

Perfect competition in the digital economy?

A theoretical and empirical essay of “perfect contradictions”.

Marlies Schütz¹, Laura Zilian² and Stella Zilian³

Abstract

The Neoclassical theoretical construct of “perfect competition” though criticised in some strands for its rigorous assumptions still dominates much of modern economics. For instance, in mainstream microeconomics, general equilibrium theory is inseparably intertwined to the core characteristics underlying perfect competition, the latter serving as a reference point for modelling and analysis (see e.g., Kirman, 2016 for a critical appraisal). In this regard, the salient features of perfectly competitive markets are:

- (1) price-taking behaviour of market agents
- (2) product homogeneity
- (3) free market entry and exit
- (4) no transaction costs
- (5) rationality on the side of market agents
- (6) perfect information

If these conditions hold, the market outcome is a pareto-efficient equilibrium allocation implying that there exists no market power, the market is well-functioning, hence there is no failure and no government intervention is needed etc. The notion of perfect competition has been strongly coined by the 19th-century economists Léon Walras and Alfred Marshall and got very popular in Neoclassical thought.

From the perspective of economic history, the advent of Neoclassical thought and its growing influence fell into a period, where enduring phases of radical technological change – triggered by the diffusion of several general purpose technologies such as the steam engine, railway, the electric dynamo or mass production – gave rise to the Industrial Society and transformed deeply the economy (cf. Lipsey et al., 2005). Currently, we are in the later stage of the digital era that started in the 1970s with the invention of another general purpose technology, viz. the microprocessor (cf. Perez, 2013). Computers have entered almost every realm of society since then and at present rapid advances in micro- and nanoelectronics as well as complementary technological trends in e.g. robotics, artificial intelligence and advanced manufacturing further spur the digitalisation. The diffusion of these technologies and other types of innovation will have far-reaching consequences on the way we work and live.

Approaching the younger economic history from a dynamic, Schumpeterian rather than from a static, Neoclassical perspective, innovation have been described by Schumpeter (1912) as “new combinations” that enter the economy in various types, such as new technologies, products, new organisational or institutional forms. Through their diffusion they create change and the more radical they are, the deeper the transformation processes they cause. Schumpeter (1942) introduced the concept of “creative destruction” to capture these economic dynamics. Such a process of creative destruction is not just bound to the economy but can also be translated to science and other

¹Marlies Schütz, Graz Schumpeter Centre, University of Graz, E-Mail: marlies.schuetz@uni-graz.at

²Laura Zilian, Graz Schumpeter Centre, University of Graz, E-Mail: stella.zilian@uni-graz.at

³Stella Zilian, Graz Schumpeter Centre, University of Graz, E-Mail: laura.zilian@uni-graz.at

realms of society; it is a process that creates disruptions, is far from even and may go along with paradoxes and antagonism.

Against this background, we focus on the current socioeconomic transformation process of the digitalisation from a Schumpeterian viewpoint and use the notion of “the process of creative destruction” as a conceptual framework to discuss selected actually observable phenomena of the digital economy that are in conflict with some bold and still very popular assumptions of “perfect competition”. By means of some examples we show that the socioeconomic consequences of the digitalisation cannot be analysed within the narrow perspective of Neoclassical theory as the actual characteristics of markets usually deviate from the underlying assumptions of perfectly competitive markets. These contradictions between theory and reality become especially evident if one looks at markets that have emerged due to digitalisation: While the entry barriers for digital markets are assumed to be low which is, for instance, reflected in the fact, that most start-ups in the European Union form part of the digital industry (Kollmann et al., 2015), several “superstar firms” (e.g. Google or Facebook) dominate large spheres of the digital economy and exert market power, e.g. via their monopoly over user data. Another example is the dynamic change of qualifications and work tasks due to the interplay of up- and down-skilling (Hirsch-Kreinsen, 2015), that stands in sharp contrast to the assumption of no transaction costs (implying perfect mobility of production factors). In light of the digital economy and the novelty of phenomena it brings about, it is the objective of this essay to illustrate, so to speak, some of the perfect contradictions between theory and reality that ask for new ideas destroying the old ones and making them obsolete.

References:

Hirsch-Kreinsen, H. (2015): Digitalisierung von Arbeit: Folgen, Grenzen und Perspektiven. Soziologisches Arbeitspapier Nr. 43. Available online: <http://www.forschungsnetzwerk.at/downloadpub/20151015-Hirsch-Kreinsen-2015-Digitalisierung-von-Arbeit-Soz-Arbeitspapier.pdf>. (last accessed: 12.04.2019).

Kirman, A. (2016): General Equilibrium Theory. In: Faccarello G. and Kurz H.D. (eds.): Handbook of the History of Economic Analysis, Volume III, Developments in Major Fields of Economics, pp. 236-254, Cheltenham: Edward Elgar.

Kollmann, T., Stöckmann, C., Linstaedt, J., and Kensbock, J. European Startup Monitor. Available online: https://europeanstartupmonitor.com/fileadmin/presse/download/esm_2015.pdf. (last accessed: 12.04.2019).

Lipsey, R., Carlaw, K. and Bekar, C. (2005). Economic Transformations. General Purpose Technologies and Long-term Economic Growth. New York: Oxford University Press.

Perez C. (2013): Unleashing a Golden Age after the Financial Collapse: Drawing Lessons from History. In: Environmental Innovation and Societal Transitions, 6, pp. 9-23.

Schumpeter, Joseph A. (1912): Theorie der wirtschaftlichen Entwicklung. Eine Untersuchung über Unternehmerrgewinn, Kapital, Kredit, Zins und den Konjunkturzyklus, Leipzig: Duncker & Humblot.

Schumpeter J.A. (1942): Capitalism, Socialism and Democracy, New York: Harper.