are adjusted accordingly (in the long run), the initial income distribution will prevail as long as technical conditions and market structures have not changed. Therefore, in the long run, we simply do not need income distribution as an equilibrating mechanism (and, in the short run, functional income distribution has a purely passive role which does not fit the 'regime' metaphor).

This is reason number 3 why the treatment of investment in the distributional models is inadequate: once we accept that the mark-up is no matter of class conflicts, the distributional system is closed and does not need any (theoretically dismissible) I-S equalisation mechanism.

Finally, treating an economy as merely a part of a bigger whole – as with a single country being a part of the whole world economy – the real wage rate in that part may certainly become an endogenous variable which can be 'controlled' by nominal wage changes in the one country, once we neglect similar movements of the nominal wage rates in the rest of the world or, more realistically, compensating exchange rate movements as purchasing power parity (exchange rate) theory would predict. In this case, the impact of nominal and real wage changes on the price competitiveness of the one country against its trading

partners will certainly add to the profit-led line of argument. Yet, the substance of the argument is price elasticity, not functional income distribution!

Assume that in the initial period the country is neither importing nor exporting to the rest of the world. If we now reduce the nominal wage rate in that country, prices and the entire price level will change proportionately, leaving the real wage rate (and functional income distribution) unchanged. However, if nominal wages in the rest of the world, or the exchange rates, do not change accordingly and an ordinary (negative) price elasticity of exports of the one country is assumed, effective demand in that country will increase.

Bhaduri and Marglin promised that the 'thought experiment' of exogenising functional income distribution will gain valuable insights. They can now be summarised as follows: 1) fixing the profit margin through class conflict is crucial to the entire project. Once this assumption is rejected on analytical grounds, functional income distribution is – in this type of model – endogenously determined in the process of economic activity, based on technological factors and the degree of competition on commodity markets.

2) A Leontief production function is necessary to close the distributional system via the assumption of fixed capital and labour coefficients (or productivity). However, even assuming fixed coefficients will gain a unique solution to functional income distribution only once the choice of technique[17] has been settled, this can only be done on the basis of either the real wage rate or the interest rate being set exogenously. As we have argued above, the real wage rate is an endogenous variable. Thus, the interest rate must be – as proposed by Keynes (1936 p 222ff.) and Sraffa (1960 p 33)[18] – the variable which closes the distributional system.[19]

3) Investment spending as the core of the growth model is purpose-built rather than empirically or analytically derived. Its purpose is to show that growth (or accumulation through investment) is determined by functional income distribution and, thus, becomes a *petitio principii*.

3. Empirics of wage-led and profit-led regimes

There are two different hypotheses which can be derived from the wage-led, profit-led growth models:

(1) There is a causal (long-run) relation running from functional income distribution to economic growth

(2) The impact of an exogenous change in functional income distribution can either be wage- or profit-led.

The first hypothesis is foundational to the whole idea of distributional regimes as economic policy measure, based on the exogenous encroachment into functional income distribution. The second hypothesis leaves room for an empirical settlement of the apparently open question of sign of impact. Logically, the first hypothesis precedes the second one. However, to my knowledge none of the empirical studies testing the wage-led, profit-led regime approach has

ever worried about testing hypothesis (1), but simply assume an exogeneity of functional income distribution and a causal relation to economic growth.[20]

Testing the second hypothesis has mostly been done indirectly, by using either single equation estimations of the different components of effective demand or structural Autoregression (VAR) models for many different countries or country groups and different functional specifications. What these studies came up with was not an estimation of the long-run positive or negative impact of the change in functional income distribution on the growth rate, but short-run estimations of consumption, investment and export elasticities of changes in wages, profits, nominal unit labour cost and some additional factors.

As long as technological change has not been controlled for and no long-run cointegration test has been performed, the empirical studies can by no means be taken as tests in fallibilistic positivism, but are merely indirect empirical estimations for the sign and magnitude of impact of an assumed change in functional income distribution on effective demand – thereby attempting to discriminate between the possibility of a wage-led or profit-led scenario.

