

THE EFFECTS OF FINANCIALIZATION
ON INVESTMENT IN EUROPE

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for the degree of Doctor of Philosophy awarded by the
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DECLARATION

I certify that this work contained in this Thesis, or any part of it, has not been accepted in substance for any previous degree awarded to me, and is not concurrently being submitted for any degree other than that of Doctor of Philosophy being studied at the University of Greenwich. I also declare that this work is the result of my own investigation, except where otherwise identified by references and that the contents are not the outcome of any form research misconduct.

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The usual disclaimers apply.

ABSTRACT

This thesis provides new evidence about the effects of financialization on non-financial firms' investment in Western European countries. First, we start by clarifying the nature of 'rent' in advanced capitalist economies, thus reviewing the key contributions within the history of economic thoughts about the relationships between different forms of 'unearned incomes' and the dynamic of accumulation in non-financial businesses. We thus provide a description of the new 'financial rent' that emerged in financialized economies since the 1980s. Second, we review the literature about firms' physical investment, highlighting the general lack of the inclusion of financial variables as key determinants. Third, using data from the Worldscope database about non-financial corporations' balance sheets for the period 1995-2015 we find robust evidence of an adverse effect of both financial payments (interests and dividends) and financial incomes on investment in fixed assets. This finding is robust for both the pool of all Western European firms and selected single country estimations. The negative impacts of financial incomes are non-linear with respect to the companies' size; financial incomes crowd-out investment in large companies, and have a positive effect on the investment of only smaller, relatively more credit-constrained companies. Moreover, we find that a higher degree of financial development is associated with a stronger negative effect of financial incomes on companies' investment. When financial variables are integrated in the estimation of companies' investment behaviour, the impact of the increasing role of finance within investment decisions is overall negative.

These findings challenge the common wisdom on 'finance-growth nexus', and especially the findings of the 'conventional' empirical literature about firms' investment. Our findings support the 'financialization thesis' that the increasing orientation of the non-financial sector towards financial activities is ultimately leading to lower physical investment, hence to stagnant or fragile growth, as well as long term concerns for productivity.

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CHAPTER 1. Introduction

This first chapter introduces our work. Section one defines the topic under analysis. Section two presents and discusses our research question while in section three we briefly describe the research approach of our analysis, as well as the key contribution of our work. Section four outlines the structure of the thesis.

1.1 Introduction and definition of the topic

The last three decades have seen the development of a phenomenon now central in the evolution of advanced capitalist economies: the ‘financialization’ of the economy. Within the academic community, an agreement about the meaning of the term has yet to be reached. Notwithstanding this, we can summarize financialization as an ongoing and self-reinforcing economic and social process that manifests itself in the general growing prominence and influence of behaviours derived from the financial sector. Following Van der Zwan (2014), we can highlight three main features of this process: a) a new regime of accumulation largely shaped around financial motives, b) the consolidation of the ‘shareholder value’ as the key principle in corporate governance, and c) the dissemination of practices linked to finance within everyday life (pension, mortgages, healthcare etc.). This thesis aims at contributing to the understanding of the first two points. The main objective of this thesis is to identify and empirically examine the effects of financialization on firms’ investment in fixed assets in Europe. The general microeconomic perspective is enriched by the inclusion of a prominent macroeconomic aspect of financialization, i.e. the size of the financial markets and intermediaries in different countries. The outcome of this analysis aims at provide new evidence on the impacts of financialization on investment in different economic contexts.

1.2 The research question

The main research question upon which this thesis has been developed is the following:
How strong and in which directions financialization, conceived as internal and external pressure on conducts, had influenced firms’ fixed assets accumulation?

The process of finding the answers within this work leads to what we see as important novelties. First, we provide a model of firm-level investment which integrates the effects of financial incomes as well as payments in a coherent fashion. Second, we provide the first microeconomic evidence for a large sample of European NFCs (as well as for some major single countries) on the effects of financialization on investment using firm data from Worldscope database. This database allowed us to build a consistent measure for companies’ financial activities regarding both inflows and outflows. Third, we explore the interactions between increasing

financial development (henceforth FD, defined conventionally as the financial market activities) and the effect of financial incomes on NFCs' investment.

