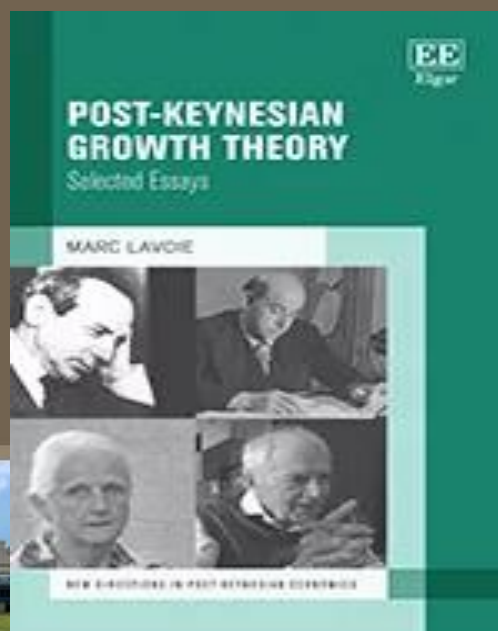
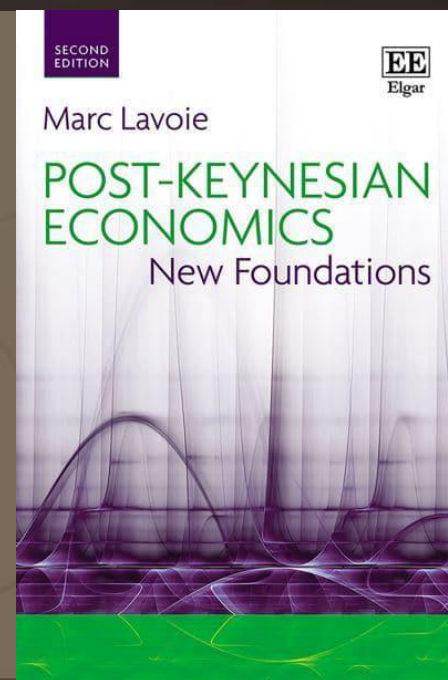


History and Fundamentals of Post-Keynesian Macroeconomics

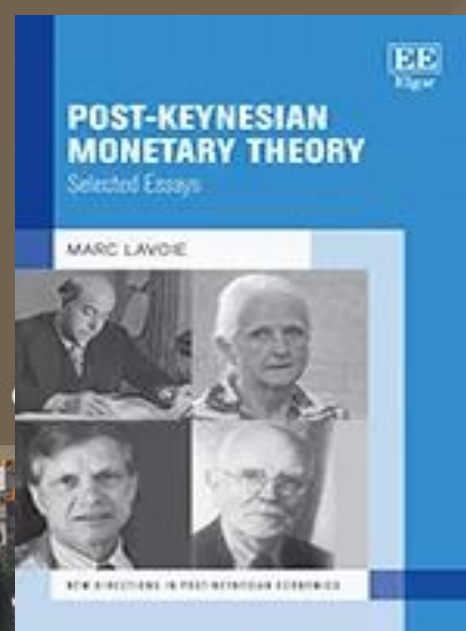
Marc Lavoie

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Outline

- 1. We set post-Keynesian economics within a set of multiple heterodox schools of thought, in opposition to mainstream schools and quickly identify the main features (presuppositions) of heterodoxy, contrasting them to those of orthodoxy.
- 2. We cover a brief history of post-Keynesian economics, in particular its founding moments.
- 3. We identify the additional features that characterize post-Keynesian economics relative to closely-related heterodox schools.
- 4. We delineate the various streams of post-Keynesian economics: Fundamentalist, Kaleckian, Kaldorian, Sraffian, Institutionalist.
- 5. PKE in the limelight today

PART I

Heterodox schools and Keynesian schools

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Heterodox vs Orthodox economics

- **HETERODOX ECONOMICS**

- NON-ORTHODOX PARADIGM
- POST-CLASSICAL PARADIGM
- REVIVAL OF POLITICAL ECONOMY
- REAL-WORLD ECONOMICS
- NEW PARADIGM ECONOMICS

