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MONETARY POLICY, INTEREST PAYMENTS, INCOME DISTRIBUTION AND THE MACROECONOMY

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Abstract: During the last two decades, Post Keynesian/Kaleckian distribution and growth models have gradually focused their attention on the effects that monetary policy and financial variables are likely to have on the macroeconomy. These models usually rely on the influence of debt, debt services and interest rate variations on the short-run and the long-run equilibrium. Nonetheless, very little attention has been paid to the empirical investigation of the major hypotheses made by this specific body of literature. The aim of this paper is to partly bridge this empirical gap. We have developed a simple Post Keynesian/Kaleckian macroeconomic model to set out the hypotheses that variations in interest payments are likely to negatively affect consumption, capital accumulation and income. Our econometric analysis uses panel data for a sample of ten OECD countries and assesses the relevance of these hypotheses.

JEL Classifications: B22, D33, E20, E22

Keywords: Interest Payments, Distribution, Macroeconomy

INTRODUCTION

Up until the 1980s, one of the surprising aspects of the evolution of the Post Keynesian/Kaleckian distribution and growth theory (see e.g. Kaldor, 1955; 1957; Robinson, 1956; Kalecki, 1954; 1971) was that very little attention had been paid to the impacts that monetary policy and financial variables are likely to have on the short-run and the long-run equilibrium of capitalist economies. Davidson (1978) and Kregel (1985) have criticized these models for failing to incorporate money and financial forces. Nevertheless, the last two decades scholars have focused their attention on the influence of the rate of interest and of private sector's accumulated debt on the normal rate of profit, capacity utilization and the effective demand and growth.

More specifically, in the 1980s/90s, Post Keynesians and Kaleckians took Keynes's 'monetary theory of production' and Minsky's (1982) 'Financial Instability Hypothesis' into consideration and introduced monetary and financial variables into the Kaldorian, Kaleckian and Minskian variants of the Post Keynesian distribution and growth models (see the contributions by, among others, Asimakopulos (1975), Dutt (1984; 1989; 1992; 1995; 2006), Taylor (1985; 2004), Mott (1989), Mott and Slattery (1994a; b), Marglin and Bhaduri (1990), Jarsulic (1990),

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Lavoie (1992; 1995a; 1995b), Hein and Ochsen (2003), Hein (2006; 2007a), Lima and Meirelles (2006). Nonetheless, little attention (see e.g. Argitis and Pitelis, 2006; Argitis, 2009; Stockhammer, 2004) has been paid to the empirical research on exploring the impacts that monetary and financial variables are likely to have on distribution, accumulation and more broadly, on the macro-economy.

The aim of this paper is to fill some of this gap, exploring in particular the impact that rentiers' income, in the form of interest payments, might have on consumption, capital accumulation and output. The remainder of the paper is organized as follows. In section 2, a Post Keynesian/Kaleckian macroeconomic model is developed so as to examine the macroeconomic role of interest payments and the short-run equilibrium conditions are derived. In Section 3, we apply a comparative static analysis to explore the effects of interest payments on real consumption, real investment and real output. In Section 4, we introduce the statistical specifications to be tested, using panel data for ten OECD countries. Section 5 concludes the paper.

THE MODEL[1]

We assume a closed economy without any governmental economic activity. The model possesses certain Post Keynesian/Kaleckian features. First, the level of aggregate demand, which in our analysis is equal to the sum of consumption and investment demand determining output and employment in the short-run. Second, the distribution of income has a fundamental influence on aggregate demand. Third, the model incorporates three institutional sectors, industry, the rentier sector (e.g. banks, financial institutions and wealthy individuals) and workers. In this social structure, the economic and political conflicts over the distribution of income are not restricted between wage-earners (workers) and profit-earners (entrepreneurs), but incorporate interest-earners (rentiers). Fourth, the discount rate of interest, (i), is assumed to be exogenously determined by the central bank's monetary policy. This hypothesis reflects the Post Keynesian 'horizontalist' approach that views the rate of interest to be an exogenous variable for production and accumulation under the control of the central bank, whereas the quantities of credit and money are endogenous (see e.g. Lavoie, 1992; Rochon, 1999).