And it is here that the empirical literature on wage-led, profit-led growth models is particularly disappointing: not only is it inconclusive in the sense that different studies come up with contradictory opinions on the signs – i.e. on the evaluation of whether a country is supposed to be judged as being wage- or profit-led – but there appears to be only one country – Italy – which has not produced contradictory results (see Stockhammer and Onaran 2013). Moreover, the results seem not only to be inconclusive for such countries – like Germany or France – which are hard to judge and predict in terms of their openness (more closed economies are more likely to be wage-led), but even indisputably small, open economies such as the Netherlands, Austria or Australia as much as indisputably big, closed economies such as the euro area or the USA produce contradictory evidence.

Several reasons have been given for these contradictory results, including different empirical techniques, different specifications, different time dimensions (short or long term outlook), different perspectives with regard to domestic or total demand, and different perspectives regarding the influence of personal income distributions (see Stockhammer and Onaran 2013; Skott 2017; Lavoie 2017; Stockhammer 2017). It is nonetheless devastating if neither theoretical reasoning nor empirical evidence can ultimately identify the nature of a distributional regime in a single country.[21]

4. Policy implications

Distributional growth models are seen as a challenge to mainstream supply-side economic policy recommendations that have characterised the neoliberal era (see e.g. Lavoie and Stockhammer 2013b). Labour market deregulation, welfare state retrenchment and collective bargaining decentralisation have, among other things such as the processes of globalisation and financialisation,

reduced the wage share over a long period and, thus, hampered economic growth.

According to our aforementioned analysis, this is only true once an economy is identified as wage-led because, otherwise, mainstream supply-side measures would, from a Marxian point of view obligatory in a capitalist world (see Boddy and Crotty 1975), be necessary to maintain profitability as a major source of the accumulation process. This appears to be the reason why most related literature either assumes, despite the inconclusiveness of empirical evidence, countries to be wage-led (see e.g. Stockhammer and Onaran 2013) or, at least, claim a wage-led regime to prevail if a certain wage policy (expansionary or restrictive) would become a world-wide strategy (see Lavoie and Stockhammer 2013b p 33).[22]

However, wage policy is – at least in most countries – pursued by the trade unions and employers' organisations, but is not an area of government policy and, thus, *functional income distribution is not an instrument of economic policy*. Therefore, the outcome of the wage bargaining process cannot easily be influenced by a government following any kind of wage regime. So, what can be done in order to render a wage-led regime still viable (assuming the country to follow such a regime is, in fact, wage-led)? Additional to simply giving political support to the trade unions in the bargaining process, it is argued that any measure which strengthens the position of trade unions in their struggle over a fair income share will be helpful (see e.g. Lavoie and Stockhammer 2013b p 34; Stockhammer and Onaran 2013 p 73): introducing and increasing minimum wages, increasing the reservation wage via social policy, strengthening collective bargaining, etc.

In combination with policies regulating international financial markets (to re-balance the power relations between capital and labour which have been distorted as a result of globalisation and financialisation), all proposed measures aim at pacifying the 'class conflict'. Our analysis has, however, shown that functional income distribution is determined primarily by an exogenous variable which is most certainly not the real wage or the structure of commodity markets. On monetary policy (to set or influence the exogenous variable) and competition policy (to maintain or restore competition on commodity markets) the relevant literature remains rather silent.

Although it is admitted that a wage-led strategy is 'certainly too small in magnitude to be sufficient as stabilization policy in the medium term' (Stockhammer and Onaran 2013 p 75; see also Onaran 2016), policy recommendations based on the distributional regime approach are still proposed as an 'equitable strategy for economic recovery' (Lavoie and Stockhammer 2013b) which 'aims at establishing a full-employment growth model in which sustained wage growth drives demand via consumption growth and via accelerator effects of investment growth as well as productivity growth via labour saving technological change' (Stockhammer and Onaran 2013 p 74).

