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Varieties of demand and growth regimes – a review of some post-Keynesian approaches

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1.
Introduction

- Baccarro/Pontusson (2016, 2018): inclusion of PK demand-led growth into CPE, instead of NCM in VoC
- Schedelik et al. (2021): extend to EMEs
- Blyth and Matthijs (2017): IPE should open up towards PK macro

PK responses:

- Clarification of some misunderstandings and extension to welfare state models (Hein et al. 2021)
- Outline of PK macroeconomics more generally for CPE analysis (Stockhammer 2022, Stockhammer/Kohler 2022)
- Keep VoC and link with PK macro (Behringer/van Treeck 2018, 2019, Setterfield/Kim 2020)

➢ No systematic review of the PK research on demand and growth regimes (or models) as such

Purpose of this review

- Clarify the different uses of demand and growth regimes research in PKE, facilitate communication with CPE and IPE.

➢ Main growth determinants in a demand-led economy, like investment-led growth, distribution-led growth or autonomous demand-led growth

➢ 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

➢ Empirical-historical analysis of the development paths of an economy over time and in comparison, i.e. the co-existence of regimes

2.

Demand-led growth regimes in post-Keynesian distribution and growth models

Robinson's (1956, 1962) PK growth theory:

- First, investment determines saving also in long run accumulation and growth.
- Second, the out-of-equilibrium adjustment processes in historical and irreversible time affect the long-run equilibria, which are thus path dependent.

Strands of PK growth theory:

- Kaldor-Pasinetti-Robinson: distribution is endogenous and allows for adjustment of saving to investment, thus no active role (except for inflation barrier) (Kaldor 1957, Pasinetti 1962, Robinson 1956, 1962)
- Kalecki-Steindl: distribution is exogenous (mark-up, price and wage setting power), saving adjust to investment via capacity utilisation (Rowthorn 1981, Dutt 1984, Bhaduri/Marglin 1990, Kurz 1990)
- Sraffian supermultiplier: distribution is exogenous (power, institutions), saving adjusts to investment via variable autonomous expenditure-capital ratio (Serrano 1995)

Here thus focus on Kalecki-Steindl and Sraffian supermultiplier models

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

- Long-run growth is driven 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
- Paradox of saving
- Below full employment and full utilisation growth paths

➢ Distribution-led growth

Distribution conflict between capital and labour

Table 1: Wage- and profit-led demand and growth regimes in Kaleckian distribution and growth models			
	$\frac{\partial u^*}{\partial h}$	$\frac{\partial g^*}{\partial h}$	$\frac{\partial r^*}{\partial h}$
Wage-led demand and growth regime	–	–	+/–
Intermediate regime: Wage-led demand and profit-led growth	–	+	+/–
Profit-led demand and growth regime	+	+	+

- Neo-Kaleckian model (Rowthorn 1981, Dutt 1984, 1987): only wage-led growth for closed economy; profit-led regime possible via distribution effect on net exports (Blecker 1989)
- Post-Kaleckian model (Bhaduri/Marglin 1990, Kurz 1990): profit-led regime in closed economy via profit share effect on investment
- Palley (2017): Profit and wage distribution affect regime: Profit-led regime via increasing profit and/or wage share of workers
- Kapeller and Schütz (2014, 2015) and others: Seemingly profit-led regime via rising (wage-)inequality, relative income effects and debt-financed consumption

- Labour productivity growth as a positive function of wage share (real wage growth) and capital stock growth (Dutt 2006, Hein/Tarassow 2010, Naastepad 2006)

Table 2: Overall effects of a change in the profit share on the long-run growth regime				
	Wage-led demand regime: $\frac{\partial u^*}{\partial h} < 0, \frac{\partial g^*}{\partial h} < 0$	Profit-led demand regime: $\frac{\partial u^*}{\partial h} > 0, \frac{\partial g^*}{\partial h} > 0$		
$\frac{\partial u^{**}}{\partial h}$	–	–	+	+
$\frac{\partial g^{**}}{\partial h}$	–	–	+	+
$\frac{\partial \hat{y}^{**}}{\partial h}$	–	–	–	+
Growth regime	Wage-led	Wage-led	Inter-mediate	Profit-led