The model incorporates the following structure of equations and inequalities:

$$pY = W + INDP + INT \tag{1}$$

$$TCP = INDP + INT \tag{2}$$

$$INT = iD \tag{3}$$

$$W = wL \tag{4}$$

$$L = \delta Y \tag{5}$$

$$C = \alpha_1 INDP + \alpha_2 INT + \alpha_3 W \tag{6}$$

$$S = s\pi i INDP + s\pi r INT + swW \tag{7}$$

$$pI = I_0 + \beta_1 INDP + \beta_2 INT \tag{8}$$

$$I = S \tag{9}$$

$$p = \varphi w \delta. \quad (10)$$

$$\varphi > 1 \quad (11)$$

$$s\pi i > \beta_1 \text{ and } s\pi > \beta_2 \quad (12)$$

Equation (1) provides that the value of gross nominal national product, pY, equals the aggregate income of workers (wages and salaries), W, plus the aggregate income of entrepreneurs, INDP, and rentiers, INT. The sum of INDP and INT is equal to total capitalist profits, TCP, (equation 2). Entrepreneurs' income comes from production activities, in particular from investment in real assets. Note that INDP is the residual in income distribution; it can be forced down as a result of a redistribution of income in favor of INT and/or through a total capitalist profit contraction, resulting from a redistribution towards W, and vice versa. Hence, an increase in rentiers' income might operate as a source of distributional changes between industry and workers, as entrepreneurs might attempt to prevent a fall in their profit by reducing wage income.

In equation (3), we make a simple assumption that rentiers' income is assumed to be equal to the interest payments received from lending to industry. Interest payments are equal to the market interest rate, r, times the accumulated stock of industry's debt, D. The market interest rate is set by the rentier sector and is assumed to be a mark-up, (m_r), over the discount interest rate.

Workers' income comes only from their participation in the production process and is equal to the money wage, w, times the level of employment, L, (equation 4), while the level of employment is determined in equation (5) by δ, which is the ratio of employment to output, times Y. Workers' militancy affects the wage bargaining and the real wage. Labor is hired by monopolistic firms conditional to demand for their output.

Total consumption is equal to the propensities to consume of each social group in question times their total income received respectively (equation 6). We follow Kalecki (1971) and assume that $0 < \alpha_1, \alpha_2 < \alpha_3 = 1$ (see also Blecker, 2002). This implies that whenever income is distributed at the expense of workers, consumption decreases.

Equation (7) reveals that aggregate saving, S, is equal to the propensity to save out of the entrepreneurs' and rentiers' income, $s\pi_i$ and $s\pi r$ respectively, times INDP and INT. The propensity to save out of wages s_w=0. In the spirit of Keynes and Kalecki saving represents nothing more than that part of income not consumed, except, as it will be argued below, for the influence that both entrepreneur and rentier profits have on the investment financing.

Equation (8) gives us a simple investment function. The level of nominal investment spending, pI, equals I_0, plus a linearly increasing relation of the propensity of entrepreneurs to invest, β_1, times, INDP, as well as of the propensity of rentiers to lend industry, β_2, times INT. Equation (8) reveals the financing pattern of investment in real assets. We consider three main factors that influence investment decisions and the industry's process of accumulation. First, I_0 reflects Keynes's idea of entrepreneurs' animal spirits. Second, changes in the distribution of income between industry and workers. Higher real wages and/or more employment increase W and, ceteris paribus, reduce INDP. Third, changes in the distribution of income between industry and rentiers. A higher INT, ceteris paribus, reduces INDP. Yet, entrepreneurs' profit represents the incentive for investment spending in real assets. A fall in INDP discourages investment in real assets.