1.3 The research approach and contribution

This research builds on two main sources and approaches. For the first part, we rely on the approach of the history of economic thought to describe the evolution and the description of the new 'financial rent'. Furthermore, from the analysis of the key contributions we derive useful insights for the empirical study. The second part of this work is based on secondary data about companies' annual reports, obtained from Worldscope database. This part of the research is designed to be consistent with the quantitative approach and, in particular, the econometric estimations. This method is applied to quantify the effect of financialization on companies' physical investment, specifically using dynamic panel data estimator (Generalized Method of Moments, or GMM).

This thesis contributes to the understanding of the effects of financialization on non-financial companies' physical investment in Europe. Our analysis provides new empirical proof about the relationship between firms' financial operations and their core activities.

We find robust evidence of an adverse effect of both financial payments (interests and dividends paid) and financial incomes (interests and dividends received) on investment in fixed assets during the period 1995-2015, and in particular before the 2007-8 crisis. This finding is robust for both the pool of all Western European firms and selected single country estimations. The negative impacts of financial incomes are non-linear with respect to the companies' size; financial incomes crowd-out investment in large companies, and have a positive effect on the investment of only smaller, relatively more credit-constrained companies. Moreover, we find that a higher degree of financial development is associated with a stronger negative effect of financial incomes on companies' investment. When financial variables are integrated in the estimation of companies' investment behaviour, the impact of the increasing role of finance within investment decisions is overall negative.

To the best of our knowledge, this is the first study about the effects of financialization on investment at the microeconomic level applied to European countries. Furthermore, this work contributes to the literature by explicitly taking into account, again to the best of our knowledge for the first time, firm-level financial variables when testing the beneficial/detrimental effect of financial development on firms' accumulation of fixed assets. In addition, on the more applied side of the contributions of this work, our findings provide useful elements to inform various stages of the process of policy development. We illustrate some of the policy implications of our analysis within the final conclusion of this work.

1.4 The structure of the Thesis

In Chapter 2 we present a theoretical review about the concepts of ‘rent’ and ‘rentier’ in the history of economic thought. Our discussion of the various paradigms is based on three main questions, namely how the nature of rent is explained, which are the main features of economic agents who receive this rent, and what are the effects on the economic system of the rent and of rentiers’ behaviours. In brief, this chapter reviews the theoretical evolution from the agricultural rent to a ‘monetary rent’, and finally the ‘financial rent’ in the current phase of capitalist development. The aim of the this Chapter is to clarify the economic categories of rent and rentiers in order to pave the way for the structuring of coherent and sound economic models.

Chapter 3 presents a review of the literature about firm-level investment that highlights both the key elements of the ‘conventional’ approach to the modelling of the accumulation of fixed assets, and the main insights by the ‘financialization’ literature.

In Chapter 4, we describe our methodology. The first part presents a discussion about our philosophical stance, whilst the second one outline the methodology and method employed in our analysis.

Chapter 5 describes our data source and presents some key stylized facts about the main variables used in our work. The descriptive analysis presented in this chapter provides a first picture about the relationship between firms’ investment and increased financialization.

In Chapter 6 we presents the results of our econometric estimation about the effect of financialization on firms’ investment in Europe. We provide evidence for the aggregate sample of fourteen European countries, as well as country specific results for the major economies. Furthermore, the computation of the economic effects of financialization on investments allows us to discuss the different impacts in a comparative way, as well as provide powerful estimates

Chapter 7 presents our conclusions. This last chapter summarizes the main findings, presents some implications for policy, discusses some limitations of our work, as well as potential future development of our analysis.

CHAPTER 2. From farmlands to financial assets. A literature review about the impacts of rent incomes on capitalist accumulation.

