Weak ties, empirical deficits and an update the Kalecki-Minsky agenda. Comments on post-Keynesian macroeconomics ten years after the crisis

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outline

- Political background
- State of mainstream econ/NK
- State of PKE
- Progress report on Kalecki-Minsky research
  - Pseudo-Goodwin cycles
  - Size of financial effects vs distributional effects
  - Endogenous cycles
  - Inequality and household debt
  - Unemployment hysteresis
- Wrapping up

Political background

- Worst financial and economic crisis in two generations
- ... but the crisis did not turn into a great depression (except in Greece)
- Because of massive gov't fiscal interventions and QE
- But instead resulted in 'lost decade'
- And in Europe to a divergence of economic performance.
- Deflation of political hegemony of neoliberalism, while it stays firmly in power.
- Political discontent has moved to the right (Trump, Brexit, AfD, Salvini, Orban ...)
- The left has for the most part been unable to present a credible alternative
  - Greek tragedy of Syriza:
  - Pasokification of German and Austrian social democracy, despite comparatively swift economic recovery.
  - Glimmer of hope in a new anti-establishment social democracy (Sanders, Corbyn), but not in in power and economic policy not sufficiently clear
- Mazower (1998) *Dark Continent. Europe's Twentieth Century* suggests that dominant liberalism may be the exception; Fascist, liberal and radical left here to stay?
  - Implications for PKE?

Mainstream econ: New Keynesian Econ

- Accept need for microfoundations of macro, but reject market clearing
- Takes market-clearing equilibrium as reference point
- In 1990s (Mankiw and Romer 1991): bewildering variety of partial equilibrium models sticky prices, staggered wage setting, credit rationing, financial accelerator, efficiency wages, NAIRU, multiple equilibria, noise trader models...
- In 2000s variety of NK models turns into NK-DSGE (ok, maybe ZLB)
- 'even if...' model turned into THE benchmark model

Recently, in the mainstream

- Theoretical stagnation: modifying NK DSGE
- lots of interesting empirical 'NK' work, to some extent reinventing PK wheels, but empirically more advanced
  - de Long and Summers 2012 on fiscal policy
  - Blanchard et al 2016 on hysteresis
  - Piketty, Saez on inequality
  - Mian and Sufi on macro economics with micro data
  - Haldane, Borio on financial instability
  - Cecchetti and Kharroubi 2012 on financial development
  - Jorda et al 2013 JMCB on debt and recessions
  - Ostry et al 2014 on inequality and growth
- Saltwater-sweetwater divide has broken up again in the USA (Romer 2016...)
- But in Europe not much (Wren Lewis, de Grauwe, Bofinger ...)

Where is PKE?

- PK has a well defined core
  - principle of effective demand,
  - fundamental uncertainty, animal spirits, liquidity preference
  - Endogenous money creation
  - Endogenous financial instability,
  - independent investment function in the long run,
  - class-specific saving propensities -> allows for wage-led demand regimes
  - hysteresis (natural rate endogeneity) in the long period...
- Note: that's different from other heterodox streams that are often more heterogenous (Ecological Econ, Feminist Econ, Marxism...)
- It has set of journals and network of associations and conferences
- But is marginalised by the mainstream and has little impact on policy making

PKE: what has changed since 2008?

- Marginalisation has not changed much since the Financial Crisis 2008
- Essentially no opening of economics as an academic discipline in terms of hiring; mainstream journals still closed to PKE (in particular in macro)
- Austerity at universities has narrowed room for heterodox econs (in UK: only funding for 3* and 4* research => essentially no hetecon in REF2014/Econ; Stockhammer, Dammerer and Kapur 2017)
- Some increased interest by policy institutions (BoE, ILO...), but ultimately marginal
- Some increased interest by progressive parties, but no substantial impact on policy
- Today's PK generation has few personal links to leading mainstream economists (different for previous cohort)

Strong/weak ties: PKE a coherent paradigm or a ghetto?