Equation (9) is the Keynesian saving-investment product market equilibrium condition, wherein aggregate demand determines aggregate supply, or investment determines saving by changing the level and distribution of national income, as in Kaldor (1956). Equation (10) reveals that the price level is determined by the mark-up, φ, times the index of labor cost, $w\delta$. Inequality (11) simply ensures that we have less than perfect competition, as it is appropriate in a Post Keynesian / Kaleckian picture of a capitalist economy. Inequality (12) holds that the propensity to save out of entrepreneur profits, $s\pi i$, and rentier profits, $s\pi r$, are greater than the propensity to spend out of entrepreneur profits on investment, β_1 and the propensity to lend out of financial profits for financing investment, β_2. In a two-class model it is usually assumed that a unified capitalist class decides how much to consume, to save and to invest. In addition, whenever capitalist saving = investment, the product market would be in equilibrium. A distinguished feature of a three-social group model is that it emphasises the devision of capitalist profit between industrial profit and interest as a key factor to saving and investment decisions. Considering that entrepreneurs control only a part of capitalist income, they can use only their part of saving to finance investment in industry. In this case and assuming consumption as given, the volume of investment will fall below the volume of investment required for macroeconomic equilibrium. In his General Theory, Keynes (1936) has argued that under capitalism it is not certain if industrial capitalists wish to invest all their saving. If we hypothesise that industrial capitalists wish to invest all their saving, the three-social groups model accomplishes the equilibrium condition of the two-class model only if rentiers decide to save and make available as much of their income as entrepreneurs need to finance a volume of investment equal to investment required for equilibrium. The rentier sector will behave in this way only if it is in its interests to do so. But in a free and uncertain market economy there is nothing that can make rentiers behave in this way and satisfy this prerequisite for equilibrium. There is no mechanism to adjust saving out of rentier profits with lending and investment required for economic stability. The hypothesis that $s\pi r > \beta_2$ is sensible and implies what Keynes's (1936) calls a speculative structure of financial markets, which does not channel resources towards the expansion of industry's stock of productive plants and equipment. When the structure of the financial markets institutionalises this inequality, then, ceteris paribus, an increase in rentiers' income is destabilizing, because savings out of the income is not dedicated to a great degree to long term productive investment. Nonetheless, whenever $s\pi i > \beta_1$ and/or $s\pi r > \beta_2$ investment fails to be equal to saving, deficient demand emerges and therefore disequilibrium results as a 'natural' pathology of a market economy.

A COMPARATIVE STATIC ANALYSIS

We use the method of comparative static analysis to tackle the question of a rise in rentiers' income in capitalist macro-performance. First, we solve the model for the equilibrium values of real consumption, real investment and real national income.

$$\frac{C}{P} = \alpha_1 \frac{\left\{ I_0 - \frac{INT}{P}\left[(\beta_1 - \beta_2) - (s\pi i - s\pi r)\right](\phi - 1)\right\}}{(\phi - 1)(s\pi i - \beta_1)} + \alpha_2 \frac{INT}{\phi w \delta} + \alpha_3 \frac{W}{\phi w \delta} - \alpha_1 \frac{INT}{\phi w \delta} \qquad (13)$$

$$I = Io + \beta_1 \frac{\left\{ Io - \frac{INT}{P}\left[(\beta_1 - \beta_2) - (s\pi i - s\pi r)\right](\phi - 1)\right\}}{(\phi - 1)(s\pi i - \beta_1)} + \beta_2 \frac{INT}{\phi w \delta} - \beta_1 \frac{INT}{\phi w \delta} \quad (14)$$

$$Y = \frac{Io\phi - \frac{INT}{w\delta}\left[(\beta_1 - \beta_2) - (s\pi i - s\pi r)\right]}{(\phi - 1)(s\pi i - \beta_1)} \quad (15)$$