Moreover, following a 'wage-led' strategy is seen as a device to substitute a 'beggar-thy-neighbour' export oriented strategy with one that puts domestic

demand centre stage and, hence, mitigates the danger and likelihood of trade conflicts. We concede that economic policy strategies that aim at increasing the price competitiveness of an economy by reducing relative nominal unit labour costs may foster domestic growth, to the detriment of trading partners. This result is, however, independent of whether such a policy impacts on functional income distribution or not. To put it differently, the 'beggar-thy-neighbour' argument is unrelated to the distributional considerations of the wage-led-approach.

To sum up, it appears not unfair to say that the economic policy and polity dimensions are not the main focus of distributional models.

5. Conclusion

The paper started with the task to evaluate the wage-led, profit-led regime approach as SRP. Basically, the question was whether this offers a promising avenue to integrate income inequality – perhaps the socially most problematic development of the last four decades – into heterodox modelling. Rising income inequality is not only a social problem when it comes with rising poverty rates, and a political problem when the legitimacy of ever higher relative and absolute income at the high end of the income scale is questioned (se e.g. Mongiovi 2015 p 564). It also becomes an economic problem when the generation of income itself is hampered by income inequality through the effective demand channel. This is anything but a new insight and has always played a role in heterodox models – albeit arguably not to the extent that it deserves (see Lopez-Bernardo *et al* 2016 p 198ff.).

However, what has been at the centre of interest with respect to income distribution in recent years has been personal income distribution, not functional income distribution.[23] This is rightly so because personal income inequality has exploded in recent decades, everywhere in the world and independent of the measures used (Gini-coefficient or income deciles). Functional income distribution may impact on personal income distribution, but the direction is unclear.[24]

Moreover, functional income distribution has remained rather stable over recent decades if trends are taken. Traces of a long 'neoliberal era' can hardly be detected.[25] In the US, the wage share fell from about 66 per cent in 1991 (a cyclical high) with long, but rather modest swings by 5.5 percentage points to 60.4 per cent in 2017. In the UK, it rose over the same period but with greater variance, by 2.5 percentage points from 63.8 per cent to 66.3 per cent. In the euro area it again fell, rather steadily by merely 3 percentage points from 65.8 per cent to 62.6 per cent, whilst in France it remained almost constant, with little variance.[26]

'Bowley's law', which claims such a long-run constancy of functional income distribution as the 'normal' outcome, has been strongly contested in more recent contributions (see e.g. Bentolila and Saint-Paul 2003; Elsby *et al* 2013). That said, a moderate (cyclical) fall in the wage share appears unproblematic[27] and can easily be explained by technological factors, concentration processes in commodity

markets and the long-run development of liquidity preferences of wealth owners in maturing economies.[28] No class conflict narrative is needed which, as has been argued, cannot be substantiated theoretically in a sound way.

Moreover, the policy recommendations accruing from the distributional regime approach are not only rather unfocused but also risky: they are unfocused in the sense that the political actor has little means to interfere directly with the wage bargaining process. All proposed measures to strengthen labour may or may not increase the wage share. Because functional income distribution is endogenously determined it depends ultimately, *ceteris paribus*, on the impact of wage settlements on interest rates. That is where the recommendations may become risky: on the one hand, they neglect the possibility of an inflationary process triggered by too high nominal wage claims.[29] This may easily provoke the central bank to raise (short-term) interest rates and, at any rate, may seduce wealth owners to increase their liquidity preference (with its impact on long-term interest rates) in order to safeguard against growing uncertainty.

On the other hand, focussing on wage policy may leave other, more important, policy areas such as fiscal and monetary policy underexposed. Moreover, even if class conflict was able to intentionally change functional income distribution, as long as there is reasonable doubt about the identification of a particular economy to be either wage- or profit-led, any responsible government would be well-advised not to put too much emphasis on a strategy that may easily turn out as missing the target.