- Granovetter (1973): 'the strength of weak ties'
- Strong ties are often within networks; strong ties "breed local cohesion, lead to overall fragmentation" (p. 1378); bridge to other networks are usually weak ties
- Illustrates importance of weak ties (rather than of strong ties) with respect to job search and the ability of different ethnic communities to organised here against community damaging building projects
- In this terminology PKE has a lot of strong ties, but few weak ties
- Kapeller and Dobusch (2012): citation analysis: most heterodox streams references their own stream and mainstream (who doesn't cite them), but not other hetecons

Some openings

- Agent-based modelling (ABM) has gone macro.
  - Started out with microeconomic, mostly on innovation
  - Keynes meet Schumpeter (Dosi et al 2010, 2013, 2017 ....): it'a actually closer to Kalecki meet Schumpeter (wage-led demand, little on animal spirits...)
  - Caiani et al 2016, Seppecher et al 2017)
- PK Ecological Macroeconomics (a niche program) is gaining a critical mass (Hardt and O'Neill 2017, Dafermos et al 2017, Taylor et al 2018, Kemp-Benedict 2018, Nasqi and Stockhammer 2018)
- Feminist Econ and PKE (Braunstein, van Staveren and Tavani 2011, Onaran et al 2019)
- Growing interest in IPE (International Political Economy) and CPE (Comparative Political Economy) in PK
  - Baccaro and Pontussen (2016) suggest founding CPE (VoC) in PK demand regimes rather than supply side institutions
  - Blyth and Mathijs (2017) regard lack of macroeconomics as a major shortcoming of IPE
  - Financialisation and financial instability have become important topics in Socio-Economics/economic sociology (van der Zwan 2014) and human geography

PKE and other hetecon streams

	relation	Interaction	Topics
Feminist Econ	complementary	Modest	Growth models with gendered labour markets
Ecological Econ	Complementary	Growing	Growth with demand and resource constraints
ABM/Evolutionary	Complementary	Growing	ABM macro, endoge tech change
Marxist Econ	Complementary/competing	ongoing	Wage vs profit-led growth
Institutionalist	Complementary	modest	
Socio-Economics (economic sociology)	Complementary	Ongoing	Finance and financialisation
International Political Economy	Complementary	Modest	Growth regimes and political alliances

Kalecki-Minsky modelling

- Demand driven
- Allows for wage-led demand
- Financial instability
- Hysteresis/path-dependency

- Personal as well as function distribution
- Wealth distribution

Pseudo-Goodwin cycles

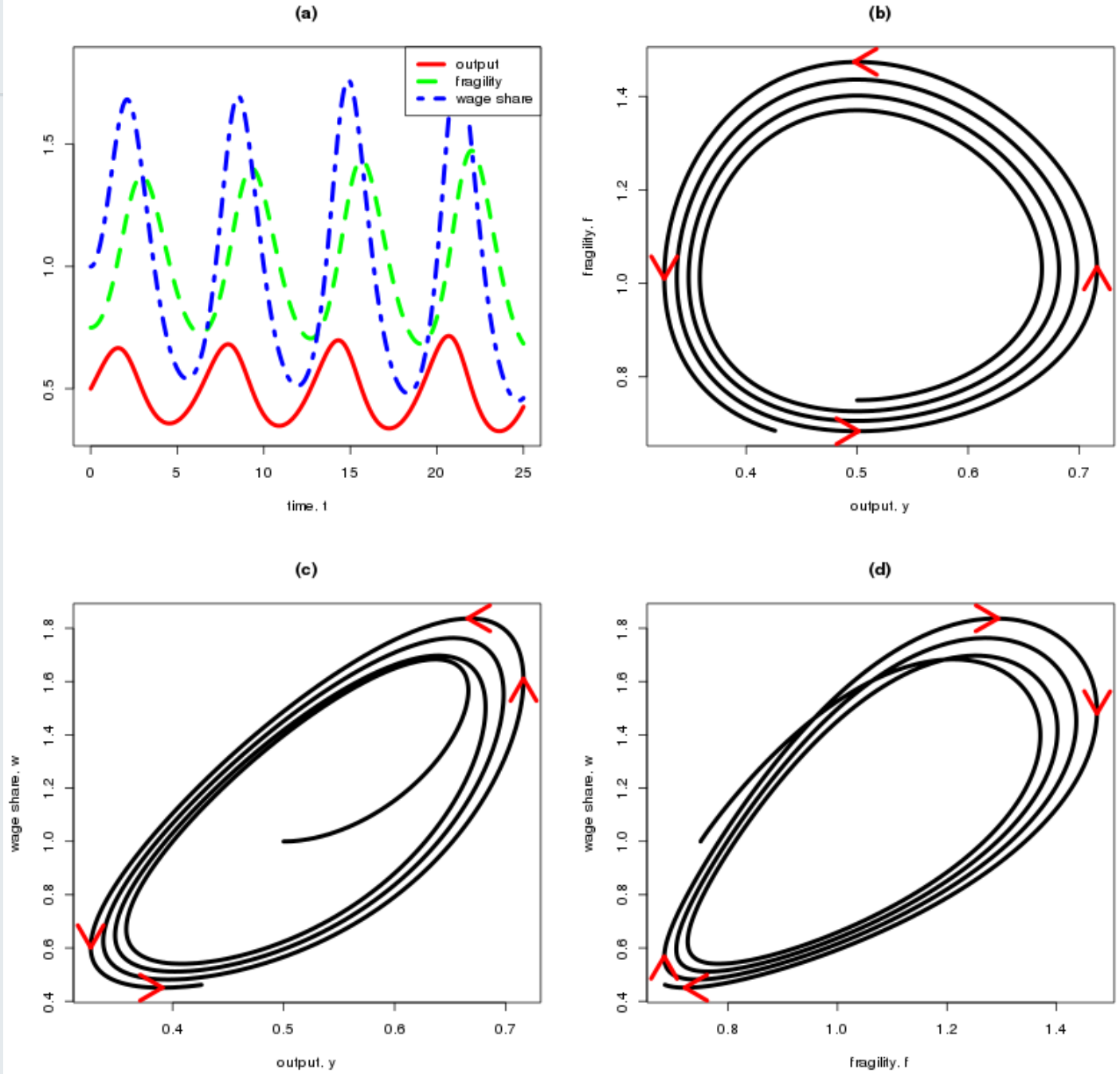
- Stockhammer and Michell (2017) demonstrate that pseudo-Goodwin cycles can arise in a Minsky model with a wage-led demand regime
- Pseudo-Goodwin cycle: looks like a Goodwin cycle (cycle in profit share/output space), but isn't. Goodwin cycle requires profit-led demand and counter-cyclical profit share (industrial reserve army distribution function)
- Assume a Minsky model, where cycles stem from the interaction of debt and demand. Add an industrial reserve army distribution function.
- Pseudo-Goodwin cycles also arise in *wage-led* Minsky model
- Any business cycle mechanism (that is independent of distribution) can generate pseudo-Goodwin cycles if paired with a reserve army distribution function.