Taking partial derivatives of real C, I and Y with respect to INT, we get the expressions that follow:

$$\frac{\vartheta C/P}{\vartheta INT} = \frac{-\frac{\alpha_1}{P}\left[(\beta_1 - \beta_2) - (s\pi i - s\pi r)\right](\phi - 1)}{(\phi - 1)(s\pi i - \beta_1)} - \frac{1}{\phi w \delta}(\alpha_1 - \alpha_2) \quad (16)$$

$$\frac{\vartheta I/P}{\vartheta INT} = \frac{-\frac{\beta_1}{P}\left[(\beta_1 - \beta_2) - (s\pi i - s\pi r)\right](\phi - 1)}{(\phi - 1)(s\pi i - \beta_1)} - \frac{1}{\phi w \delta}(\beta_1 - \beta_2) \quad (17)$$

$$\frac{\vartheta Y}{\vartheta INT} = \frac{-\frac{1}{w\delta}\left[(\beta_1 - \beta_2) - (s\pi i - s\pi r)\right]}{(\phi - 1)(s\pi i - \beta_1)} \quad (18)$$

Expressions (16), (17) and (18) reveal that the negative consumption, investment and income effect of a rise in rentiers' income depends on the consumption, lending and investment decisions of entrepreneurs and rentiers as well as on the income distribution between entrepreneurs, rentiers and workers. Considering as given the institutional and structural features of an economy, the greater the rise in INT the greater will be the negative demand and output effect of rentiers' income. In this reasoning, the rise in the income held by rentiers and other financial groups brings their interests, saving and lending practices at the centre of the problem of distribution, effective demand, accumulation and the stability of capitalism.

ECONOMETRIC EVIDENCE

Our model provides a framework and hypotheses to assess the impact that rentiers' income might have on the real C, I, and Y. First, a higher INT is assumed to have a negative impact on capital accumulation. Second, a higher rentiers' income is assumed to operate as a source of distributional changes at the expense of workers that is likely to have a negative impact on the growth of consumption. On the other hand, an increase in workers' income share might reduce, ceteris paribus, entrepreneurs' profit, which in turn negatively influences capital accumulation. Third, a higher rentiers' income is assumed to dampen aggregate income, while a higher workers' income might positively affect it. Obviously, rentiers' and workers' income are by no means the only factors contributing to changes in the growth of consumption, investment and output.

This necessitates econometric investigation aimed at explicitly testing the abovementioned hypotheses.

The potential effects of interest payments on investment and in particular on capital accumulation have attracted empirical attention in the last few years. At a macroeconomic level, Stockhammer (2004) empirically traces the link between financialization, measured by the sum of interest and dividend income of the non-financial business sector divided by the value added and the growth rate of gross business capital stock for the USA, UK, France and Germany in different periods. He uses a RAM model and an ADL model and provides evidence on the negative influence of financialization on aggregate business investment for the USA and France, and some support for the UK. Argitis and Pitelis (2006) econometrically assess the impact of finance's income measured by the ratio of the interest payments to profits (after interests) of the non-financial corporate sector for the USA and the UK for the period 1974-2002. They use an ARDL model and find that financialization, in the form of higher interest burdens, has a significant, negative impact on business sector capital accumulation. Argitis (2009) uses panel data for EU countries and provides evidence regarding the negative impact of interest payments on unemployment and aggregate demand. Stockhammer et al. (2007) provide empirical evidence that the wage share of income is positively related to private consumption.