If the above reflections are correct, wage-led and profit-led regime approaches cannot be rated as a promising SRP but must be seen as a *scientific cul-de-sac*[30] which has produced a lot of self-reflection and idiocentrism[31], but few helpful insights for policy procurement. It may even have distracted, with its self-inflicted focus on functional income distribution, from more important issues of personal income distribution and the inclusion of wage policy into a strategy of coordinated macroeconomic policies for more growth and employment (see e.g. Heise 2006, 2009), whatever the impact on functional income distribution ultimately is.

Stockhammer and Ramskogler (2013 p 52ff) put forward a number of recommendations for Post Keynesian Economics (PKE) to move forward, i.e. as prerequistes for PKE to be seen as a promising SRP. Among them are recommendations to 'be politically relevant' and 'be more Post and less Keynesian', the latter justified not in terms of analysis but in terms of subjects being investigated. With respect to the distributional regime approach (as a variant of PKE), the first recommendation appears not to have been lived up to, while the second recommendation should probably be reversed: 'be less Post and more Keynesian' in analytical terms (see e.g. Heise 2019) as much as in subjects being investigated (see e.g. Davidson 2015, 2017).

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Endnotes

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2. Just to name a few: Dutt (1984); Blecker (1989); Bhaduri and Marglin (1990); Lavoie (1995); Onaran and Galanis (2012); Lavoie and Stockhammer (2013a).

3. Interestingly, the ILO initiative has been noticed by mainstream economics (see e.g. Francese and Mulas-Granados 2015), while the distributional regime research has been entirely ignored (see e.g. Bentolila and Saint-Paul 2003; Atkinson 2009; Elsby *et al* 2013).

4. The nature of the aforementioned critique is different from the one put forward in this paper: While Dos Santos argues that the wage-led, profit-led models are merely special cases of a wider model, Skott challenges the restrictiveness of the assumptions of the distribution-led models. Blecker points to different time horizons (short-term versus long-term) which have not been distinguished carefully enough. My approach is more fundamental: advocating paradigmatic pluralism in principal, scrutinising the merits of each paradigm becomes an integral part of scientific practise – this is the objective of this paper.

5. We shall be concerned only with long-run considerations here because ‘regimes’ are structural arrangements which are better able to explain long-run (i.e. growth) than short-run (i.e. business cycle) phenomena. Therefore, acknowledging the discussion about capacity utilisation (see e.g. Nikiforos 2016) we align ourself with those voices assuming that capacity utilisation in the long-run will always have to be at its ‘normal’ level, because the counter-argument has no clear analytical basis (see Nikiforos 2016 p 443). We realise that the concept of capacity utilisation is central to the Kaleckian approach, as it is the model specification which injects Keynesian aspects of (insufficient) aggregate demand into an otherwise rather classical model (see e.g. Dumenil and Levy 1993). Putting the potential divergence of actual and desired rates of capacity utilisation and its path of convergence out of focus here, solely implies not getting involved in intra-paradigmatic discussions. The objective of this paper is, as already mentioned, not to argue in favour of one of the distributional regimes but to scrutinise the approach of distributional regimes as an analytical and political tool. Moreover, we believe that Franke (2020) may provide a bridge between both positions.

6. Which, according to Keynes (1933a, 1933b), can only be true in a ‘real-wage, co-operative or neutral economy’ but not in a ‘money-wage or entrepreneur economy’ ‘… that we actually live today’ (Keynes 1933a p 78).

7. For competing empirical evidence see Marglin (1984) and Bowles and Boyer (1995).

8. Palley (2017) incorporates issues of personal income distribution by relaxing the classical savings assumption and introducing capitalist-managers earning wage as well as capital income. The paper shows ‘the importance of the distribution of wages for whether an economy is wage- or profit-led, and changes in the distribution of wages can change an economy’s character’ (Palley 2017 p 59).