Model M3: Pseudo-Goodwin model with wage-led demand effect

- Minsky cycle with reserve army effect *and* wage-led demand equation.

$$\dot{f} = f(-1 + py)$$
$$\dot{y} = y(1 - f + sw)$$
$$\dot{w} = w(-c + ry - w)$$

f…financial variable (leverage ratio), y…output, w…wage share


(a)
output
fragility
wage share
time. t
(b)
fragility. f
output. y
(c)
wage share. w
output. y
(d)
wage share. w
fragility. f

implications

- Pseudo-Goodwin cycles can arise in wage-led economy
- Any business cycle mechanism (that is independent of distribution) can generate pseudo-Goodwin cycles if paired with a reserve army distribution function.
- (endogeneous) business cycle analysis: need to test heterodox business cycle arguments against each other, possibility of observational equivalence
- Interaction of business cycle mechanisms?

Bhaduri-Marglin model with financial variables

- Extending the Bhaduri-Marglin model to include financial variables (HHD, business debt, property prices, share prices)
- Stockhammer and Wildauer (2016): panel for 16 OECD countries 1980-2013.
  - Financial effects on demand stronger than distribution effects.
  - Negative effects of debt on investment, often positive effects on consumption.
- Stockhammer, Rabinovich and Reddy (2018): similar model for 4 countries with long historical series (1855-2014) based on Piketty Zucman, financial variable: Piketty's 'private wealth'
  - Domestically wage-led demand regimes, typically small effects
  - Varying, but at times substantial financial effects
  - In US, UK: pos effect of PW on consumption, neg on investment
  - In DE, FRA: no effect of PW on consumption, some pos effect on inv

Endogeneous financial cycles

- Families of Minsky models (Nikolaidi and Stockhammer 2018):
  - debt cycle model, speculative asset price models (momentum trader models)
  - HH debt vs business debt
  - A lot theoretical advances, only a handful of empirical studies.
- Mainstream literature on cycles
  - Univariate filtering (Drehman et al 2012, Borio 2014, Aikman et al 2015)
  - DSGE with exogeneous shocks, establish whether shock gets amplified
- In contrast, here: cycles resulting from interaction of a real (GDP) and a financial variable
- Stockhammer, Calvert Jump, Cavallero and Kohler (2018): use minimalist (2D) Minsky model to test for endogenous cycles (oscillations): 7 major OECD economies (1970-2014)