Panel data analysis has been adopted for our econometric investigation in this paper. We estimate three fixed effects models for three different dependent variables, namely, the growth of consumption (GCON), the growth of gross fixed capital formation (GGFCF) and the growth of GDP (GGDP), and the interest income share (INTS) and the wage income share (WS) as independent variables, (for the sources and definition of variables see Appendix 1A).

$$\text{LSDV1 } GCON_{it} = \alpha_i + \underset{(-)}{\alpha_1 INTS_{it}} + \underset{(+)}{\alpha_2 WS_{it}} + v_{it} \tag{19}$$

$$\text{LSDV2 } GGFCF_{it} = b_i + \underset{(-)}{b_1 INTS_{it}} + \underset{(-)}{b_2 WS_{it}} + e_{it} \tag{20}$$

$$\text{LSDV3}GGDP_{it} = c_i + \underset{(-)}{c_1 INTS_{it}} + \underset{(+)}{c_2 WS_{it}} + u_{it} \tag{21}$$

(anticipated signs are given in parentheses).

Equations (19, 20, 21) are estimated[2] by pooling annual time-series and cross section data in levels, for the period 1981-2003, for nine OECD countries, namely Belgium, Canada, Finland, Germany, Italy, Norway, Portugal, Spain and the United Kingdom. The selection of the countries in the sample is totally determined by data limitations regarding the interest income.

The pooled method is used after having tested the degree of panels' heterogeneity (see Appendix 1B). A number of selection tests conducted to determine the selection of the most coherent model (see Appendix 1C). All tests suggest that the fixed effects models[3] are preferred to both the pooled models as well as to the random effects ones. The Wu-Hausman test indicates the presence of endogeneity, while after the application of the Bartlett's heteroskedasticity test and the LM serial correlation test, which are reported in Tables 5 and 6 (in Appendix 1D), there is evidence of serial correlation and of heteroskedasticity.

RESULTS

Our empirical findings are reported in Table 7 (see Appendix 1E). In order to deal with endogeneity, we apply the TSLS (Two Stage Least Square) estimator and instrument the right hand variables of our equations using their lagged values[4] while the 3SLS (Three Stage Least Square) estimator -that is the TSLS estimator of the Seemingly Unrelated Regression (SUR) method-[5] is employed for the heterosketasticity and serial correlation problems. Several specifications of equations (19, 20, 21) following a general to specific approach were estimated. On the basis of the results obtained it can be argued that the estimated parameters bear the expected signs and all pass the significance test at the 5% level. The negative signs of INTS(-1) and of INTS suggest that an income redistribution in favour of rentiers negatively influence the growth of consumption, investment and GDP. This evidence supports paper's major argument that a higher rentiers' income is likely to negatively affect the macroeconomy. On the other hand, the positive signs of WS(-1) and of WS reveal a positive effect of workers income on the growth of consumption and GDP. This evidence is in accordance with our model's hypotheses as well as with the Post Keynesian/Kaleckian wage-demand-led growth literature. The negative sign of WS in equation 20 supports paper's hypothesis that higher wage income is likely to exert a distributional effect on industry's profit and through the latter a negative effect on capital accumulation.

CONCLUSIONS

This paper conducts an econometric investigation aiming at showing how monetary and financial forces might affect the macroeconomy. The analysis is based on Keynes' and Kalecki's ideas. So far, we have argued that rentiers' income is likely to cause distributional effects that create slow growth of consumption, investment and output. In addition, we have argued that these effects depend on institutional and systemic characteristics of economies that determine the consumption, saving, investment and lending behaviour of industrial capitalists and rentiers. Our analysis allows therefore for institutional diversity, which is crucial to examine the effects of finance from a macroeconomic point of view. Further empirical research is needed to test the impact of other sources of rentiers' income in the form of dividends and capital gains on aggregate demand and on capital accumulation. Workers's income has also the expected positive effect on the macroeconomy. Nevertheless, Post Keynesian/Kaleckian econometric research must be carried out focusing on the impact that financial globalization might have on income inequality, wage stagnation as well as the financial fragility and instability observed in many countries.

Seen in this context, institutional changes and a low interest rate policy seem to be necessary to reduce the negative impact of rentiers' income on the macroeconomy. In this, Keynes's intellectual support is again of crucial importance. For Keynes government intervention in the banking system was necessary to reallocate financial resources away from the speculative financial markets towards productive industrial investment. These policies seem to be relevant today if we wish to create favorable conditions for a rentier-targeting policy structure which in turn will be a great advantage of the order of events that might reinforce industry's accumulation and macro-economic stability.