- Even with a wage-led demand and productivity growth regime, employment growth may be profit-led, if productivity growth responds more than output growth (Storm and Naastepad 2013)

Distribution conflict between rentiers and firms (creditors and debtors)

Table 3: Normal, intermediate and puzzling cases (regimes) in Kaleckian distribution and growth models with interest and credit			
	$\frac{\partial u^*}{\partial i}$	$\frac{\partial g^*}{\partial i}$	$\frac{\partial r^*}{\partial i}$
Normal case (regime)	–	–	–
Intermediate case (regime)	+	–	+
Puzzling case (regime)	+	+	+

- Long-term interest rate as distributional variable, affecting investment of firms and consumption/saving of rentiers
- With interest elastic mark-up, also capital-labour distribution is affected
- Regime depends on rentiers' propensity to consume, the effects of interest payments on firms' investment (together with demand determinant), distribution effect on wage share

Finance-dominated capitalism & increasing shareholder power

Table 4: Demand and growth regimes in finance-dominated capitalism with increasing shareholder power					
	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	+	+	+

- Rentiers' rate of return as distribution parameter, affected by shareholder power, with effects on internal means of finance
- Shareholder power also affects animal spirits of management

Profits without investment regime in finance-dominated capitalism

Kalecki's (1954, Chapter 3) profit equation derived from national income accounting, including government deficit spending but ignoring taxation in our case:

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

Π: profits, I: private investment, C_R: rentiers' consumption out of distributed profits (interest and dividends), G: government deficit expenditures, X: exports, M: imports, $S_W = W - C_W$: saving out of wages, W: wages, C_W: and consumption out of wages,:

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

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 = Π/K), if consumption out or rentiers income, government deficit expenditures, net exports and/or consumption out of wages rise (and thus saving out of wages fall).

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

- Long-run growth is driven by autonomous non-capacity creating demand: i.e. autonomous consumption, residential investment, exports or government expenditures.
- In the long run, the rate of capacity utilisation is at the normal/target rate and investment is fully induced.
- Wage and profit shares are mainly determined by power relationships and affect growth path but not growth rate
- Saving adjusts to investment via autonomous demand/capital ratio, paradox of saving only for growth path not for growth rate
- Below full employment but normal capital stock utilisation

➢ autonomous demand-led growth

Growth regime analysis: determination of the different components of autonomous demand growth of the multiplier

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

Y: income, C: consumption, C_a : autonomous consumption, c: the propensity to consume out of income, I: investment, I_a : residential investment, β: the inducement to invest by domestic income, G: government expenditures fully autonomous from domestic income, G_a, X: exports fully autonomous from domestic income X_a, M: imports, m: the propensity to import from domestic income.

Supermultiplier:

(4) $Y = \mu Z$,

autonomous demand: $Z = C_a + I_a + G_a + X_a$, mulitiplier $\mu = \frac{1}{1 - c - \beta + m}$.

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

With a constant multiplier ($\hat{\mu} = 0$), the autonomous growth rate ($\hat{Z}$) thus determines output growth ($\hat{Y}$).

Changes in the multiplier, i.e. changes in the propensities to consume, to invest and/or to import, will temporarily affect output growth, but not permanently. Distribution may affect theses propensities, and thus the multiplier.

