

INTRODUCTION

The main premise of this investigation is that finance is potentially a major determinant of growth and thus affects economic development. Good finance fosters the correct allocation of the financial resources, the fair redistribution of the wealth and the positive economic growth, whereas bad finance captures part of the created wealth and thanks to a *high-technologically advanced financial system* with the ability to create money *ex nihilo*, over time it drags the economy down to recession or negative growth, destroying wealth and consequentially social welfare.

Therefore, structural factors are at the bottom of the persistence of instability and thus of what we call along the essay *bad cycle*. As a result, the good health of the real economy and the protection of public interests eventually seem to be quietly overlooked in favour of private self-seeking interests. The regulatory response has the responsibility and the priority to return the economic system to what we will call in the following chapters the *virtuous cycle*.

The underpinning research questions of this investigation have two dimensions; the macroeconomic analysis focus on the queries “how do economics and the financial system interact to affect economic growth?” and “Is there a profound difference between *sociological* and *technological* definitions of the financial system?” and, the policy analysis focus on the following queries “how can the *virtuous cycle* be restored? and how can a *virtuous cycle* be prevented from becoming a *bad* one, again?”

The thesis is divided into three main parts. Chapter 1, which is the literature review, is entitled “Finance and Growth: Modern Interpretations of the Thoughts of Schumpeter”. It provides an interpretation of Schumpeter’s work on growth and cycles in light of *New Growth Theory* and contributions to *Evolutionary Economics*. The overall aim is to develop a framework for exploring the interaction between the financial system and economic growth and cycles, which is clearly deficient in neoclassical models and completely neglected in the evolutionary approach.

Chapter 1 tackles the difficult topic of why economies do not simply grow, but instead have periods of increasingly rapid growth punctuated by recessions with slower and occasionally negative growth, as occurred in the “Great Recession” following the 2007- 2009 “Global Financial Crisis”. In the literature, work on how financial crises lead to recessions, and how bigger crises lead to deeper recessions, is well developed but it is mainly data-based and noticeably little work has been conducted on building an appreciable strong theoretical foundation focused on the *finance - growth* inverse relationship, rather than the widely investigated classical *growth - finance* relationship. What we learned from the 2007-2009 financial crisis is that the financial sector appears to have the power through financial innovation to spread “self-seeking” behaviour throughout the economic system, distorting the original functions

for which financial institutions were established. In the literature there is little work which explains why and under what conditions the presence in the economic system of the *technologically highly-advanced financial system* could provoke the dynamics of economic expansion or depression, impacting on economic development. According to the main hypothesis of this research work (see figure 2, chap. 1, p. 42), the economy is still in a so-called *bad cycle*. This started during the 1970s-80s with the technological boom. Therefore, the research considers the extremely difficult problem of explaining how a switch from a *bad cycle* to a *virtuous cycle*, possibly following alternative policy tools and public condemnation of the abuses of the financial sector, will bring into use financial innovation tools as a force for achieving good economic outcomes in the social interest, rather than for the selfish speculative interests of few powerful people and their inner circles.

In Chapter 2, entitled “Understanding the Switching Between “Virtuous” and “Bad” Cycles in Finance and Economic Growth”, a very complex and non-linear Agent Based Model (ABM) with a balance sheet approach is presented. In particular, the aim of the model, through a series of simulations, is to explore the impact of securitization and other financial innovations on real GDP. The model is called the BFSE (Base-line Financial System Economy), stressing one economy which starts from the financial sector. It provides evidence of the centrality of the financial system, which would seem to drive economic development, given the crucial role of financial innovation, making possible monopolistic financial power concentration and a *wealth trap*¹ generation. The novel contribution is the multiplier effect of the mix between the access to securitization of the mortgage portfolio of banks and the financial innovation degrees in the economic system. Banks are allowed to create collateralized mortgage obligations up to a certain non-fixed fraction of their mortgage portfolios and are supposed to sell (transfer) these newly created securities to a mutual fund. This operation allows the fund to obtain a fraction of the cash flow of interest and principal repayment of the mortgages but, on the other hand, the fund also takes part of the risk of mortgages defaults. The results are that the risk is pushed forward through the “Originate To Distribute” channel, bringing off-balance the riskier mortgages for the banks. Furthermore, this operation endows banks with additional liquidity and lowers the risk-weighted value of their assets side. The final result is that easily the financial system liquidity and the Basel II capital adequacy ratio (CAR) are altered and therefore banks foster risky lending and increase the rate of growth of the “bank money” in the economy.

Chapter 3, entitled “BFSE Experimentation and Policy Proposal: How Can the Switch From Good to Bad Cycles Be Reversed?” presents a first experiment of an extreme simplification of the

¹Effect of the capture by the financial system of financial resources that are destined to the real economy and diverted to speculative purposes.

core of the main BFSE model proposed. Three different degrees of financial innovation, given a fixed securitization ratio, are implemented within the ICEACE model (Erlingsson et al., 2013)² to test if there is evidence of the underlying structural dynamics assumed. The lending constraints are presented as an endogenous phenomenon of the two related parameters, max securitization and financial innovation degree, in order to emphasize more clearly the effects of financial innovation which increase financial power concentration, capturing part of the financial resource for speculative uses and affecting growth, leading it towards deep recession in the case of financial default.

In light of the simulations made, the policy introductory discussion is focused on a mix of alternative macroprudential, structural and monetary policies to recover the entire economy from *bad cycles* and preventing future lapses into them.

The challenge of this research is essentially to introduce a theoretically sound foundation for a new paradigm, finance vs growth, and makes an important contribution to the policy literature, alongside its methodological work on developing multi-agent models to understand the interactions between the financial system, the real economy and indeed the polity.

²ICEACE is an open source ABM model which presents a similar backbone to BFSE. However, in many aspects, discussed in chapter 3, the two models are different. Despite this, ICEACE is an excellent base to start our investigation, making an incremental modification of the main code, and inserting the core of the BFSE model.