A simple financial-real interaction model

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \alpha_2 f_{t-1} \tag{1}$$

$$f_t = \beta_0 + \beta_1 y_{t-1} + \beta_2 f_{t-1} \tag{2}$$

$$J = \begin{bmatrix} \alpha_1 & \alpha_2 \\ \beta_1 & \beta_2 \end{bmatrix} \tag{3}$$

- Cycles occur if the eigenvalues of (3) are complex conjugates
- Requires $Tr(J)^2 - 4Det(J) < 0$
- Necessary condition for oscillations: $\alpha_2 \beta_1 < 0$
- Moreover, complex eigenvalues ($\lambda = h \pm \Omega i$) of the VARs yield the implied cycle length (L):

$$L = \frac{2\pi}{\arccos\left(\frac{h}{\sqrt{h^2+\Omega^2}}\right)} \tag{8}$$

Testing real-financial interaction cycles

	Expected signs and the two necessary conditions hold	Avg cycle length	notes
Interest rate	4 of 7	5.5 yrs	
NFCD	6 of 7	11 yrs (based on 5)	
HHD	0 of 7		Results not robust; in baseline 4 anti-Minsky cycles

Findings on real-financial interaction cycles

- Strongest evidence for NFCD
- Empirical support for cycle models with interaction between real economy and business debt (Asada 2001; Fazzari et al. 2008)
- Partial empirical support for models with interaction between real economy and interest rates (Foley 1987; Jarsulic 1989; Fazzari et al. 2008)
- No contradiction, but different frequencies
- No evidence for HHD – GDP cycles
- Implication for research on financial cycles: aggregate debt measures may conceal different cycle frequencies
- Note: don’t test asset price interaction cycles
-

Inequality and household debt

- Argument that rising inequality has been a main cause of rising household debt (van Treeck 2014, Kapeller and Schutz 2014, Kumhof et al 2015, Stockhammer 2015),
- (at least) two mechanisms:
- Consumption cascades: upward-looking consumption norms, the middle classes and poor copy the behaviour of the rich,
- Poor driven into debt as they try to maintain living standards in the face of falling real wages
- Note: both regard rising debt as driven by consumption behaviour
- In models: $\Delta HHD = C - YD$

What drives Household debt?

increasing interest in household debt (D) since financial crisis
most research about *effects* of D, much less on *determinants*
arguments in the literature:

1. income inequality and expenditure cascades (Frank et al. 2014). Prominent in recent hetecon macro (Behringer and van Treeck 2013, Kapeller and Schütz 2014)
2. real estate prices: Minskyian households (Bezemer et al 2014, Ryoo 2015)
3. low interest rates: deviations from 'sound' monetary policy (Taylor)
4. financial deregulation

Stockhammer and Wildauer (2018): test these hypotheses: *is debt consumption-driven or asset transaction-driven?* Panel of 11 OECD countries, 1980-2011; similar: Moore and Stockhammer (2019)

working hypotheses

Table 1. Hypotheses on debt determinants

	Hypothesis	Theoretical Argument	Predicted signs
1	expenditure cascades hypothesis (ECH)	Households make consumption decisions with respect to richer peers. Consumption decisions drive debt	$\frac{\partial D}{\partial Q} > 0$
2	housing boom hypothesis (HBH)	Debt is driven by asset transactions. Rising asset prices lead to higher debt due to re-enforcing optimism about future price increases.	$\frac{\partial D}{\partial PP} > 0$
3	financial deregulation hypothesis (FDH)	Deregulation of the financial industry lifts lending restrictions and allows households to take on more debt.	$\frac{\partial D}{\partial CRED} > 0$
4	low interest rate hypothesis (LIH)	Loose monetary policy in the form of low interest rates encourages household borrowing.	$\frac{\partial D}{\partial R} < 0$

D is household debt, Q is a measure of income inequality, $CRED$ stands for credit regulation, R is a real interest rate and PP indicates property prices.

