

# Doctoral Program in Economics



Academic year 2021/22

## ECONOMIC GROWTH

**Period:** III TERM

**Course hours:** 22

**Teachers:** Cesaratto (12 hours), Caminati (10 hours)

**Exam methods:** Short essays; oral in case of lock downs.

**Prerequisites:** Advanced micro and macroeconomics; preferably basic knowledge of the classical theory of surplus and criticism of the marginalist theory of capital.

### Program

The module introduce students to supply-led and demand led growth models under different perspectives.

A first group of lectures introduce mainstream growth theory and the related post-Keynesian criticism, classical-Kaleckian growth models, supermultiplier theory, and endogenous money. The “red thread” of these lectures is that growth is demand-led, and that capitalism is inherently contradictory since an unequal income distribution is unable to sustain demand. An introductory lecture will concern the classic theory of surplus and the pre-capitalist economies.

A second group of lectures will present alternative approaches to innovation-driven endogenous growth, with special emphasis on the stylised facts concerning long-run growth. The mainstream supply-side quality-ladder model and its applications concerning cross-country convergence/divergence and the relation between competition and innovation are discussed first. Next, a review of the applied literature on the demand-pull hypothesis on innovation input, innovation output and the cyclicity of R&D is followed by the presentation of a demand-led super-multiplier model, in which endogenous growth triggered by research and other intangible investment yields a ‘paradox of thrift’ not only in levels, but also in growth rates.

**Lectures 1 Surplus approach, inequality and pre-capitalist economies**

**Lecture 2: Harrod & Domar originators of modern growth theory; Solow’s model**

**Lectures 3: Endogenous Growth Theory; Post-Keynesian theories I: Cambridge Equation model**

**Lectures 4: Post-Keynesian theories II: Neo-Kaleckian models**

**Lectures 5: Post-Keynesian theories III: the Sraffian Supermultiplier (in co-presence with prof. Riccardo Pariboni)**

**Lectures 6: Endogenous money, payment systems, monetary policy, autonomous demand**

**Lecture 7. Endogenous versus semi-endogenous growth and the Neo-Schumpeterian quality ladder model**

**Lecture 8. TFP growth and cross-country convergence/divergence: theory and predictions**

**Lecture 9. The relation between competition and innovation: theory and facts**

**Lecture 10. R&D and the size of the market. Cyclical and long-term features of the influence of demand on innovation input and innovation output**

**Lecture 11. Innovation-driven endogenous growth in a super-multiplier framework**

### **Educational objectives**

The lectures will stimulate post-graduate understanding of alternative growth theories either supply-led (based on the validity of Say's Law) or demand-led (driven by aggregate demand). Students will appreciate and compare full-employment and demand-led models of innovation-driven growth and will be invited to discuss their respective predictions and examine some open research areas.

### **Bibliographical references**

#### **Lectures 1**

Cesaratto, S. (2020), *Heterodox Challenges in Economics – Theoretical Issues and the Crisis of the Eurozone*, Springer, chapters 1, 2, 3.

Cesaratto, S., and Di Bucchianico, S. (2021a) The Surplus Approach, Institutions, And Economic Formations, *Contributions to Political Economy*, 40 (1), pp. 26–52.

#### **Lecture 2**

Garegnani, P. (1983), Notes on Consumption, Investment and Effective Demand, in Eatwell J. and M.Milgate (eds.) (1983), *Keynes's Economics and the Theory of Value and Distribution*, London: Duckworth (also in the *CJE* 1978-9)

H.G. Jones, *An introduction to modern theories of economic growth*, chapters 3 and 4

#### **Lectures 3**

S. Cesaratto (2010), Endogenous growth theory twenty years on: a critical assessment, *Bulletin of Political Economy*, vol.4, n.1, working paper version *Quaderni del Dipartimento di Economia politica*, Università di Siena, n.559

ID (1999), Savings and economic growth in neoclassical theory: A critical survey, *Cambridge Journal of Economics*, vol.23.

Cesaratto S. (2015): 'Neo-Kaleckian and Sraffian controversies on the theory of accumulation' *Review of Political Economy*, 27 (2), pp. 154-182.

#### **Lectures 4**

Cesaratto S. (2015): 'Neo-Kaleckian and Sraffian controversies on the theory of accumulation' *Review of Political Economy*, 27 (2), pp. 154-182.

Lavoie M. (2006) *Introduction to Post-Keynesian Economics*, Palgrave Macmillan, cap. 5

## Lectures 5

Cesaratto S. (2015): 'Neo-Kaleckian and Sraffian controversies on the theory of accumulation', *Review of Political Economy*, 27 (2), pp. 154-182.

Kalecki, M. (1967) The problem of effective demand with Tugan-Baranowski and Rosa Luxemburg, in: *Selected Essays on the Dynamics of the Capitalist Economy 1933 – 1970* (Cambridge: Cambridge University Press, 1971).

Cesaratto S. (con Serrano F., Stirati A.) (2003), Technical Change, Effective Demand and Employment, *Review of Political Economy*, vol.15.