2.1 Introduction

In the nineteenth century, the classical economist David Ricardo stated that “to determine the laws that regulate income distribution is the principal problem in Political Economy” (Ricardo, 1821:3). In this respect, we believe that the connection between Classical economists’ concepts of rent and various definitions employed by economists up to date needs clarifications. Naturally, every economic notion is embedded in the transformations of the socio-historical contexts of production and distribution. However, there is a mismatch between the metamorphosis and multiplication of the substance of rent on the one hand, and the evolutions of the economic definitions on the other.

Although there is no universally recognized definition in the existing literature, the ‘rentiers’ are usually identified as those economic actors who derive their income from any source different from wage and profit. Therefore, the rent is primarily described as a ‘passive income’ over a property (such as a piece of land) for the use of which the owner can require payments without being directly involved in the entrepreneurial activity. In a more contemporary perspective these ‘properties’ may take the form of various assets such as equities, bonds, securities, monetary deposits and other financial instruments that generate an income from interest (or dividends). For example, in the work of Epstein and Power (2003) the revenues of the rentiers are defined as the sum of income earned by owners of financial firms and financial benefits obtained by any holder of financial assets (i.e. households). This description, derived from the one proposed by Kalecki (1990), opens the way for inclusion of capital gains on financial assets also realized by non-financial companies in the definition of the income of rentiers.

Belonging to different theories of income distribution, several authors have tried to integrate different shapes of the notion of rent in their descriptions of the economic systems. Without neglecting a general discussion of the various paradigms to which the principal schools of thought refer to, in each section of this chapter we will try to answer to three main theoretical questions. Firstly, what are the sources of rents and how are they explained? Secondly, who are the beneficiaries of this type of income and how they behave within the socioeconomic system? Thirdly, to what extent and in which ways various forms of rent affect the accumulation processes? We will see how these issues will be strongly linked to the historical configuration of the different dominant classes, the production structures and the monetary systems.

We propose a comprehensive (though non-exhaustive) analysis of the concept of rent because a clear definition of economic categories is essential for building coherent and sound economic models (both analytic and empiric). This work comes from the perception of the need of clarification for the particular category of rent, one of the most reliant on the changes of the

economic system under study. The main contribution of this chapter is the clarification of the theoretical evolution from the agricultural rent to a ‘monetary rent’, and finally to the description of a ‘financial rent’ in the current phase of capitalist development.

The remainder of the chapter is structured as follows. In the second section, we present the first major steps in the clarification of the concept given by pre-Classical political economists. In the third section, we discuss the contribution of Smith and Ricardo, the two key figures within the school of the Classical political economics. The fourth section focuses on two notions of rent that mark the departure from the ‘annuity’ linked to the ground, rather focusing on monetary factors as the original source. In the fifth section, we review recent contributions about the new articulation of rent in a capitalist economy under the process of financialization. Section six concludes.

2.2 Shaping the economic theory of rent: first steps and consolidation

The pure economic concept of rent, dating back to the XIIth century, is intrinsically connected to the one of ‘property’. The word comes from the Vulgar Latin *rendita* whose past participle is ‘*rendere*’, which means “to give back.” Thus, in a simple way, we can think about rent as the payment in exchange for a temporary use of any property. Although this definition can easily be accepted, we can explain its sources and effects in various ways. We can identify a moral debate about rent already in the Aristotelian idea of “fair price” and after in the arguments provided by the Scholastic philosophers against the phenomenon of usury in the XIIth and XIIIth centuries (Danzig, 2000). Others scholars date back the birth of the rent as an economic entity to the XIIIth and XIVth centuries, when the process of “enclosures” for the English fields started (Choen and Weitzman 1975; Clark, 2002). Lands traditionally held in common (through the open field system) were progressively fenced, hence becoming private property of the Landlords. In the XVIth century, this process became intensive. Despite these first contributions, it is only with the birth of Classical economics in the XVIIIth century that we have a first theoretical formalization of rent. However, before we focus on the Classical economists’ contributions, we believe it is important to have a look at the authors that paved the way.