Appendix 1.A.

Data Definitions and Sources

GCON: Growth Rate of Household Final Consumption, Source OECD (2007), National Accounts, in constant prices 2000.

GGFCF: Growth Rate of Gross Fixed Capital Formation, Source OECD (2007), National Accounts, in constant prices 2000.

GGDP: Growth Rate of Gross Domestic Product, Source OECD (2007), National Accounts, in constant prices 2000.

INTS: Interest Income Received by Banks / GDP, Source OECD, Bank Profitability – Financial Statement of Banks, various years. We use as an indicator for financialization the interest income received by the banking sector as a percentage of the GDP. The numerator of this expression captures the receipts from lending activities, rather than financial investment in general and hence is a good proxy of the variable we use in the model. Total interest income received by banks also includes income from other type of lending, apart to industry. But data unavailability restricts us from using other variables. The variable interest income has been deflated by the GDP Deflator, 2000.

WS: Compensation of Employees / GDP, Source OECD (2007), National Accounts, in constant prices 2000.

All variables are in, or have been converted to Euros.

1.B.

We have used the Schwarz Information Criterion (SIC), which penalizes over-parameterization more heavily than tests at conventional significance levels. Specifically, after comparing each of the three fixed effects models- with dependent variables: GCON, GGFCF, GGDP- to the corresponding individual regressions through SIC, and we have selected the model that maximizes SIC. The results in Table 1 show that the fixed effects models are preferred for our estimation.

Table 1
Poolability Test (Homogenous Vs Heterogeneous Panels)

	$SIC_{fixed}/SIC_{individual}$
$LSDV_1$	450.6 >426.6
$LSDV_2$	250.6 > 237.3
$LSDV_3$	537.4 >483.3

1.C.

The Random versus the Pooled models are tested by the Breusch-Pagan LM test. The results are presented in Table 2, which shows that the pooled models are preferred.

Table 2
Breuch-Pagan LM Test

LM_{CON}	0.59
LM_{GGCF}	0.89
LM_{GGDP}	0.11

The critical value in 5% significance level is 3.84

The Fixed versus the Pooled models are tested by the F-test. Table 3 reveals that the Fixed effects models are preferred, while the results of the Hausman test used to assess the Random versus the Fixed models (Table 4) also indicate the fixed effects models to be appropriate for our estimation.

Table 3
Test Cross-section Fixed Effects

	Statistic
Cross section F_{CON}	11.19
Cross section F_{GGCF}	2.91
Cross section F_{GGDP}	2.91

The critical value for 5% significance level is 1.88

Table 4
Hausman Test

	Statistic
Cross section $Random_{CON}$	13.96
Cross section $Random_{GGCF}$	19.99
Cross section $Random_{GGDP}$	13.35

The critical value for 5% significance level is 5.99

1.D.

Table 5
Barlett Heterosketasticity Test

$LSDV_1$	45.3
$LSDV_2$	39.1
$LSDV_3$	49.5

Note: The critical value in 5% significance level is for χ^2_9 (16.92).

Table 6
LM Serial Correlation Test

$LSDV_1$	13.8
$LSDV_2$	28.4
$LSDV_3$	35.2

Note: The critical value at 5% significance level is for χ^2_1 (5.99).

1.E.