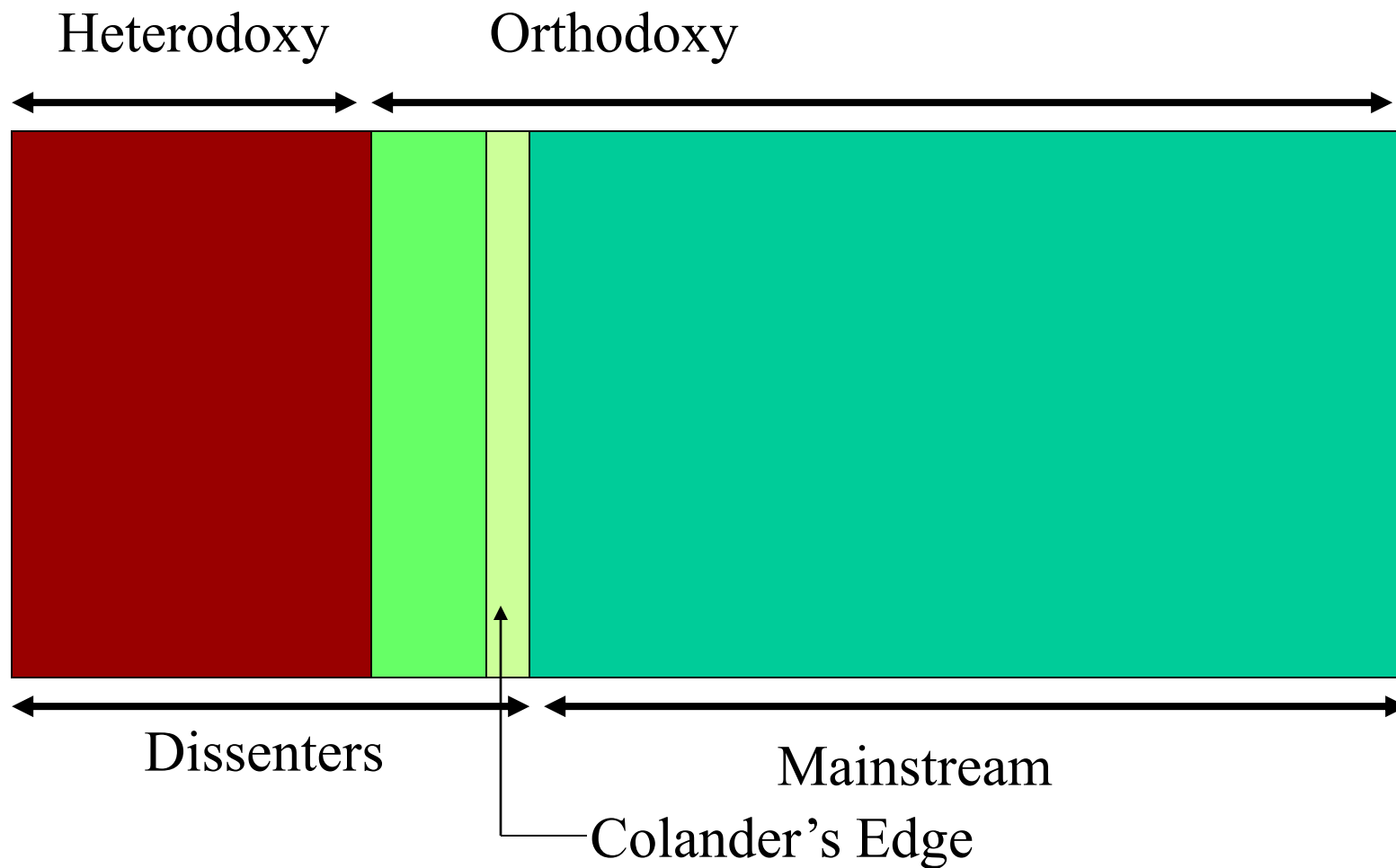
- **ORTHODOX ECONOMICS**

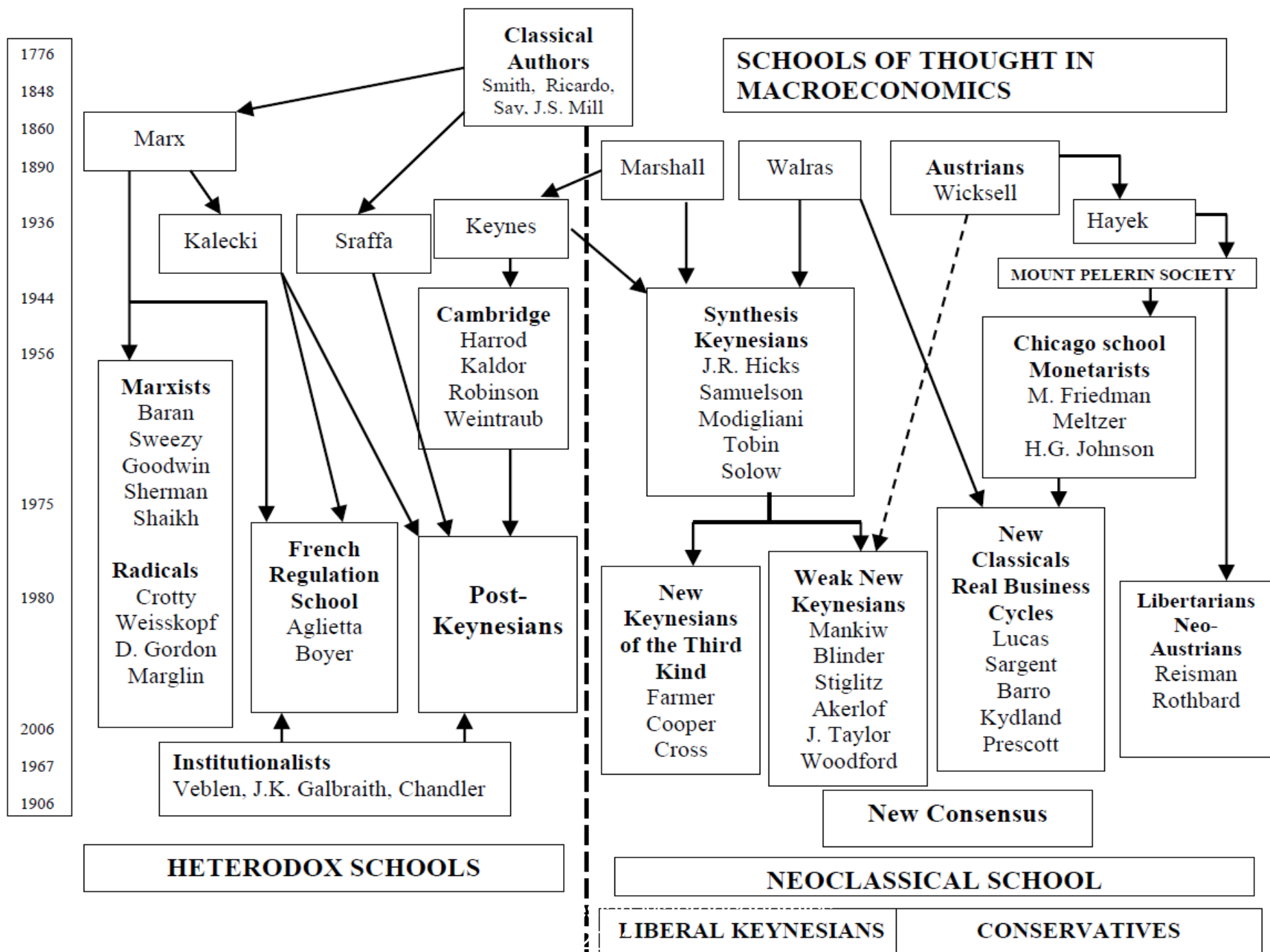
- DOMINANT PARADIGM
- THE MAINSTREAM
- NEOCLASSICAL ECONOMICS
- MARGINALISM
- OLD PARADIGM ECONOMICS