2.2.1 The concept of ‘surplus’

A good starting point can be the notion of *surplus* which Petty, in his “Political Arithmetick” (Petty, 1676) and other writings, clearly defines as an excess of output in agriculture (Roncaglia, 1985). At the end of the production cycle, once the means of production are restored in order to make possible another future sequence, the surplus is defined as the quantity of harvest (in terms of corn) available for consumption and “investment” purposes¹. After highlighting the existence in society of more people than required in agriculture and the presence of activities different from

¹ It is interesting to note that a corollary of this definition is the “externality” of rent from the productive process.

this latter, Petty reinforces the idea of this “natural surplus” seeing in it the “proof of the rent” (Vaggi and Groenewegen, 2003). If the surplus is measured by income, by persons not employed in the agricultural sector, or is equal to the amount of wage goods in excess of what is necessary for the subsistence of agricultural workers, is a question to which Petty has not a precise answer. Nevertheless, what is clear is that the presence of a physical excess on subsistence goods is a necessary condition for the division of labour. Therefore, in the vision of Petty, the ‘mysterious existence’ of natural rent in the form of corn has to be found in the average of surpluses within the agricultural cycle (Aspromourgos, 1996: 23).

If in this first exposition the rent occurs merely as a ‘signal’, in François Quesnay’s famous *Tableau économique* (Quesnay, 1894), it is clearly defined as that part of the surplus (the net product or *produit net* in Quesnay’s terminology) that farmers and capitalist tenants have to pay to the Landlords.² Indeed, in Quesnay’s ideal description of the economic exchanges between three classes (the landowners, the agriculture and manufacturing workers), the starting point is the payment of rent by the farmers to the Landlords at the end of the production sequence. After that, they spend this income in agricultural commodities (for subsistence purposes) and manufacturing commodities (for luxury purposes). The manufacturers and the farmers utilize their income to buy primary commodities plus raw materials and manufacturing products respectively. Because the landowners are buying goods from both of the other two classes, the flows between these three groups are clearly “landlord-driven”. Unlike the surplus-producing agricultural sector, the manufacturing industry is categorized as ‘sterile’ since it merely transforms a particular quantity of primary commodities in exactly the same amount of manufactured goods.³ Furthermore, also the commercial sector is unproductive, because it only deals with the exchange of goods without generating wealth.

The real world of the school of the French Physiocrats was that of the XVIIIth century in France, when the economic gap with the most developed England was deepening. For them, since land was the primary source of the ‘Wealth of Nations’, the major economic problems were the very low productivity of mainly feudal techniques and an organization of production mostly in the form of sharecropping. For Quesnay, (and for the Physiocrats school in general), the landowner’s class was the enabler of the wealth creation and ruler of the social distribution of income. This social position was justified on the grounds that they deal with the cleaning and the equipping of the soil, making it available for agricultural production. In addition, since the Landlords spend all

² In Physiocratic economics, the income of capitalist tenants was considered in the same way as the wage of agricultural workers.

³ As clarified by Vaggi (1987), it is inconsistent to consider the manufacturing sector as sterile even in this framework, since this sector produces inputs for agriculture. Thus, the manufacturing sector has an indirect but important role in determining the surplus. Doubtless, this view is the economic translation of a power dispute: manufacturing, and also commercial activities, were run by manufacturers and traders, or the two emerging groups of the French bourgeoisie to which the Physiocrats preppeded the right to govern of the nobles.

their income in the purchase of goods produced by the two sectors⁴, rent payments do not subtract resources to the economic system functioning. On the contrary, they are a fundamental source for it. In short, farmers and Landlords had to be the undisputed engine of a new and more productive phase of growth while the rent payment for the land would sustain the sterile part of the society.