9. This assumption is criticised by Post Keynesians of a Sraffian ilk. However, Sraffa’s critique should be understood not as a wholesale rejection of a ‘well-behaved’ production function, but as a theoretical proof that the specific properties of a ‘well-behaved’ aggregate production function (i.e. with continuously falling marginal productivities of

production factors) are not necessarily valid in all conceivable cases. The empirical relevance of this theoretical possibility is, however, still disputed. See, for example, Hamermesh (1986) and Felipe and McCombie (2005). I believe Blaug (1980 p 180f) is still good to follow: 'Everyone has now agreed that reswitching is perfectly possible, and everyone has also agreed that its possible occurrence destroys the concept of a necessarily monotonic relationship between capital intensity and relative factor prices. But how likely is it for reswitching to occur? (…) The upshot of the controversy in the literature so far seems to be that measurement of the likelihood of switching rests on measurement of the degree of input substitutability in an economy and this is an issue that is unlikely to be decisively resolved in the near future'.

10. The assumption of substitutability is based on the existence of a continuum of different production techniques at any point in time. This appears unrealistic and the limitation of production techniques to just one – a Leontief production function – may be a good short-term representation of industrial production. However, in non-industrial production, including administrative workers, more than just one available production technique with different labour coefficients at any point in time becomes as much conceivable as in the long-run (see footnote 16).

11. For Kalecki himself, the mark-up was determined by what he termed the 'degree of monopoly'. There are indications that in his earlier writings, the degree of monopoly was entirely dependent on the commodity market structure, while in his later writings, class struggle on the labour market also impacted on it (see Rugitsky 2013). Yet, what Rugitsky (2013 p 452) called a 'subtle argument' (citing Kalecki 1965 p 18) can, with less affection, also be termed 'flawed', for it implies that rising nominal wages threaten the competitive position of a firm or industry. However, what is true for a single firm under perfect competition (where the price is given), cannot be true for all firms under imperfect competition (where prices are set by the firms) and collectively bargained nominal wages.

12. And the wage structure, which has a strong impact on personal income distribution.

13. Eichner (1973) shows that the distributional conflict of the socioeconomic classes in the labour market will trigger a wage-price spiral, but will not change the mark-up. Class conflict over income distribution is a long-standing theme in classical political economics, yet attempts to prove (limited) wage-setting power of monopsonistic firms rest on the crucial assumption of real-wage setting that are untenable in a 'money wage economy' (see Keynes 1933a p 78).

14. For a Keynesian critique of the backward-looking approach of Kaleckian investment theory, in contrast to the forward-looking approach of Keynes, see Davidson (2000, 2002). In his later writings, Kalecki (1971 p VIII) appears to have been aware of his inadequacies, when he wrote: 'However, there is a continuous search for new solutions in the theory of investment decisions'.

15. Marx is – among the classical economists – most explicit about it: 'Since interest is merely a part of profit, paid according to our assumption by the industrial capitalist to the money-capitalist, the maximum limit of interest is marked by profit itself, and in that case the portion pocketed by the productive capitalist would be equal to zero' (Marx 1894/1909 p 421). This must be so out of pure logic because, otherwise, as the distributional system has only one degree of freedom, it would be over-determined.

16. For an elusive treatment see e.g. Terzi (1986). Keynes (1936 p 81) argues: 'The prevalence of the idea that saving and investment, …, can differ from one another, is to

be explained, I think, by an optical illusion due to regarding an individual depositor's relation to his bank as being a one-sided transaction, instead of seeing it as the two-sided transaction which it actually is. It is supposed that a depositor and his bank can somehow contrive between them to perform an operation by which savings can disappear into the banking system so that they are lost to investment, or, contrariwise, that the banking system can make it possible for investment to occur, to which no saving corresponds. But no one can save without acquiring an asset, whether it be cash or debt or capital-goods; and no one can acquire an asset which he did not previously possess, unless either an asset of equal value is newly produced or someone else parts with an asset of that value which he previously had. In the first alternative there is a corresponding new investment: in the second alternative someone else must be dis-saving an equal sum'.

17. Assuming a Leontief production function does not exclude the possibility of different 'Leontief techniques' using different fixed coefficients to produce the same output in historical time. Which of these different techniques – with higher or lower capital or labour coefficients – will be used depends on the relative rates of remuneration of the factors of production.