Other Names

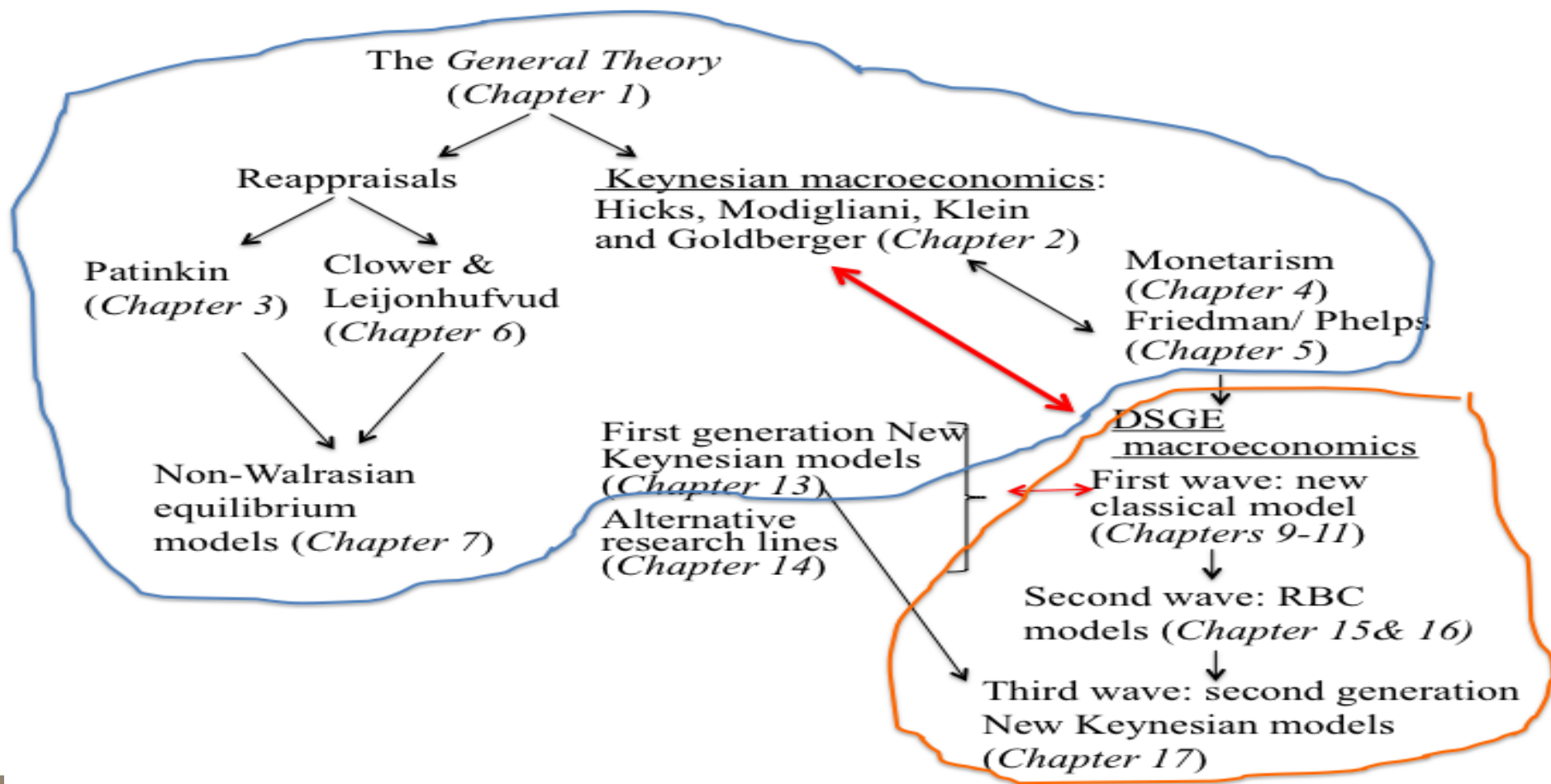
- Classical-Keynesian political economy (Bortis)
 - Radical political economy (Sawyer)
 - Institutional political economy (Postel and Sobel)
 - Critical political economy (Marxian?)
 - Modern political economy (policists)
 - *Heterodox political economy*
-
- Economics is the study of the process by which society brings its available resources into production, and the distribution of that production among its members (John Weeks 2012)

Dissenters and “the edge”





Mainstream macroeconomics according to Michel De Vroey (2016)



Heterodox schools in economics

- Post-Keynesians
- Sraffians (Neo-Ricardians)
- Original (old) Institutionalists
- Marxists, Radicals
- Structuralists (Latin-American school, Furtado, L. Taylor)
- French Regulation School, Social Structure of Accumulation (SSA)
- Neo-Schumpeterians
- Circuitists (Monetary theory of production)
- Free Berlin University school (recent symposium in EJEEP)
- Social economics and Humanistic economics
- Economists of « conventions »
- Green economics (Ecological Economics)
- Old behavioural economics
- Feminist economics ?
- And no doubt many others (Ghandi economics, Polanyi, Henry George, Gesell, agent-based, system dynamics, Neo-Austrians (?), etc.)

What do all these heterodox schools have in common?