This view was partially modified by Jacques Turgot in his 1760s major work "*Reflections on the Formation and Distribution of Wealth*" (Turgot, 1793). Firstly, Turgot to some extent adjusted the Physiocratic partition of society. Similar to Quesnay, the economic system consists of three classes but, the two productive sectors (agriculture and also manufacturing), are subdivided between employees (wage earners) and entrepreneurs (profit makers). Secondly, particularly interesting is Turgot's view about Landlords and rents (Groenewegen, 1977). As before, part of the total product is devoted to the reproduction of the system while the remaining portion (the net product or rent) is transferred to the Landlords by the farmers. However, here the primary economic source of rent is not the arrangement of the soils by Landlords but rather a competition between capitalist-farmers at time of leases renewal:

"The competition between rich undertakers of cultivation fixes the current price of leases, in proportion to the fertility of the soil, and of the rate at which its productions are sold, always according to the calculation which farmers make both of their expenditures, and of the profits they ought to draw from their advances. They cannot give to the owners more than the overplus. But when the competition among them happens to be more animated, they sometimes render him the whole overplus, the proprietor leasing his land to him that offers the greatest rent" (Turgot, 1793: §63. Rfl 140).

Therefore, even if also for Turgot the rent is a gift of nature from the fertility of the soil on the one hand, on the other hand it owes its primary existence to the productive activities of humans. According to Brewer (1987), Turgot anticipated the view on rent given later by Classical economists and, in particular, the so-called 'Ricardian theory of rent'.⁵ As we had shown, in these pre-classical authors the words 'rentier' and 'rent' were not related to moral judgments: it is a technical definition within the tripartite division of classes and income flows.

In conclusion, in Physiocrats' writings we can find the first theorization of the surplus as an excess of produced wealth over the part of it consumed in the production cycle. The surplus is in physical terms (the harvests), and the fertility of the soil is the first source of this share. Given that manufacturing is seen an unproductive sector only devoted to the transformation of agricultural production, the net product becomes entirely rent. The manufacturing sector, including workers, is just an input to be re-built for the subsequent cycle of production. In conclusion, in the

⁴ In other words, they have a propensity to consume equal to 1.

⁵ Brewer assigns to Turgot the title of 'founder of classical economics'.

writings of the Physiocrats we find the first description of the transition from a condition of ‘subsistence’ to a socio-economic system that can generate a ‘surplus’.

In the next section we will focus on the theories of distribution by two of the most important Classical authors, trying to highlight the main differences and links between their theories of rent and those of the previous contributors.

2.3 Two classical theories of rent: Smith and Ricardo

In our short analysis of these ‘pre-Classical’ authors, we can clearly see the strong connections between the concept of rent, the ground and the Landlords. This link is a consequence of the peculiar structure of first merchant-capitalistic societies, in which the payments of rents were ‘in kind’. The end of the XVIIIth century showed the consolidation of a more coherent body of theories, also inspired by dramatic changes in the productive structures under study. The specific emphasis given to categories like social classes, cost of production, and surplus is the main characteristic of the analyses of production, exchange and distribution belonging to the so-called ‘Classical political economists’ (Garegnani, 1984).⁶

2.3.1 Adam Smith’s absolute rent

In his most famous work, the well-known “*An inquiry into the nature and causes of the wealth of Nations*” (Smith, 1776)⁷, Adam Smith focuses specifically on the issue of distributive shares in the eleventh chapter of the First Book. Although Smith shared with the Physiocrats the analysis of rent as an agricultural occurrence, he tried to bring socio-economic factors into the discussion. In his view, the rent from land is not always justified in the light of land improvements made by the Landlords and it is proportional to what farmers can afford to give. As well as in the Physiocratic representation, also for Smith the annual product is divided into two parts. The first fraction goes for restoring the materials and tools used in the production of finished goods. The second part consists of a collection of peculiar incomes, whether profit for the owner of capital or rent for the benefit of those who own the land. In his view, the source of the surplus (profits plus rents) was

⁶ Garegnani writes that “The determination of the size of the social surplus was accordingly the centre around which these theories revolved. In principle this way of determining the non-wage share is simple. Two magnitudes are assumed to be known prior to the determination of the surplus. They are: (i) the real wage, i.e. the quantities of the several commodities constituting the wage rate, (ii) the social product, i.e. the aggregate of the commodities produced in the year. Since (iii) the technical conditions of production of the various commodities are also known prior to the determination of the surplus, a known social product implies a known number of labourers employed. By multiplying the number of labourers by the known physical wages, we obtain the part of the product that goes to the labourers which we may call “Necessary consumption” [...]. The surplus, i.e. the share of the product going to the classes of society other than labourers, can then be determined by subtracting the “Necessary consumption” from the Social product, taken net of the means of production” (Garegnani, 1984: 23)