18. While Keynes's position on the interest rate as a purely monetary phenomenon, based on his conception of liquidity preference, is quite clear (although not undisputed), there has been a long and unresolved discussion about Sraffa's position (see e.g. Pivetti 1985; Nell 1988; Panico 1988). However, this is not our concern here.

19. One referee found this reasoning unclear as he believed the investment behaviour of firms to be undetermined if it is based – as described earlier – on a comparison of the (expected) profit rate with the (given) interest rate, which just move in step. At least in a monetary Keynesian understanding of the concept of marginal efficiency of capital (mec), this is exactly the case because the volume of investment is expanded to the point at which both rates – which are determined independently from each other – match.

20. Even if long-run cointegration between functional income distribution and economic growth can be established empirically – as I suppose it can – this would not imply any causation and could instead be spurious. Just take the example provided by Skott (2017 p 342f) where effective measures of competition regulations on commodity markets both increase the growth rate as well as the wage rate, by reducing the mark-up. Yet, the resulting change in functional income distribution does not causally affect the growth rate. The same is true if we consider the case of 'a revenge of the rentier' (a trend increase in the real interest rate) which may be associated with, but surely not causally linked with, an obstacle to long-term growth and an increase in the profit share (see Seccareccia and Lavoie 2016 p 209f.).

21. One referee suggested another point of critique: the empirical literature tends to generate very small and imprecise coefficients for the effect of the profit share on investment and consumption. Nevertheless, the authors of these empirical studies have continued to interpret their results as pointing to wage-led or profit-led demand regimes. But the correct conclusion, based on these small and often insignificant coefficients, would be that functional income distribution is not a major determinant of aggregate demand, contrary to the assumptions of distributional regime models.

22. See Razmi (2018) for a critique of the claim that the world as a whole, as a closed economy, must be wage-led.

23. There are two different, unrelated avenues of income inequality research: the first one took Okun's 'big trade-off' of equality and efficiency (Okun 1975) as its starting

point, in order to show the detrimental effects of low (wage) income inequality on employment, by hampering the structural change from industrial production to the service economy (see e.g. OECD 1994; Appelbaum and Schettkat 1995, 1996). The second avenue is about the measurement of income inequality and its determinants (see e.g. Atkinson 2015). However, both research directions focused on personal, not functional, income distribution. Carvalho and Rezai (2016) attempt to add aspects of personal income distribution to distributional models, rendering them more complex, more realistic but also more unpredictable in their regime character.

24. This has not yet been thoroughly investigated. For early attempts see Glyn (2009); Ranaldi (2016).

25. Makrevska Disoska and Toshevska-Trpcesvka (2016 p 327) speak of a 'dramatic decline... during the post-1980s neoliberal era' of the wage share. This alarming evaluation certainly does not fit the facts. Charpe *et al* (2019) speculate on thirty to forty year cycles of wage shares with the recent decline in some countries as rather a 'normal' development from a historical perspective.

26. Data are taken from the Ameco data base of the European Commission and display the adjusted wage share of the total economy as a percentage of current GDP at current factor cost. If the period under investigation is shortened to consider only the 2000s and 2010s, the trend of functional income distribution would become even more unclear. Lavoie and Stockhammer (2013b p 13) mention developments in functional and personal income distribution in a way that suggests the two concepts were similar, co-move together and, therefore, can be taken interchangeably. This is, at the very least, misleading.

27. Particularly if it comes about with a compression of personal income distribution.

28. See e.g. Autor *et al* (2017) for the impact of market concentration on functional income distribution or Kohler *et al* (2019) for the impact of financialisation.

29. Wage claims become 'too high' when they exceed the margin given by productivity increase and 'accepted' (by the central bank) inflation rate.

30. A very similar conclusion has been drawn by Peter Skott (2017 p 354): 'I do not believe, however, that the current focus on wage versus profit led growth has been very helpful'.

31. This is not to be taken as a reproach but as a fact (see e.g. Lavoie 2017). Indeed, this is how science advances: by providing extensions, alterations or alternatives of existing models and empirical tests. Yet, it also comes with opportunity costs.

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