Table 4: Household debt, baseline specifications

	(1)	(2)	(3)	(4)
	DFE	PMG	DFE	PMG
y^D	0.984***	0.888***	0.954***	0.687***
	(0.22)	(0.11)	(0.23)	(0.07)
pp	0.414***	0.570***	0.426***	0.622***
	(0.14)	(0.07)	(0.15)	(0.04)
Top1	-0.674	0.454		
	(1.89)	(0.75)		
Gini			-0.169	3.438***
			(1.07)	(0.49)
R	-3.712**	-0.601	-3.703**	-0.421
	(1.50)	(0.58)	(1.49)	(0.40)
OLD	0.34	0.977	0.27	5.996***
	(1.74)	(1.31)	(1.88)	(1.01)
cred	0.790***	0.710***	0.780***	0.439***
	(0.28)	(0.16)	(0.28)	(0.08)
		SR		
error	-0.061***	-0.066***	-0.059***	-0.075**
correction	(0.01)	(0.01)	(0.01)	(0.03)
N	362	374	371	374
H0: res=I(1)	0.00	0.00	0.00	0.00
H0: Y^D=1	0.94	0.32	0.84	0.00
H0: PP=1	0.00	0.00	0.00	0.00

Error correction models estim
with Pooled Mean Group (PM
and Dynamic Fixed Effects (DF
estimators.
Dependent variable: $\Delta \log(D_{it}$
Stars indicate statistical
*significance: * p<0.1, ** p<0.0*
**** p<0.01. Standard errors in*
brackets.
The bottom three lines of the
report p-values of hypothesis
H_0: $r = I(1)$ *is the hypothesis*
the residuals contain a unit ro
and H_0: $\beta_{y^D} = 1$ *and* H_0: β_{PP}
are the hypotheses that the lo
run elasticities for disposable
income and property prices ar
equal to 1.

Findings

- support for housing boom hypothesis
  - positive and statistically highly significant effect of PP on D
  - highly robust across specifications
  - Effect larger in countries with more developed financial sector (split sample according to priv credit/GDP)
- no support for expenditure cascades hypothesis
  - Negative effect of Top1 on D
- (modest) effects of interest rate and financial regulation
- → property prices key for household debt dynamics. Debt is asset transaction-driven, not consumption driven

Consumption cascades. A critique

- Upward-looking status comparisons popular in recent PKE
- Attractive: behavioural econ elements
- Micro evidence for other regarding spending behaviour
- But focuses on demand for credit; downplays banks' lending decision
- Problem: regards increase in HH debt as driven by consumption.
- That misses that most debt is mortgage debt
- Alternative: debt as asset transaction driven
- Criticism of consumption cascades as a macroeconomic story of the pre-crisis period, not of behavioural story
- Implication for political economy of crisis: middle class lending rather than the poor

The NAIRU and Hysteresis

- In mainstream a topic in 1980s (Blanchard and Summers 1986), then went out of fashion
- Some empirical studies, but most of them test for a unit root in unemployment e.g. Stanley 2004
- Returned after crisis Blanchard et al 2015, Blanchard 2018; Cerra and Saxena (2008)
- One important long-term effect of the NAIRU debates is that EC, OECD, IMF rountinely publish NAIRU estimates
- These are bases for potential output estimates and thus the 'structural deficit'
- These are based on the assumption of an exogenous NAIRU = no hysteresis.

European Commission NAWRU

$$U_t = UN_t + UC_t$$

$$UN_t = \mu_{t-1} + UN_{t-1} + \varepsilon_t^N$$

$$\mu_t = \mu_{t-1} + \varepsilon_t^\mu$$

$$UC_t = \phi_1 UC_{t-1} + \phi_2 UC_{t-2} + \varepsilon_t^C$$

$$w_t = f(tot, pr, ws, UC_t)$$

U_t ...unemployment rate, UC_t ...cyclical unemployment rate, UN_t^N ...NAIRU, w...wages, tot...terms of trade, pr...lab pdy, ws...wage share

- The natural rate is a unit root process with a time varying drift
- cyclical rate follows an exogenous autoregressive process
- augmented with a wage Phillips curve, These vary by country

Calvert Jump and Stockhammer (in progress)

Building on Jaeger and Parkinson (1994):

$$U_t = UN_t + UC_t$$

$$UC_t = \phi_1 UC_{t-1} + \phi_2 UC_{t-2} + \varepsilon_t^C$$

$$UN_t = UN_{t-1} + \alpha UC_{t-1} + \varepsilon_t^N$$

$$\Delta p_t = \beta UC_t + \varepsilon_t^p$$

U_t ...unemployment rate, UC_t .... cyclical unemployment rate, UN_t ... NAIRU, p...CPI