- Differences between schools of thought and their relative ranking have a lot to do with the sociology of the profession.
- Some of the discrepancies are due to specialization in certain fields (cf. T. Lawson).
- Still, in my opinion there are broad features that characterize heterodox and orthodox schools.
- These are called the presuppositions of research programmes by philosophers of science: they are things that cannot be questioned

Hodgson's 2019 critique

- Heterodox economics as often defined (by Lee 2008) does not include all possible candidates (Austrian, feminist, Institutional-evolutionary, Marxian-radical, Post Keynesian/Sraffian, social economics)
- Heterodox economics is often associated with **ideological** left-leaning opinions.
- **There is no agreement on the proper definition.**
- Heterodox economists do not seem to have endorsed **Tony Lawson's definition**, based on ontology and the need to avoid formalization in nearly all circumstances.

Five Presuppositions of the heterodox programme vs those of the mainstream

	Paradigm	
Presupposition	Heterodox schools	Orthodox schools
Epistemology	Realism	Instrumentalism
Method	Holism, organicism	Individualism, atomicism
Rationality	Reasonable rationality	Hyper rationality Optimizing agent
Economic core	Production, growth, income effects	Exchange, scarcity, substitution effects
Political core	Regulated, tamed, markets	Unfettered market optimism

What about neo-Austrians, analytical marxism, and new behavioural economics?

- They do not fit most of the criteria defining the heterodox paradigm.
- This is also Davidson's (1989, p. 469) assessment, who says that 'the Austrians have neither logically differentiated themselves from the neoclassical approach, nor raised major problems in it'.
- The same could be said about analytical Marxism (Mary Wrenn 2007, p. 102).
- New behavioural economics take neoclassical economics as the benchmark

Three further candidate presuppositions: 1. Ideology

- Variant of fifth: Ideology (Guerrien 2009, Marglin 1984, Samuelson 2007) [but see Hodgson 2019].
- ‘Economists produce the sorts of knowledge that its patrons desire’ (Mirowski, 2011, p. 508).
- Paul Krugman (2013): ‘the austerity agenda looks a lot like a simple expression of upper-class preferences, wrapped in a facade of academic rigor. What the top 1 percent wants becomes what economic science says we must do’.

2. Open/Closed systems

- Another defining dichotomy between orthodox and heterodox economics has been put forth by Lawson (1997) and Dow (2000). Heterodoxy would entail a belief in open systems, while orthodox economics would deal with closed systems.
- Dubious distinction, in my opinion, and that of John Smithin (2004, pp. 67-70) and Mearman (2006).

3. A further candidate: the abuse of mathematical methods (Lawson CJE 2013)

- ‘The insistence that mathematical methods should be everywhere used is not only mainstream doctrine; it is the cause of the discipline’s continuing ills’ (Lawson, 2009b, p. 109).
- Sheila Dow (2000, p. 164): ‘the guiding principle of orthodox economics is mathematical formalism’....‘heterodox paradigms share a rejection of mathematical formalism’.

-

3.2 Mathematics and PKE?

- Several post-Keynesians endorse ‘the cautious use of formal methods in economics’ (Fontana, 2009, p. 39) or argue that ‘formalism is fine, but it must know its place’ (Chick, 1998, p. 1868).
- It is a source of tension between the various strands of PKE, and sometimes between PKE and other heterodox schools of thought (mainly Institutionalists).

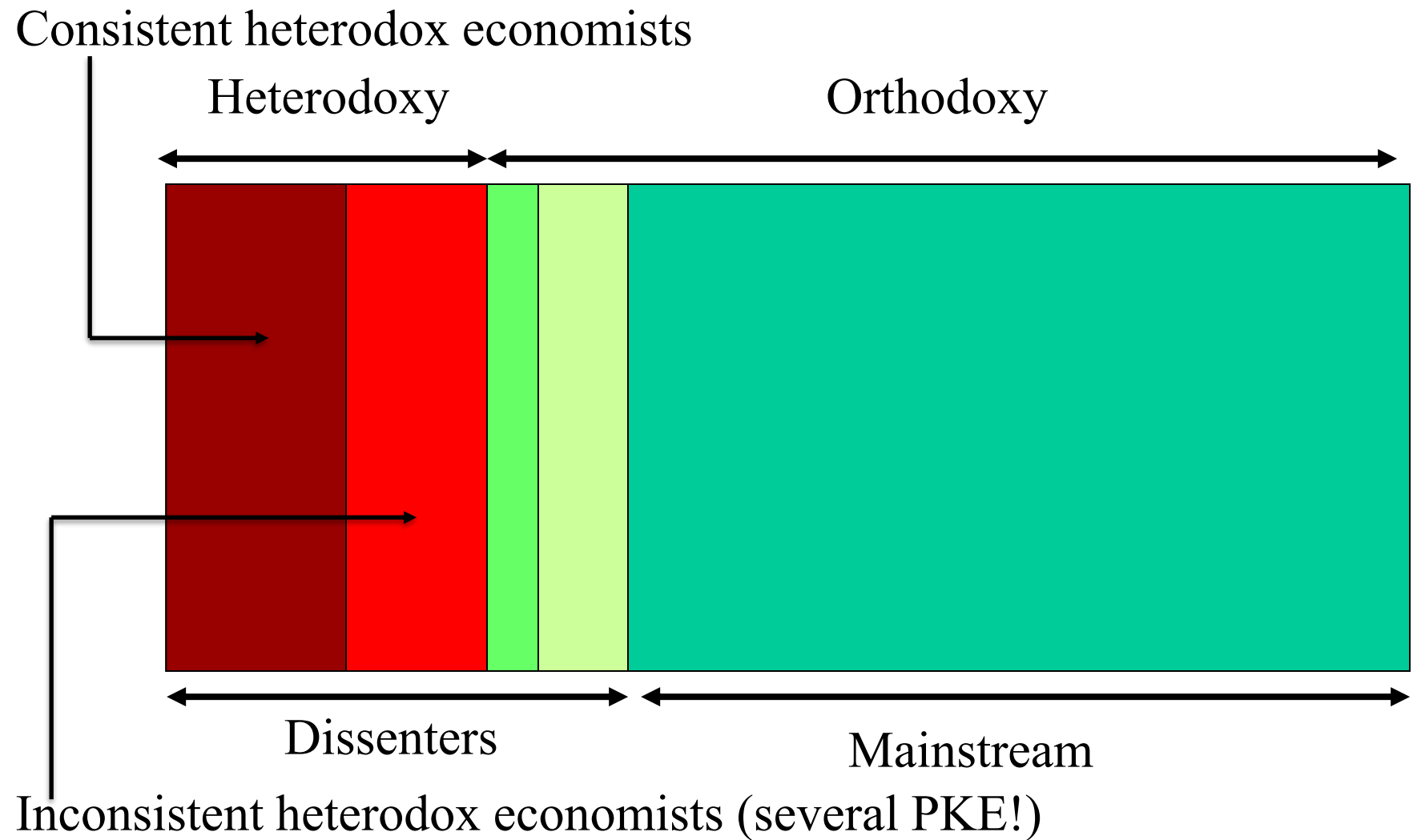
Consistent and inconsistent heterodox economists

