

Workshop 1: Stock Flow Consistent Models – An Introduction to Theory and Technique

Taught by Neil Lancaster (University of Leicester), Antoine Godin (University of Pavia), Eugenio Caverzasi (University of Pavia)

Stock flow consistent (SFC) models unify stocks and flows in a framework such that 'everything comes from somewhere and everything goes somewhere' (Godley and Lavoie, 2007, p. 6). The approach is grounded in Barrere, Graziani, Parguez and Poulon, and rediscovers Marx's 'monetary economy of production'. It has strong ties to the Cambridge (UK) School of Keynesian Economics, and to the current post-Keynesian economists (Lavoie, Zezza, Keen and others).

Session 1 (Neil)	Session 2 (Eugenio)	Session 3 (Antoine)	Session 4 (Antoine)
Weds 1300-1430	Weds 1530-1700	Thurs 1000-1130	Thurs 1330-1500
The crisis in mainstream	SFC models in a nutshell	Simulating models: PK-SFC package	From model PC to model INSOUT
From Aristotle to Godley	Salient features	From model SIM to model PC	Wrap-up: Structuralism and SFC
	A Schumpeterian model		

Please download and install the R package

(<http://cran.r-project.org/doc/manuals/R-admin.html#Top>) and bring a PC for Sessions 2-4.

Session 1

The Crisis in Mainstream

1. Circular flow without banks (Gärtner, 2003)
2. Over-emphasis on monetary policy (Arestis and Sawyer, 2006; Arestis, 2009)
3. Problem areas 1: money neutrality, equilibrium, expectations, micro-foundations, marginal costs, government (Keen, 2013)
4. Problem areas 2: representative agents, uncertainty, financial markets, behaviour, 'black holes', capital gains/losses, stocks (Kinsella, 2011)

5. Regulatory problems: currency markets and 'the dealer of last resort' (Mehrling, 2011), capital markets and 'crowding out' (Backus, 1980)
6. Empirical problems: market anomalies, forecasting errors, wealth concentration and inequality, endogenous money
7. Accounting for the investment decision (Minsky, 1975)
8. Challenges for young scholars: modelling institutions, instability, crises, 'paradox of profits', inflation, taxes, regulation, fiscal-monetary policy

From Aristotle to Godley

1. Who got it right? (Galbraith, 2009; Bezemer, 2009)
2. The nature of money (Meikle, 1994; Fulwiler et al, 2003; Graeber, 2011)
3. SFC basics: the 'Marx-Schumpeter-Keynes-Minsky tradition' (Keen, 2010)
4. SFC basics: difference equations (Godley) versus dynamic equations (Keen)
5. SFC basics: stocks and flows (Borio, 2012; Lancaster, 2012)
6. SFC basics: methodology (Caverzasi et al, 2013)
7. Example SFC papers: 'seven unsustainable processes' (Godley, 1999); 'twin deficits (Zezza, 2009) iii) 'paradox of profits' (Keen, 2010)
8. Conclusions i) you can model any historical series with enough bells and whistles ii) model assumptions matter iii) pay attention to a) profits b) balance sheets c) ratios d) regulations (including leverage and capital controls) e) taxes f) institutions g) default risk h) wealth effects

Session 2

1. SFC models in a nutshell
2. Salient features (Godley and Lavoie, 2007: Chapters 3 and 4)
 - Matrices and accounting: the circuit
 - Behavioral equations
 - Buffer stocks, part I
 - Dynamics: the consumption function
 - Government deficit in a growing economy
 - The Tobinesque portfolio equation
 - Buffer stocks, part II
3. Pricing (Godley and Lavoie, 2007: Chapter 8)
4. A Schumpeterian model (Caiani et al., 2012)

Session 3

1. Introduction to the PK-SFC R package
 - Model SIM: dynamics and steady state
2. Adding expectations: model SIMEX (Godley and Lavoie, 2007: Chapter 3)

3. Model PC and the Maastricht Treaty

- Government target for debt to income ratio
- Balanced budget rule

Session 4

1. Adding the private sector: model INSOUT (Godley and Lavoie, 2007: Chapter 10)

- The Government sector and the central bank
- Deficit, debt to GDP and austerity