- (1) estimate the model an unobserved components model using a Kalman filter: point estimates for hysteresis >>0, but large confidence intervals
- (2) estimate an unobserved components model using Bayesian maximum likelihood
- Estimation period 1960-2017, data: AMECO

Results for α

	Prior mean	Posterior mean	90% highest posterior density
Germany	0.3	0.44	[0.00 0.71]
France	0.3	0.73	[0.11 1.33]
UK	0.3	0.72	[0.12 1.32]

- Calvert Jump and Stockhammer (in progress)
- estimate a unobserved components model using Bayesian maximum likelihood
- Estimation period 1960-2017, data: AMECO
- prior density of alpha skewed towards 0

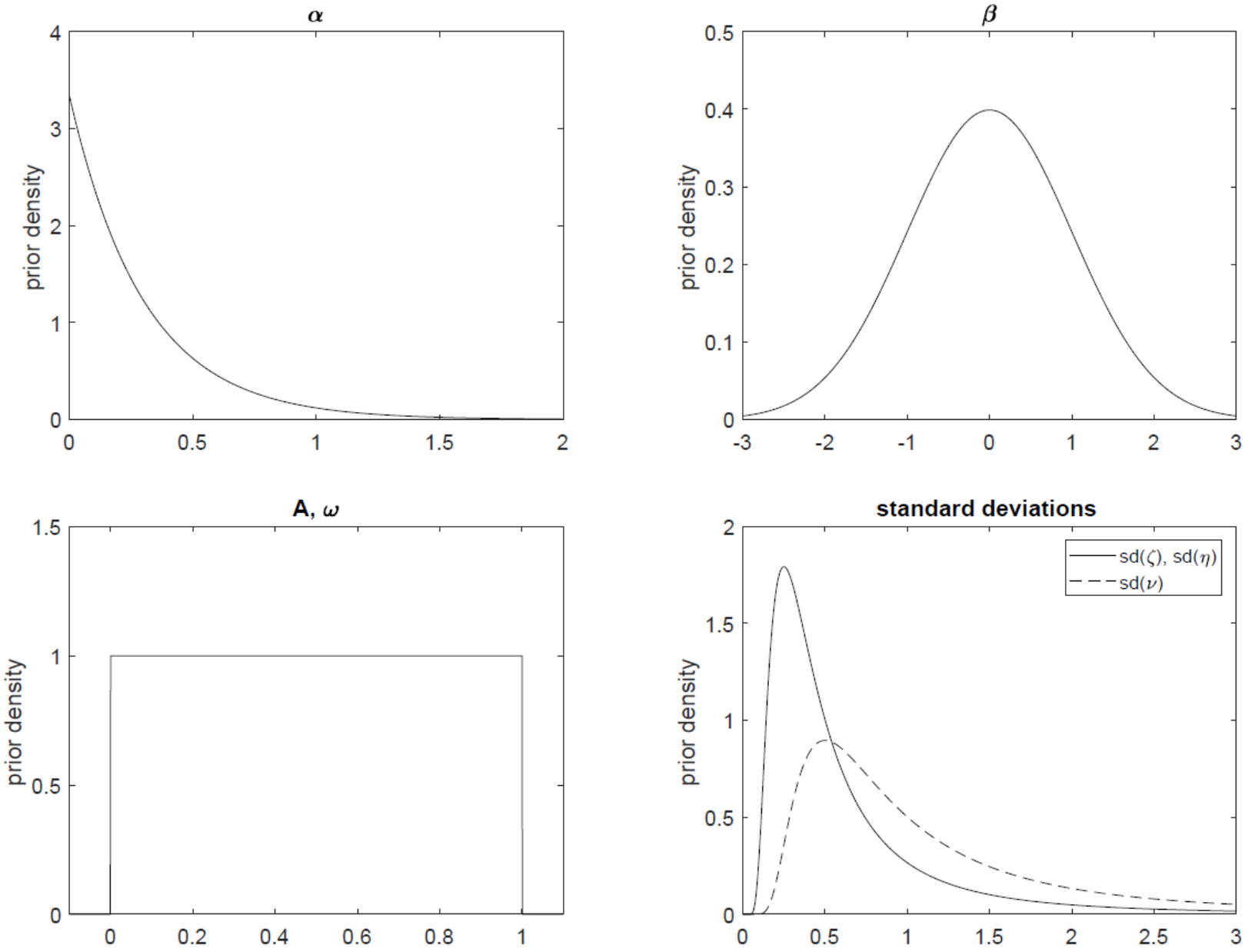


Figure 1: Prior densities for α, β, A, ω, and the shock standard deviations.