2.3 Implications for the macroeconomics of growth regime research

- **Kalecki-Steindl approach**: **investment-driven growth**, positively affected by firms' growth/sales and (maybe) profitability expectations.
- Financing conditions, the autonomous part of technological progress, the effect of technological progress on investment, with positive effects
- Propensities to save out of different types of income with negative effects
- Kalecki (1971, Chapter 13): growth is also affected by the dynamics of 'external sources' of demand, i.e. government deficits and export surpluses
- **Distribution-led growth regimes**: Effects of distribution/power variables on equilibrium utilisation & growth;
  but: wage-led regime does not imply pro-labour policies!

➢ Critique: variable rate of utilisation; exogenous distribution

➢ **But:** Average historical processes are not long-run equilbria, target rate may be endogenous, exogenous distribution is open to political economy analysis

- **Sraffian supermultiplier**: **autonomous demand-driven growth**; focus on explaining growth of the different components of autonomous demand
- Distribution and behavioural coefficients regarding consumption, investment and imports are shifted to the backseat with only short-run level effects, at least in theory.

➢ **Critique**: fully induced investment downgrades animal spirits and expectations in uncertain world; is any component autonomous from income in the long run? Normal rate of utilisation may never be reached in historical time; exogenous distribution

➢ **Economy is always in a traverse**: Growth regime analysis has to focus on dynamics and drivers of autonomous demand, but also of the distributional and behavioural parameters determining the supermultiplier! Exogenous distribution is open to political economy analysis!

3.

The macroeconomics of finance-dominated capitalism and the co-existence of different demand and growth regimes

3.1. The macroeconomics of finance dominated capitalism

Changes in the structure, institutions and power relationships in modern finance-dominated capitalism affect the macroeconomy via (Hein 2012, Hein van Treeck 2010):

1. **Distribution**: Falling wage shares, rising wage inequality (management/workers), rising household income and wealth inequality
2. **Investment**: Rising shareholder power leads to lower aninmal spirits and lower internal means of finance, hence depresses investment.
3. **Consumption**: deregulated financial sector and asset price booms may lead to rising debt-financed consumption
4. **Current/capital account**: Liberalisation allows for financing high and persistent current account deficits – high risks of currency crisis.

1+2: **finance-burdened regime**, in particular if demand is wage-led
plus 3+4: **profits without investment or finance-led regimes**,
led by debt-financed private expenditures or net exports (or government deficits)

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

Used initially by Hein (2011a, 2011b)

Financial balances: financing of demand

(6) $$FB_P + FB_G + FB_E = 0$$

FB_P: financial balance the private sector, composed of private households and corporations, FB_G: financial balance of the public sector, FB_E: financial balance of the external sectors

Growth contributions: sources of demand

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

C: private consumption, G: public consumption, I: private and public investment (I), NX balance of goods and services

Table 5: Classification of demand-led growth regimes according to sources and financing of demand components	
Export-led mercantilist (ELM)	• 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)	Either • 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. Or • 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)	• 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 (DLPB)	• 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 and Hein (2019, p. 458).	

Table 6: Shift of demand and growth regimes according to five studies on developed capitalist economies (DCEs) making use of the national income and financial accounting decomposition approach					
		Post 2007-09 crisis			
		Debt-led private demand (boom) (DLPD)	**Domestic demand-led with high public sector deficits (DDL)**	**Weakly export-led (WEL)**	**Export-led mercantilist (ELM)**
Pre-2007-09 crisis	**Debt-led private demand (boom) (DLPD)**		New Zealand (Hea) UK (Dea, H, Hea) USA (Dea, H, Hea) South Africa (Dea)	Australia (Hea) Greece (Dea, Hea, H/M) Portugal (Hea) Slovakia (Hea) Spain (Hea)	Estonia (Dea, D/H, Hea) Hungary (Hea) Ireland (Hea, H/M) Latvia (D/H) Spain (H, H/M)
	Domestic demand led (DDL)	Turkey (Dea)	France (Dea, H, Hea, H/M)	Italy (Dea, Hea) Poland (Dea, Hea) Portugal (Dea, H/M)	EA-12 (H, H/M) Italy (H/M) Hungary (Dea)
	Weakly export-led (WEL)		Canada (Hea)	Czech Rep. (Hea) Iceland (Hea) Norway (Hea)	Denmark (D/H, Hea) Slovenia (Hea)
	Export-led mercantilist (ELM)		Finland (Hea, H/M)	Austria (Hea) Belgium (H/M) Japan (Dea, Hea) Sweden (Dea, H, Hea)	Austria (H/M) Belgium (Hea) Germany (Dea, H, Hea, H/M) Korea (Hea) Luxembourg (Hea) Netherlands (Hea, H/M) Switzerland (Hea)