2. Structuralism and SFC (Godin, 2012)

- Endogenous labor market
- Balanced budget, recession and de-leveraging

3. Wrap-up

Core Reading

Arestis, P. (2009). New Consensus Macroeconomics: A Critical Appraisal, Working Paper Series 564, The Levy Economic Institute of Bard College. http://www.levyinstitute.org/pubs/wp_564.pdf

Borio, C. (2012). On time, stocks and flows: Understanding the global macroeconomic challenges. <http://www.bis.org/speeches/sp121109a.pdf>

Godley, W. and Lavoie, M. (2007). Monetary Economics An Integrated Approach to Credit, Money, Income, Production and Wealth. Palgrave MacMillan, New York (Chapters 3,4, 8 and 10)

Additional Reading

Arestis, P., & Sawyer, M. (2006). The nature and role of monetary policy when money is endogenous. Cambridge Journal of Economics, 30(6), 847–860. doi:10.1093/cje/bel023

Backus, D., Brainard, W. C., Smith, G., & Tobin, J. (1980). A model of US financial and nonfinancial economic behaviour. Journal of Money, Credit and Banking, 12(2), 259–293.

Bezemer, D. J. (2009). Understanding financial crisis through accounting models. University Library of Munich, MPRA Paper(7), 676–688. doi:10.1016/j.aos.2010.07.002

Caiani, A., Godin, A. and S. Lucarelli. (2012). Innovation and finance: An sfc analysis of great surges of development. Working Paper Series 733, The Levy Economic Institute of Bard College

Caverzasi, E. and A. Godin (2013). Stock Flow Consistent Modeling Trough the Ages. Working Paper Series 745, The Levy Economics Institute of Bard College

Dos Santos, C. H. and Zezza, G (2008). A Simplified, Benchmark, Stock-Flow Consistent

Post-Keynesian Growth Model. *Metroeconomica*, 59 (3), 441–78

Fullwiler, S., Kelton, S., & Wray, L. R. (2003). Modern Money Theory: a response to critics. Retrieved from <http://ssrn.com/abstract=2008542>

Galbraith, J. K. (2009). Some economists got it right: who are these economists, anyway? *NEA Higher Education Journal*, (Special Focus: A New Progressive Era for Higher Education), 85–97. Retrieved from <http://www.nea.org/assets/docs/HE/TA09EconomistGalbraith.pdf>

Godin, A. (2012) "Job Guarantee: a Structuralist Perspective," DEM Working Papers Series 016, University of Pavia, Department of Economics and Management

Godley, W. (1999). Seven unsustainable processes. New York. Retrieved from <http://www.levyinstitute.org/pubs/sr/sevenproc.pdf>

Graeber, D. (2011). *Debt: The First 5,000 Years*. Brooklyn, New York: Melville House.

Keen, S. (2010). Solving the paradox of monetary profits. *Economics*, 4(31), 0–33.

Keen, S. (2013). Predicting the “Global Financial Crisis”: Post-Keynesian macroeconomics. *Economic Record*, n/a–n/a. doi:10.1111/1475-4932.12016

Kinsella, S. (2011). Words to the wise: stock flow consistent modeling of financial instability, 1–14. Retrieved from <http://dx.doi.org/10.2139/ssrn.1955613>

Lancastle, N. (2012). Circuit Theory Extended: The Role of Speculation in Crises. *Economics eJournal*, 6(34), 1–27.

Lavoie, M. and Daigle, G. (2011). A Behavioural Finance Model of Exchange Rate Expectations within a Stock-Flow Consistent Framework. *Metroeconomica*, 62 (3), 434–458

Lavoie, M. and Zhao, J. (2010). A Study of the Diversification of China’s Foreign Reserves within a Three-Country Stock-Flow Consistent Model. *Metroeconomica*, 61 (3), 558–592

Mehrling, P. (2011). *The New Lombard Street: How the Fed became the Dealer of Last Resort*. Princeton University Press.

Meikle, S. (1994). Aristotle on money. *Phronesis*, 39(1), 26–44. Retrieved from <http://www.jstor.org/stable/4182455>

Minsky, H. P. (1975). *John Maynard Keynes*. London and Basingstoke, UK: The Macmillan Press.

Taylor, L. (2008): A Foxy Hedgehog: Wynne Godley and Macroeconomic Modelling. *Cambridge Journal of Economics*, 32, 639–663.

Zezza, G. (2009). Fiscal policy and the economics of financial balances. Retrieved from http://www.levyinstitute.org/pubs/wp_569.pdf