- Slade-Caffarel (2019, *CJE*) revisits the arguments of Lawson : ‘*The only context in which it is appropriate to use such mathematical modelling ... is in the analysis of closed systems of isolated atoms.*’.
- I used to understand this as applying to neoclassical theory (GET, DSGE models), but not so much to macroeconomic theory such as Minsky models or neo-Kaleckian growth models.
- Others (Keen, ABM authors) thought that non-linear, complex, models, eschewed the Lawson critique.
- But SC (2019) tells us that Lawson (2013; 2017-18) berates self-described heterodox economists who ‘*prioritise the goal of being realistic*’, and yet fail to recognise the limited scope of modelling methods.
- SC calls them ‘***confused, inconsistent, heterodox economists***’.

Lawson's ambivalence resolved by himself in 2019

- *'In the past I have been quite positive about the heterodox project; recently less so. I think it's changing in the sense that **people are now claiming the heterodox label for themselves whilst allocating much of their time to mathematical modelling.***
- ***So heterodox contributions have become increasingly weak and of little relevance to the real world.***
- *Just as important as dropping the term "neoclassical" is perhaps that modelling-dominated projects give up the term "heterodox". They increasingly are not.'* (Lawson 2019)
- When asked specifically about stock-flow consistent (SFC) modelling, Lawson (2019) replies that even though their authors are concerned with the way the world is, **their work is 'worthless all the same because the method is irrelevant'. !!!**

The New View: Slade-Caffarel 2019



PART II

History of post-Keynesian economics

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Phases in the creation of PKE

1. Mid-1950s: The Beginnings
2. 1960s-early 1970s: The Capital controversies, the response to monetarism
3. Mid 1970s-1980s-early 1990s: The Romantic Age
Syntheses, institutionalization
4. 1990s: The Age of Uncertainty, Methodology
5. 2000s: The Age of Policy

1.1 Where are the origins?

- **In the 1930s, the 1950s, or the early 1970s?**
 - Keynes's banana parable, 1929
 - Keynes's General Theory 1936
 - Kalecki: 1933 (cycle), 1937 (principle of increasing risk), 1939 (positive role of real wages), 1942 (A theory of profits)
 - Kaldor 1934: multiple equilibria, instability, path-dependence
 - Lerner (1943) functional finance

1.2 JR: The Accumulation of capital (1956) and Kaldor's article on income distribution (1956)

- The *Accumulation of capital*: Great book, that covers the dynamic long-run implications of Keynes, inspired by Harrod, Kalecki, Myrdal, the revival of classical questions, Sraffa's introduction to Ricardo's Principles, Wicksell (Kahn): growth, choice of technique, money
- A *neo-Keynesian* or *Cambridge* theory of income distribution, based on macroeconomics, instead of marginal productivity (Robinson, Kaldor 1956, Pasinetti 1962)
- First awareness that the theory being discussed at Cambridge is different from that in the US (Mata, 2004).
- This theory of distribution gave rise to hundreds of papers based on Robinson/Kaldor/Pasinetti.

2.1 The Capital controversies, 1960s and early 1970s

- Started with Robinson (1953-4) and Sraffa (1960).
- Capital reversing and reswitching show that the rate of return on capital cannot be a measure of its « scarcity ».
- The controversies put in jeopardy the standard production function based on substitution.
- Further work has shown that the apparent success of neoclassical production functions (Cobb-Douglas, CES, etc.) arises because they replicate national account identities (Shaikh 1974).
- More recently, it has been shown that econometric regressions on production functions estimate profit and wage shares in national income instead of elasticities of factors of production (Felipe and McCombie 2013).

2.2 The response to Monetarism

- Money is endogenous (Kaldor 1970, Kahn 1959, Robinson 1970, Cramp 1970, Le Bourva 1959 and 1962).
- Central banks control short-term interest rates, not the supply of money.
- Causality between money and inflation is reversed.
- Causality between bank reserves and bank deposits is reversed.
- Central bank open market operations are essentially defensive, trying to stabilize interest rates.

2.3 The Americans join in...

- Sidney Weintraub (1958) starts criticizing the neoclassical synthesis.
- Basil Moore and Paul Davidson go to Cambridge on their sabbatical in the late 1960s, and Davidson finishes his book *Money and the Real World* (1972)
- In December 1971, at the AEA meeting, a dinner gathers about 15 economists (Chick, Eichner, Davidson, Kregel, Minsky, Nell, Asimakopulos, Don Harris, Kenneth Boulding) with Joan Robinson.
- Robinson and Eichner agree on the denomination '**post-Keynesian economics**' around 1970.