Serrano, F, Freitas, F, Bhering, G. (2019) The Trouble with Harrod: The fundamental instability of the warranted rate in the light of the Sraffian Supermultiplier. *Metroeconomica*. 70: 263– 287. <https://doi.org/10.1111/meca.12230>

Morlin, G.S., Passos, N. and Pariboni, R. (2021). Growth theory and the growth model perspective: Insights from the supermultiplier, DEPS Working Paper no. 869

## Lecture 6

Cesaratto, S. (2020), *Heterodox Challenges in Economics – Theoretical Issues and the Crisis of the Eurozone*, Springer, <http://www.springer.com/9783030544478>, chapter 5, 6

Cesaratto, S., & R. Pariboni (2021) Keynes's finance, the monetary and demand-led circuits: a Sraffian assessment, WP DEPS n. 851. (revised version with a new title forthcoming in *Review of Keynesian Economics*)

McLeay M., Amar, R. Ryland, T. (2014): 'Money creation in the modern economy', Bank of England, *Quarterly Bulletin*, No. 1.

Fullwiler, S.T. (2008) Modern Central Bank Operations – The General Principles, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1658232](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1658232)

## Lecture 7

Aghion P., Howitt P. (2009): *The Economics of growth*, Cambridge, Massachusetts, MIT Press, chapters 4, 5

Acemoglu D. (2009): *Introduction to Modern Economic Growth*, Princeton Univ. Press, Princeton, chap.14.

## Lecture 8

Aghion P., Howitt P. (2009): *The Economics of growth*, Cambridge, Massachusetts, MIT Press, chapter 7

Ha J. and Howitt P. (2007), "Accounting for Trends in Productivity and R&D: A Schumpeterian critique of semi-endogenous growth theory", *Journal of Money, Credit, and Banking*, 33 (June 2007): 733-74.

Laincz C. A. and Peretto P. F. (2006) "Scale effects in endogenous growth theory: an error of aggregation not specification", *Journal of Economic Growth*, 11:263-288.

Jones C. (2005), "Growth and Ideas", in Aghion P. and Durlauf S. (eds.), *Handbook of Economic Growth*, North Holland, Amsterdam.

## Lecture 9

Aghion P., Howitt P. (2009): *The Economics of growth*, Cambridge, Massachusetts, MIT Press, chapter 12.

Aghion P. and Griffith R. (2005): *Competition and Growth. Reconciling Theory and Evidence*, Cambridge, Massachusetts, MIT Press.

Correa J.A. and Ornaghi C. (2014): Competition & innovation: evidence from U.S. patent and productivity data. *Journal of Industrial Economics*, LXII, 258-285

Hashmi A. R. (2013): Competition and innovation: the inverted-U relationship revisited. *Review of Economics and Statistics*, 95, 1653-1668

## Lecture 10

- Aghion, P., Askenazy, P., Berman, N., Cetto, G. and Eymard, L. (2012) Credit constraints and the cyclicity of R&D investment: Evidence from France. *Journal of the European Economic Association*, 10: 1001-1024.
- Barlevy, G. (2007) "On the cyclicity of Research and Development". *The American Economic Review*, 97, 1131-1164.
- Bond, S., Harhoff, D., Van Renen, J. (2003). Investment, R&D and financial constraints in Britain and Germany. London: LSE Research online, available at <http://eprints.lse.ac.uk/archive/00000771>
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- Kleinknecht, A., Verspagen, B. (1990). Demand and innovation: Schmookler re-examined. *Research Policy*, 19: 387-394
- Le Bas, C., Scellato, G. (2014). Firm innovation persistence: a fresh look at the frameworks of analysis. *Economics of Innovation and New Technology*, 23, 423–446, doi.org/10.1080/10438599.2014.895511
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- Rafferty, M. (2003) "Do Business cycles alter the composition of research and development expenditures?". *Contemporary Economic Policy*, vol. 21, n. 3, pp. 394-405
- Wyatt, G. (1986). *The Economics of Invention* (St. Martin's Press, New York).

## Lecture 11

- Brochier, L. & Macedo e Silva, A. C. (2019). A super-multiplier stock-flow consistent model: the "return" of the paradoxes of thrift and costs in the long run? *Cambridge Journal of Economics* 2019, 43, 413–442, doi:10.1093/cje/bey008
- Caminati, M. & Sordi, S. (2019). Demand-led growth with endogenous innovation. *Metroeconomica*, 70, 405–422.
- Cohen, W. M. & Klepper, S. (1996). A reprise of size and R&D. *The Economic Journal*, 106, 925-951.
- Lavoie, M. (2016). Convergence towards the normal rate of capacity utilisation in neo-Kaleckian models: the role of non-capacity creating autonomous expenditures. *Metroeconomica*, 67, 172-201. doi: 10.1111/meca.12109
- Nomaler, Ö. & Spinola, G. & Verspagen, B. (2021). R&D-based economic growth in a super-multiplier model. *Structural Change and Economic Dynamics*, 59, 1-19.