Notes: Dea: Dodig et al. (2016), 2001-08, 2008-14; H: Hein (2019), 1999-2007, 2008-16; D/H: Dünhaupt and Hein (2019), 1995-2008, 2009-16; Hea: Hein et al. (2021), 2000-08, 2009-16; H/M: Hein and Martschin (2020), 2001-09, 2010-19.
Source: Based on Akcay et al. (2022, p. 83)

- Shift towards ELM or WEL, on the one hand, or DDL with high public deficits, on the other.

Table 7: Shift of demand and growth regimes in emerging capitalist economies from 2000-2008 to 2009-2019, making use of the national income and financial accounting decomposition approach					
		Second period (2009-2019)			
		Debt-led private demand (DLPD)	**Domestic demand-led with high public sector deficits (DDL)**	**Weakly export-led (WEL)**	**Export-led mercantilist (ELM)**
First period (2000-2008)	**Debt-led private demand (DLPD)**	South Africa			
	Domestic demand led with high public sector deficits (DDL)	Turkey	India	Mexico	
	Weakly export-led (WEL)		Brazil		Russia
	Export-led mercantilist (ELM)		Argentina	China	
Source: Based on Akcay et al. (2022, p. 87)					

- No clear pattern of regimes shifts

Insights from national income and financial accounting decomposition approach

- Structure of demand dynamics reveals related imbalances
- Financial balances are linked with debt dynamics and related imbalances
- Complementarity of regimes generates regional/global current account imbalances
- Finance-dominated capitalism is linked with the post-crises stagnation tendencies: pre- and post-crises regimes have been 'profits without investment' regimes (Hein 2019, 2022).

➢ Approach is compatible with different approaches towards growth drivers ... and has been embedded (in rudimentary ways) in such analysis by the proponents (distribution, private household sector indebtedness, share and house price indices, indicators of international competitiveness, ...) (Hein 2011a, 2011b)

3.3 A Sraffian supermultiplier growth de-composition: distinguishing between autonomous and induced demand dynamics

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.

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

with $dZ_t = dC_{at} + dI_{at} + dG_{at} + dX_{at}$ and $d\mu_t = \frac{\mu_{t-1}\left(dc_t + d\beta_t - dm_t\right)}{1 - c_{t-1} - \beta_{t-1} + m_{t-1}}$.

- Country studies: Freitas and Dweck (2013) for Brazil, Girardi and Pariboni (2016) for the USA, and Labat and Summa (2022) for Spain.
- Comparative multi-country studies: Morlin et al. (2022) for Germany, Japan, Sweden and the USA, Passos and Morlin (2022) for five Latin American countries, Argentina, Bolivia, Brazil, Chile and Mexico, and by Campana et al. (2022) for Brazil, Russia, India and China, the BRICs
- Supermultipliers are not constant and show some trends driven by changes in income distribution and behavioural parameters
- Relative importance of the different components of autonomous demand changes over time, and, of course, varies among countries.

➢ Links with economic policy and political economy

➢ Larger scale multi-country analysis for discovering patterns required

3.4 Focussing on demand/growth drivers

3.4.1 The type re-distribution and the presence/absence of relative income concerns for consumption determine the regime

- *Behringer and van Treeck (2018, 2019):* Apply traditional VoC approach, with a focus on the period before the 2007-09 crises; relative income drives debt-financed consumption in LME (US), because of rising personal inequality, lack of public provision of positional goods and deregulated financial markets; CMEs (Germany) with more equal personal distribution etc. follow export-led regime.