2.4 The Eichner and Kregel article in the JEL Dec. 1975

- Eichner and Kregel claim that a new *Paradigm* has been born, called *Post-Keynesian economics*.
- They summarize the new school with the following characteristics:
 - A concern with growth and cycles;
 - A concern with history and time;
 - A neo-Keynesian/institutional theory of income distribution;
 - Incomplete information, fundamental uncertainty;
 - Imperfect markets with oligopolies, and constant marginal costs;
 - A monetized production economy;
 - Saving adjusts to discretionary expenditures (investment);
 - Purpose: to explain the real world as observed empirically.

3.1 The Romantic Age:

A grand synthetic theory: many textbooks

- Davidson 1972, 1982
- Jan Kregel 1973
- Hyman Minsky 1975
- Eichner 1979 Guide to PKE
- Peter Reynolds 1987
- Alfred Eichner 1987
- Amittava Dutt 1990, Lance Taylor 1991
- Marc Lavoie 1992
- Philip Arestis 1992
- Cardim de Carvalho 1992
- McCombie and Thirlwall 1994
- Thomas Palley 1996

3.2 The institutionalisation of PKE

- The creation of *The Cambridge Journal of Economics*, 1977, created by young scholars at Cambridge, founded on the tradition of Marx, Keynes, Kalecki, Robinson and Kaldor (see Ashwani Saith, *Cambridge Economics in the PK era*, 2022).
- *The Journal of Post Keynesian Economics*, 1978, edited by Weintraub and Davidson, based on Keynes, Robinson, Kaldor, Kahn, Kalecki, Lerner, Harrod, Galbraith, Minsky, new Hicks.
- Other journals (Thames Papers, ROPE, MECA), Summer schools (Trieste, Knoxville, UMKC, Berlin, Levy, PKES), PKT network, PKSG (now PKES), newsletters, blogs, conferences.
- *Then later IRAE, SCED, INTERVENTION:EJEEP, ROKE, IJPE, Bulletin of PE, BKR, PSLQR, REPE*
- *FMM conferences, PK associations*

4. The Age of Uncertainty, 1990s

- The focus moves from theory to methodology:
 - Methodological disputes over the proper critique of neoclassical theory
 - History of economic thought
 - The *Collected Writings* of Keynes
 - The *Treatise on Probability* and the notion of Uncertainty

5. The Age of Policy, 2000s

- Since the late 1990s, the emphasis has moved from methodology to policy.
- A large proportion of papers at PK conferences are devoted to policy issues (MMT).
- A large proportion of the papers use empirical analysis and econometrics.
- There is a return to formalization:
 - the Kaleckian growth models
 - Goodwinian models
 - Stock-flow consistent (SFC) models, and later agent-based models.
 - Ecological macroeconomics

PART III

The presuppositions of post-Keynesian economics

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PKE adopt the five general heterodox presuppositions

- Realism, holism, reasonable rationality, production, the need to tame markets.
- Holism: See next slides on macroeconomic paradoxes
- Taming markets is required because post-Keynesians often underline *disequilibria and instability*.
- There are endogenous destabilising forces at work and price mechanisms cannot in general counteract upon these (example: labour market, financial markets).

Distrust in unfettered markets

- « On the one side are those who believe that the existing economic system is, in the long run, a self-adjusting system, though with creaks and groans and jerks and interrupted by time lags, outside interference and mistakes On the other side of the gulf are those that reject the idea that the existing economic system is, in any significant sense, self-adjusting »
- Keynes, CW, xiii, p. 487 (1934)

Some general macroeconomic paradoxes

Paradox of thrift (Keynes, 1936; Robinson, 1956)	Higher saving rates lead to reduced output or reduced growth
Paradox of public deficits (Kalecki, 1971)	Government deficits raise private profits
Paradox of costs (Kalecki, 1969; Rowthorn, 1981)	Higher real wages lead to higher profit rates (wage-led growth regime)
The open-economy paradox (Blecker, 1989)	Higher real wages may lead to faster growth despite all countries being in a profit-led regime
The flexibility paradox I (Tobin, 1981; Caskey and Fazzari, 1987; Krugman, 2012)	The more flexible nominal wages and prices are, the more dramatic the perverse debt effects will be
The flexibility paradox II (Seppecher, 2012; Dosi et al., 2017)	The more easily employers can hire and fire employees, the less employment there is
The flexibility paradox III (Carnevali et al., 2020)	Sticky prices of exports stabilize the trade balance whereas exchange rate-sensitive export prices are destabilizing
The forecasting paradox (Dosi et al., 2020)	Better forecasting by individual firms may not lead to improved macroeconomic performance of the economy

Some crisis-related macroeconomic paradoxes that every policy maker should be aware of

Paradox of tranquillity (Minsky 1975)	Stability is destabilizing
Paradox of debt (I. Fisher 1933, Steindl 1952)	Efforts to de-leverage might lead to higher leverage ratios
Paradox of liquidity I (Minsky 1986, Nesvetailova 2007)	Financial innovations seem to increase liquidity when in fact they are reducing it
Paradox of liquidity II (Dow 1987)	Efforts to become more liquid transform liquid assets into illiquid ones – the Minsky moment
Paradox of risk (Wojnilower 1980)	The possibility of individual risk cover (MBS, CDS) leads to more risk overall
Paradox of degrading standards (McCauley 2009)	Default rates are low because of the degradation of underwriting standards

Five specific post-Keynesian presuppositions (Hein, Lavoie)

- Principle of effective demand (investment causes saving)
- Monetary theory of production
- Historical and irreversible time (path dependence)
- Fundamental uncertainty
- Distributional issues and conflicts

What about econometrics and PKE ?