⁷ Here we will refer to “*An inquiry into the wealth of nations*” Edited by S. M. Soares. MetaLibri Digital Library, 29th May 2007. This edition's references are made to corresponding pages of the second volume of “*The Glasgow edition of the work and correspondence of Adam Smith*”.

the productivity of labour as a consequence of the division of labour. In respect to the Physiocrats, the novelty is that labour activity is no longer productive exclusively in agriculture:

"Farmers and country labourers, indeed, over and above the stock which maintains and employs them, reproduce annually a net produce, a free rent to the landlord. As a marriage which affords three children is certainly more productive than one which affords only two; so the labour of farmers and country labourers is certainly more productive than that of merchants, artificers, and manufacturers. The superior produce of the one class, however, does not render the other barren or unproductive". (Smith, 1776: 675).

From this passage we can see that when Smith "extended Quesnay's notion of surplus by showing that surplus originated from the production in general and not from agricultural production alone, profits emerged as a second component of the surplus alongside the rent of the land" (Garegnani, 1984: 293). Furthermore, Smith argued that the capitalistic configuration of the division of labour does not correspond to a fair distribution of income. Indeed, capitalists take possession of the entire net product according to their anticipation of the means of subsistence for workers and, after deducting a portion as profit, they distribute the remaining part to landowners.

Smith's analysis takes place in a world in evolution from a feudalistic and commercial type of capitalism towards an industrial configuration of productive processes. In a more advanced stage of society, where resources and means of production are now increasingly 'private property', rent becomes a component of the "natural price" equation:

"The wood of the forest, the grass of the field, and all the natural fruits the earth, which, when land was in common, cost the labourer only the trouble of gathering them, come, even to him, to have an additional price fixed upon them. He must then pay for the licence to gather them; and must give up to the landlord a portion of what his labour either collects or produces. This portion, or, what comes to the same thing, the price of this portion, constitutes the rent of land, and in the price of the greater part of commodities makes a third component part ". (Smith, 1776: 68).

From a superficial reading, for Smith the level of rent is determined by the limited availability of natural resources. Consequently, rent becomes a particular kind of price that is 'monopoly price'. In short, and in contrast with Turgot, here rent is the result of a lack of competition. However, as pointed out by Lackman (1976) and by Stirati (1994), alongside the 'monopoly price' interpretation Smith understood rent as a part of the surplus generated by labour in both agriculture and industry. Realization of rent occurs when the price of agricultural products exceeds the costs of production.

We can write the equation for the Smithian natural price of a single unit of product as

$$p_n = wn + rk + Rl$$

Where w is the natural wage, r is the uniform rate of profit, R is the natural rent and n , k , l respectively are the numbers of workers, amount of capital⁸ and land employed in order to produce a single unit of a good.⁹ We can specify the previous identity for rent and simply get