Table 7
Econometric Results

Dependent Variable	TSLS			3SLS		
$LSDV_1$ GCON	0.018	-0.18 INTS(-1)	+ 0.07 WS(-1)	0.02	- 0.18 INTS(-1)	+ 0.07 WS(-1)
	(0.67)	(-5.59)	(2.77)	(2.15)	(-7.57)	(5.82)
			R^2 0.46			R^2 0.64
$LSDV_2$ GGFCF	0.30	-0.32 INTS	-0.22 WS	0.24	-0.29 INTS	-0.15 WS
	(4.19)	(-3.95)	(-2.71)	(6.52)	(-8.76)	(-3.99)
			R^2 0.22			R^2 0.47
$LSDV_3$ GGDP	0.05	-0.05 INTS	+ 0.04 WS(-1)	0.012	-0.02 INTS	+ 0.05WS(-1)
	(0.28)	(-2.30)	(2.30)	(1.41)	(-5.50)	(5.33)
			R^2 0.10			R^2 0.31

Note: The t-values are given in parentheses. The critical value at 5% level of significance is (1.96).

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Notes

1. Needless to say, that the structure of our model is a formalization that does not correspond in a direct way to any actual economy but this something of a standard limitation of mathematical models that are used as a basis for econometric analysis of the real world open economies. Nonetheless, our simplifications can be used as a basic analytical context that allows us to discuss some of the effects of monetary variables on the macro-structure.
2. The Econometric software that was used for all estimations and computations is the Eviews 5.1. However, it must be noted that the Breuch-Pagan and the Barlett Heterosketasticity tests have been computed by the authors. Information about the data used, computations and estimated outputs is available by Dr. Stella Michopoulou, gargi@otenet.gr.
3. The fixed effects model is estimated by subtracting the within mean from each variable and the OLS is estimated by using transformed data. This implicitly allows us to control correlated time-invariant heterogeneity, i.e. for country specific institutional factors (see Arellano, 2003).
4. The instruments used are for the LSDV1: INTS (-2) and COES (-2), for LDSV2 : INTS (-1), INTS (-2), INTS (-3), WS(-1), WS(-2), WS(-3), for LSDV3: INTS (-1), WS(-2), WS(-3).
5. SUR is a Generalized Least Square (GLS) estimator that corrects for heteroskedasticity and contemporaneous correlation. This method is also known as the Parks estimator.

References

Arellano, M., (2003), Panel Data Econometrics. Oxford: Oxford University Press.

Argitis G., (2009), "Inflation Targeting and Keynes's Political Economy", Journal of Post Keynesian Economics, 31: 249-270.

Argitis, G. and Pitelis, C., (2006), "Global Finance, Income Distribution and Capital Accumulation", Contributions to Political Economy, 25: 63-81.

Asimakopulos A., (1975), "A Kaleckian theory of income distribution", Canadian Journal of Economics, III: 313-333.

Blecker R., (2002), "Distribution, demand and growth in neo-Kaleckian macro-models," In Setterfiled, M.(ed) 2002, The Economics of Demand-led Growth, United Kingdom: Edward Elgar.

Davidson, P., (1978), Money and the Real World. London: Macmillan.

Dutt A. K., (1984), "Stagnation, Income Distribution, and Monopoly Power", Cambridge Journal of Economics, 11: 25-40.

Dutt A. K., (1989), "Accumulation, Distribution and Inflation in a Marxian/Post Keynesian Models with a Rentier Class", Review of Political Economy, 21: 18-26.

Dutt A. K., (1992), "Rentiers in Post-Keynesian Models," In Arestis, P. and Chick, V., (eds) 1992, Recent Developments in Post-Keynesian Economics, Aldershot: Edward Elgar.

Dutt A. K., (1995), "Internal Finance and Monopoly Power in Capitalist Economies: A Reformulation of Steindl's Growth Model", Metroeconomica, 46: 16-34.

Dutt A. K., (2006), "Maturity, Stagnation and Consumer Debt: A Steindlian Approach", Metroeconomica, 57: 339-364.

Hein E., (2006), "Interest, Debt and Capital Accumulation – A Kaleckian Approach", International Review of Applied Economics, 20: 337-352.

Hein E., (2007), "Interest Rate, Debt, Distribution and Capital Accumulation in a Post-Kaleckian Model", Metroeconomica, 57: 310-339.