- ‘While Post Keynesians should be skeptical about prediction, this does not mean that they should abandon all empirical work’ (Holt, 2007, p. 101).
- Bill Mitchell (2007) says that policy makers require hard numbers for policy making, and these can be provided either by back-of-the envelope calculations or by econometrics.
- Econometrics is a powerful weapon in the battle of ideas. Economics is all about rhetoric (Deirdre McCloskey 1983).

PART IV

The various strands of post-Keynesian economics

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The Hamouda and Harcourt (1988) 3-way typology

- They identify three strands:
- **The Fundamentalist** (American or Marshallian) Post Keynesians: Weintraub, Davidson, Minsky, Shackle
- **The Kaleckians**: Kalecki, Steindl, Asimakopulos, Eichner
- **The Sraffians**: Sraffa, Eatwell, Garegnani
- They admit that they don't know where to put Robinson, Kaldor, Goodwin, Godley, Pasinetti

The Lavoie (2010, 2014) 5-way current typology

- **Fundamentalist Keynesians:**
 - Monetary economy, liquidity preference, uncertainty, methodology
 - Davidson, Kregel, Chick, Dow, Rotheim, Tily, Hayes, Fontana
- **Kaleckians:**
 - Pricing, growth, cycles, employment, profits, class conflict
 - Sawyer, Bhaduri, Dutt, Blecker, Fazzari, Hein, Onaran, Stockhammer,
- **Sraffians:**
 - Relative prices, choice of technique, capital theory, supermultiplier
 - Salvadori, Kurz, Schefold, Serrano, Cesaratto, Stirati
- **Institutionalists:**
 - Institutions (firms, banks, behavioural eco)
 - Fred Lee, Peter Earl, Arestis, Minsky, Wray, Fullwiler, (MMT), Galbraith
- **Kaldorians:**
 - Growth, money, international, productivity, hysteresis
 - Godley, Thirlwall, McCombie, Palley, Skott, Setterfield, Storm, Naastepad
 - **Ecclectic authors go across all or at least two of the categories, for instance Nell, younger PKs**

PART V

Post-Keynesian economics in the limelight today

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Impact: or introduction to next lectures

- Monetary theory (Change in central banking procedures)
- Financial Instability Hypothesis (Subprime crisis)
- Modern Money Theory (MMT) and fiscal policy (QE)
- Monetary circuit theory/currency hierarchy
- Wage-led profit-led growth and distribution models (ILO)
- Income and wealth inequality, functional and personal income distribution (Piketty)
- Ecological macroeconomics (Kaleckian and SFC models)
- Balance-of-payment growth models (Latin America)
- Inflation theory (current situation!)
- Agent-based models (SFC constraints)
- Comparative political economy, varieties of capitalism
- Micro left out

Monetary theory

- A number of central bankers now make reference to PK works in monetary theory: banks are not only intermediaries, and causation from loans to deposits is reversed
 - Bank of England (McLeay et al. 2014; Jakab and Kumhof 2016, 2019)
 - Bundesbank
 - Central banks of Poland, Hungary,
 - Borio (BIS)
 - Gross (IMF)

Financial instability hypothesis

- The financial crisis of 2008 has resurrected the work of heterodox economists (Minsky, Orléan)
- Provides a better understanding of the GFC
- Paradoxes of liquidity
- Minsky Moment
- Formalization of Minsky FIH (Keen 1995, several mathematicians Grasselli; Nikolaidi and Stockhammer 2017)
- Critical finance (Gabor, Sissoko, Mehrling)

Modern Monetary Theory and PKE

- Wray, Mitchell, Bell-Kelton, Tcherneva, Forstater, Tymoigne
- MMT is without a doubt part of the post-Keynesian tradition.
- The implicit MMT macroeconomic theory relies on post-Keynesian macroeconomic theory;
- MMT relies on a credit-creation view of banking – the endogenous money, where central banks essentially pursue defensive operations;
- MMT authors, like post-Keynesians, reject 100 percent reserve-related schemes and reliance on crypto-currencies;
- Both MMT and post-Keynesian economists believe that fiscal policy, not monetary policy, should be the main tool to stabilize the economy, and hence that quantitative easing is unlikely to jump-start the economy.

Some unreasonable claims?

- *“The MMT economists are delivering the alternative paradigm in macroeconomics. No other challenge to the mainstream has succeeded and the heterodox tradition just became lost in peripheral issues. MMT is front and central macroeconomics and the mainstream cannot deal with it”. (Mitchell, Billyblog, 23 July 2019)*
- ***“MMT economists were the first in the modern era to point out that loans create deposits not the other way around. You will never find that proposition in the standard macroeconomics textbooks.”*** (Mitchell, Billyblog, 16 July 2019)

MMT statements that attract attention

- « **Sovereign** » governments cannot default
- A government **deficit lowers short-term interest rates**, it does not increase it
- **The limit to government spending is not a financial one**; the limit arises from the lack of real resources
- A **job guarantee program (government as the employer of last resort)** will achieve full employment without generating inflation
- « The Treasury does not ‘need’ to borrow in order to deficit-spend ». [Wray 1998]
- « Taxes do not finance spending » [Forstater and Mosler 2005]
- « Government spends simply by crediting a private sector bank account at the central bank. Operationally, this process is independent of any prior revenue, including taxing or borrowing ». [Mitchell and Muysken 2008]

US Senators condemning MMT (May 2019)

IN THE SENATE OF THE UNITED STATES

Mr. PERDUE (for himself, Mr. BRAUN, Ms. ERNST, Mr. MORAN, and Mr. TILLIS) submitted the following resolution; which was referred to the Committee on _____

RESOLUTION

Recognizing the duty of the Senate to condemn Modern Monetary Theory and recognizing that the implementation of Modern Monetary Theory would lead to higher deficits and higher inflation.