➢ Problem: lack of considering dynamics, empirical support for link between inequality and debt-financed consumption not supported by other studies (Stockhammer/Wildauer 2016, 2018)

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

- *Woodgate (2020, 2021a):* small open economies, exposed to foreign direct investment (FDI) inflows, profit shifting of multinational corporations (MNCs) and tax competition of 'commercialised states'.
- 'FDI-led' or 'tax competition-led' demand and growth regime in a single economy, if there is little response by other countries, first mover advantages
- Fallacy of composition

3.4.3 Regime shifts and growth drivers

- *Hein (2019), Hein and Martschin (2020) and Hein et al. (2021)*: type of regime shift from DLPD to ELM or DDL depends on requirement of deleveraging and possibility of government deficit spending
- *Kohler and Stockhammer (2022):* systematic cross-country analysis of growth drivers before and after the 2007-09 crises in 30 OECD countries, abandoning regime distinction: need for deleveraging (financial boom bust cycle), (lack of) expansionary deficit-financed fiscal policies are main drivers; international price competitiveness is not systematically related to growth performance
- *Jungmann (2021):* 19 emerging capitalist economies, includes indicators for income distribution as well as commodity price dynamics on top, mixed results, in line with Akcay et al. (2022) pattern of EMEs

➢ Examination of growth drivers is in line with PK approach, but not comprehensive, neither from Kalecki-Steindl nor from Sraffian supermultiplier perspective

➢ Extension towards a more complete theory-guided approach?

3.4.4 Macroeconomic policy regimes and demand and growth regimes

- *Hein/Martschin (2021):* keep typology based on the national income and financial accounting de-composition approach; link it with earlier macroeconomic policy regime approach (Hein and Truger 2005, 2009, Herr and Kazandziska 2011)
- A macroeconomic policy regime 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.
- PK macroeconomic policy mix proposed by Hein (2023, Chapter 6) and Hein and Stockhammer (2010), based on Kalecki-Steindl PK models, is used as a benchmark supporting a stable DDL regime

- Macroeconomic policy regime affects demand and growth regime and respective changes over time
- Hein/Marschin (2021): France, Germany, Italy, Spain
- Ianni (2022): Argentina
- Klassen (2022): Canada
- Kühnast (2022): Hungary, Poland

➢ larger scale analysis which allows for exploring differences and similarities among countries and country groups, as well as exploring some regional or global patterns, is missing so far.

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

- Three levels of PK growth regime analysis are not inconsistend or contradictory, but rather complement each other
- National income and financial accounting and Sraffian supermultiplier growth de-composition as such do not include an analysis of growth drivers and can thus be linked with the different types of growth driver lenses
- For growth drivers, on the one hand, some more model-guided and comprehensive approaches would be helpful.
- 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

5.
Conclusions

- Kalecki-Steindl and Sraffian supermultiplier approaches, although with different views on long-run growth determinants, have similar implications with regard to PK demand and growth regime analysis
- Since real world is always in a traverse, external/autonomous demand growth, determinants of investment, saving and net exports matter, for which income distribution plays a role, too.
- Current PK demand and growth regime analysis is at different analytical levels (national income and financial accounting de-composition, Sraffian supermultiplier growth de-composition, growth driver analyses), which are complementary, with several areas for future work.
- PK demand and growth regime analysis of finance-dominated capitalism requires more political economy work and is widely open to CPE/IPE, for which it provides sound macroeconomic foundations.
- But see also Cornwall & Cornwall (2001), Steindl (1976, 1979), Bhaduri & Steindl (1985), Smithin (1996) on the political economy of the transition from golden age to neoliberalism/finance-dominated capitalism!

Thank you