Hein, E. and Ochsen, O., (2003), "Regimes of Interest Rates, Income Shares, Savings and Investment: A Kaleckian Model and Empirical Estimations for Some Advanced OECD Economies", Metroeconomica, 54: 404-33.

Jarsulic M., (1990), "Debt and Macro Stability", Eastern Economic Journal, 15: 91-100.

Kaldor N., (1955-6), "Alternative theories of Distribution", Review of Economic Studies, 23: 83-100.

Kaldor N., (1957), "A Model of Economic Growth", Economic Journal, 67: 591-624.

Kaldor, N., (1982), The Scourge of Monetarism. Oxford: Oxford University Press.

Kalecki, M., (1954), Theory of Economic Dynamics. London: Unwin.

Kalecki, M., (1971), Selected Essays on the Dynamics of the Capitalist Economy. Cambridge: Cambridge University Press.

Keynes, J. M., (1936), The General Theory of Employment, Interest and Money. Cambridge: Macmillan and Cambridge University Press.

Kregel J., (1985), "Hamlet Without the Prince: Cambridge Macroeconomics without Money", American Economic Review, 75: 133-9.

Lavoie, M., (1992), Foundations of Post-Keynesians Economic Analysis. United Kingdom: Edward Elgar.

Lavoie M., (1995a), "The Kaleckian Model of Growth and Distribution and its Neo-Ricardian and Neo-Marxian Critiques", Cambridge Journal of Economics, 19: 789-818.

Lavoie M., (1995b), "Interest Rates in Post-Keynesian Models of Growth and Distribution", Metroeconomica, 46: 146-177.

Marglin, A. S. and Bhaduri, A., (1990), "Profit Squeeze and Keynesian Theory," In Marglin, S.A. and Schor, J. P., (eds) 1990, The Golden Age of Capitalism, Oxford: Oxford University Press.

Meirelles, A. J. A. and Lima, G. T., (2006), "Debt, Financial Fragility, and Economic Frowth: A Post Keynesian Macromodel", Journal of Post Keynesian Economics, 29:93-115.

Minsky, H., (1982), Inflation, Recession and Economic Policy. New York: Wheatsheaf Books.

Moore, B., (1988), Horizontalists and Verticalists: the Macroeconomics of Credit Money. Cambridge: Cambridge University Press.

Mott T., (1989), "The Structure of Class Conflict in a Kaleckian-Keynesian Model", Jerome Levy Economics Institute of Bard College, Working Paper, no. 21.

Mott, T. and Slattery, E., (1994a), "Tax Incidence and Macroeconomic Effects in a Kaleckian Model when Profits Finance Affects Investment and Prices may Respond in Taxes", Journal of Post Keynesian Economics, 16: 391-409.

Mott, T. and Slattery, E., (1994b), "The Influence of Changes in Income Distribution on Aggregate Demand in a Kaleckian Model: Stagnation vs Exhilaration Reconsidered," In Davidson, P. and Kregel, J., (eds) 1994, Employment, Growth and Finance, Cheltenham: Edward Elgar.

Robinson, J., (1956), The Accumulation of Capital. London: Macmillan.

Rochon, L., (1999), Credit, Money and Production. An Alternative Post-Keynesian Approach. Cheltenham: Edward Elgar.

Stockhammer E., (2004), "Financialization and the Slowdown of Accumulation', Cambridge Journal of Economics, 28: 719-741.

Stockhammer, E., Onaran, O. and Ederer, S., (2007), "Functional Income Distribution and Aggregate Demand in the Euro-area", Working Paper, No. 102, Vienna University of Economics & B.A.

Taylor L., (1985), "A Stagnationist Model of Economic Growth", Cambridge Journal of Economics, 9: 383-403.

Taylor, L., (2004), Reconstructing Macroeconomics. Structuralist Proposals and Critiques of the Mainstream. Cambridge Massachusetts: Harvard University Press.