Whereas noted economists from across the political spectrum have warned that the implementation of Modern Monetary Theory (referred to in this preamble as “MMT”) would pose a clear danger to the economy of the United States;

Monetary circuit theory/ Currency hierarchy

- Revival of interest for the works of Augusto Graziani and Alain Parguez (Fontana, Bellofiore, Rochon, Seccareccia)
- Linked in part to MMT: firms first spend the funds provided by banks vs the government first spends the funds provided by the central bank
- Also linked to MMT, but this time as a response: currency hierarchy (Bonizzi, Prates, Fritz, Kaltenbrunner, Herr)
- It is not so easy to control interest rates or to engage in expansionary fiscal policies when the domestic currency ranks low in the international hierarchy.

Kaleckian growth and distribution

- Neo-Kaleckian: Steindl 1952, Rowthorn 1981, Dutt 1984, Amadeo 1985
- Post-Kaleckian: Bhaduri and Marglin 1990, Kurz 1990, Blecker 1989
- Wage-led vs profit-led demand: (ILO + UNCTAD)
- Profit-squeeze (neo-Goodwinians vs overhead labour)?
- Highly flexible: technical change (Storm and Naastepad 2012); gender wage gap (Onaran 2015, Hein 2020), pension funding (Codrina Rada 2017), macro impact of organized crime (Astarita et al. 2018), degrowth (Monserand 2022)
- New focus on the debt of households (rather than on the debt of firms as in the FIH), and on the imitative behaviour of consumers (Kappeler/Schutz; Setterfield/Kim 2017)
- New focus on the ‘Sraffian supermultiplier’ and autonomous non-capacity creating demand (Freitas and Serrano 2015, Allain 2015, Lavoie 2016)

Personal Income and wealth distribution

- Generated by the attention given to the work of Piketty (2014)
- Beyond functional income distribution; looks also at personal income distribution (Carvalho and Rezai 2016)
- Distinguish different classes of workers (deciles; direct workers; managers, overhead labour, supervisory workers), capitalists, rentiers
- Assume all social classes can save: therefore one must look at the evolution of their wealth and revive Pasinetti (1962): Palley (2016), Ederer and Miriam Rehm (2020)

Ecological macroeconomics and PKE

- Up until the 2000s, very little PK work about the environment. One reason was that PK economists wanted to raise growth rates while ecological economists wanted to reduce growth rates.
- Over the last few years there has been an acceleration in the study of ecological issues by post-Keynesian economists or closely-related allies.
- In addition, there has been a similar acceleration in the incorporation by ecological economists of post-Keynesian theories and tools, such as the theory of endogenous money, demand-led economic activity and the stock-flow consistent approach.
- How will banks finance the transition towards a greener economy (Campiglio, 2016)? Will the issue of sovereign green bonds make any difference (Monasterolo and Raberto, 2018)? Will the transition towards decarbonization and climate change lead to financial instability (Dafermos et al., 2018) and will it generate a large set of stranded financial assets that will further intensify the financial crisis (Cahen-Fourot et al., 2019; Semieniuk et al. 2021)? Does the existence of positive real interest rates on debt preclude a transition towards a zero-growth economy (Jackson and Victor, 2015)

Balance-of-payment constraints

- **Open-economy SFC models** (2 or 3 country models)
- Extension to ecological questions, with fixed and flexible exchange rates, and implications for the rebound effect (greener technology may lead to more carbonization)
- **Extensions of Thirlwall's law**
- Huge quantity of empirical work
- Ecological extension: core versus periphery areas and the need to reduce carbon emissions, with different cooperation vs no-cooperation scenarios (Althouse et al. 2020)
- Is Thirlwall's law a tautology?
- Should the level of the real exchange rate have any effect on Thirlwall's law?

Inflation theory

- Somewhat left out over the last few years
- An expected revival now
 - The Phillips curve
 - Cost inflation
 - Conflict inflation and the wage-setting/price setting model
 - Imported inflation
 - Strato-inflation and hyper-inflation (Bastian and Setterfield 2016; Charles and Marie 2016)

Agent-based models and SFC

- ‘The prevailing literature on AB models is strongly influenced by the neoclassical approach’ (Brancaccio/Gallegati/Giametti 2022)
 - This is less so since the 2008 financial crisis however
- Also ABM used to ignore SFC constraints
 - This is not the case anymore, at least among non-neoclassical ABM
- Keynes/Schumpeter models (Dosi...)
- Seppecher models

Comparative political economy, varieties of capitalism

- Links with international political economy and with French Regulation Theory: Baccaro and Pontusson (2016)
- To go beyond supply-led regimes (Carlin and Soskice), and enriching the typologies by adding demand-led regimes (debt-led, export-led) and issues tied to financialization and globalization
- Behringer and van Treek (2021)
- Hein et al. (2021), Hein and Martschin (2022)
- Stockhammer (2020), Stockhammer and Kohler (2022)

Left-out topics

- Microeconomics
 - Consumer theory
 - Pricing theory
 - But see Shiozawa et al. 2019, *Microfoundations of Evolutionary Economics* (reviewed in REPE 2020 and MECA 2022) who show that price adjustments are not needed in a model with several sectors, each with several firms, when there are inventories and unutilized capacity

Final thoughts



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The most extremist versions always seem to attract all the attention

- I provide four cases within the realm of post-Keynesian theory:
 - The views of Paul Davidson among the five strands of PK theory;
 - The views of Pierangelo Garegnani among the three strands of Sraffian economics;
 - The views of Tony Lawson on methodology and the role of mathematical formalization;
 - The general version of MMT (with the consolidation hypothesis) in contrast to its more academic version.

Conclusion: the future of PK economics

- Should PKE engage more with other social sciences?
- Should PKE engage more with other heterodox schools?
- Should PKE engage more with orthodox economists, in particular orthodox dissenters? How? Cooperate, fight, or ignore? Tweak existing neoclassical models (New Consensus)? (Stockhammer and Ramskogler 2009, Dullien 2017; Lee and Lavoie (ed.) 2013)