Hysteresis, path dependence

- Strong evidence that demand shocks/recession have impact on growth path (Blanchard et al 2016)
- Standard argument in PKE Palley (1996), Leon-Ledesma and Thrilwall (2002), Dutt (2006), Fazzari et al (2018)
- Much of this is about endogeneous productivity growth
- Strong implications for economic policy
- NAIRU is endogeneous. Need to calculate NAIRU allowing for hysteresis

Concluding: PK and NK

- PKs is intellectually established, but effectively marginalised. We need to reach out (other hetecons, other social sciences, policy makers, mainstream econ)
- Depressing that Global Financial Crisis has changed little in the marginalisation of PK (and other hetecons)
- NK has re-invented several PK wheels (credit rationing, endogenous money, debt cycles, NAIRU, hysteresis); the lack of acknowledgement may be unpleasant, but knowledge is public good ... *what can we learn from them?*
- NK has accepted the microfounded terrain of neoclassical econ, which has resulted in a fertile research program
- DSGE is not the most attractive part of NK research
- PKs should confront their implicit micro assumptions -> heterogeneous agents and incomplete markets -> ABM, de Grauwe and Macchiarelli 2015

Outlook

- **The strength of weak ties**: cooperate with (and cite!) other hetecons (ABM, Ecol Econ, Fem Econ …)
- Let's **Revive 'Political Economy' -** engage with social sciences
  - When and why die PKs switch from Political Economy to PKE?
  - What do PKs analytically say about the state and govt intervention
  - Attempt to define a new field: Political Economy
- **Long Live Sisyphos! -** have to try to talk to mainstream econ, even if they don't listen.
  - Need for empirical analysis
- **Economists have hitherto only interpreted [modelled] the world differently … -** have to be relevant for economic policy (=for states and govts) and for social movements

PK vision

- Heterogeneous agents: class and other social groups (workers vs capital owners, fundamentalists vs momentum traders, different investment strategies
- Independent investment function; demand shocks are primarily investment shocks
- Endogenous instability of financial markets
- Labour market: wage bargaining with endogenous NAIRU => hysteresis

PK current research areas

- 1950-60s growth theory, capital controversies
- 1970s shift to monetary issues: endogenous money; financial instability; medium term growth models
- wage-led/profit-led growth;
- balance of payment constraint growth models
- Financial instability and Minsky models
- Stock-flow consistent (SFC) modelling (large scale macro model with fully specified financial balances and stocks)
- Interaction with other hetecon streams: social sciences; ABM; complexity theory; ecological econ

Interest rate-GDP cycles

Country	Sample	$\alpha_2\beta_1 < 0$?	Cycle length
AUS	1973-2014	yes	4 yrs
CAN	1973-2015	yes	-
DEU	1973-2015	yes	4 1/2 yrs
FIN	1972-2015	no	-
FRA	1973-2015	yes	-
GBR	1981-2015	yes	6 yrs
USA	1973-2014	yes	7 yrs

Average cycle length: 5 1/2 yrs

Non-financial corporate debt-GDP cycles

Country	Sample	$\alpha_2\beta_1 < 0$?	Cycle length
AUS	1979-2014	yes	15 yrs
CAN	1972-2015	yes	13 yrs
DEU	1973-2015	yes	7 yrs
FIN	1972-2015	no	13 yrs
FRA	1979-2015	yes	181 yrs
GBR	1978-2015	yes	9 yrs
USA	1973-2014	yes	9 yrs

Average cycle length (excl. *FRA*): 11 yrs

Household debt-GDP cycles

Country	Sample	$\alpha_2\beta_1 < 0$?	Cycle length
AUS	1979-2014	no	-
CAN	1973-2015	yes (anti-Minsky)	18 yrs
DEU	1972-2015	yes (anti-Minsky)	49 yrs
FIN	1974-2015	yes (anti-Minsky)	26 yrs
FRA	1980-2015	yes (anti-Minsky)	26 yrs
GBR	1974-2015	no	18 yrs
USA	1974-2014	no	19 yrs

Average cycle length: 26 yrs