$$Rl = p_n - (wn + rk)$$

From this formulation, we can see that payments to the Landlords depend on the difference between the natural price and the total natural costs of production. If the “ordinary price”¹⁰ is higher than the sufficient level for the replacement of the stock utilized in the production process (in other words, if it is higher than the natural price p_n), there will be a surplus that will “naturally” go to the rent of land. In this more general formulation, Smith observes: "rent is different than wages and profits. Wages and profits are costs and therefore determine high or low price. High or low rent (or no rent) is the result of high or low price for the products of the land" (Lackman, 1976: 287). For the same levels of wages and profits, rent increases with increasing prices. It comes from this that the rent is evidently price-determined and not price determining. Together with profit, payments to Landlords are treated as "deductions from what is 'naturally' or 'originally' the product of labour" (Dobb, 1973: 45), since in Smith, and Classical economists in general, the profit plus rent share is a residual given after that historical condition of labour force reproduction set the natural wage.¹¹ Therefore, it is easy to see that this representation rests on the inherent interdependence in the distribution of production among the three classes of income: in fact, since rent is part of the "residual", it will be higher (lower) as profits, and wages will be lower (higher). Smith points out that in any "civilized country" most of the commodities' exchange value consists of all these three type of revenues (in different proportions). Once rents, wages, and profits are paid to their respective contributors, the owners of stocks (that is capital) would re-invest their net profit in the sequent production and trade cycle, thus creating wealth for the entire society. From this perspective, one could argue that the public interest of society corresponds to the particular interests of the three social orders. However, in Smith's description we have a conflict between the interest of the profit-earning class, (which Smith in his time identifies with the merchants and master manufacturers), and the ‘common sake’ (Dobb, 1973; Haakonssen, 2006). The increase in the real wealth of the society would give a higher rent payment to Landlords and, given the

⁸ In Smith's analysis, as in all the Classical authors, capital is conceptualized as the sum of wage anticipations.

⁹ These rates of returns are the prevailing in "the general circumstances of the society" at a certain time of analysis.

¹⁰ This can be interpreted as a sort of market price.

¹¹ In general, Classical authors considered the real wage rate as an exogenous variable given by peculiar historically determined institutional settings.

resulting increase in the demand for labour, this would lead to a higher wage for the workers. With respect to the class of merchants and manufacturers, Smith argues that the rate of profit, in the opposite way than rents and wages, shows an inverse relationship with the overall prosperity of the community.

At this point, in our opinion a contradiction arises. As we have seen, in the Classical theoretical framework, the size of the surplus is the primary category that explains long run dynamics. In addition, for future higher regime of production most of the surplus has to be “re-invested”. Therefore, we can easily say that the creation of wealth is higher when the share of surplus given to rent is lower. Thus, in Smith we cannot find a direct examination of the way in which the reproduction cycle is affected by the level of the different distributive shares. Far from interpreting this inconsistency as a deficiency, we emphasize that Smith’s fundamental question was about the causes of the “Wealth of Nations” and not about the mechanisms that govern the distribution of the latter.

Within the discussion about the relationship between these three classes Smith raised another interesting point: the potential overlap between rent and profit incomes, occurring when two or more sorts of revenues belong to the same economic agent. For instance, among others examples propounded by Smith in this respect, he wrote

"A gentlemen who farms a part of his own estate, after paying the expense of cultivation, should gain both the rent of the landlord and the profit of the farmer. He is apt to the denoninance, however, his whole gain, profit, and thus confounds rent with profit [...]"(Smith, 1776: 70).

Furthermore, in this part he seems to imply that this process of hybridization of these ‘multiple actors’ could deepen with increasing complexity of the production system.

2.3.2 Ricardo’s rent theory

In contrast to Smith, David Ricardo saw in the analysis of the distribution of income the central issue of the political economy. The high importance given to this issue is due to Ricardo’s consciousness of the effects that distribution could have on economic dynamics. For him, the development process is primarily related to distribution since the capitalists’ share of income is its key determinant. Although we can find some theoretical contradictions in the work of Smith, with Ricardo we have a first rigorous theory of different income shares and the sources of their magnitude. Next, we will try to analyse how the rent comes into this new Ricardian framework.¹²

¹² Here we will refer to the concept of “differential rent” since this is the concept developed by Ricardo in his theory of rent. For a discussion about the “intensive rent” see for example Montani (1972).

It is worth noting that when Ricardo was writing his major contributions (*“Influence of a low price of corn on the profit of stock”* in 1815 and *“On the Principles of Political Economy and Taxation”* in 1817)¹³ Europe was facing profound social and political upheavals. Massive and contradictory political forces marked the first half of XIXth century. From one side, there were the attempts to restore the ‘old absolutist order’ by the aristocracy and from the other the increasing power of the bourgeoisie. Indeed, this was a period in which the so-called Industrial Revolution was laying the groundwork for the establishment of the bourgeoisie as the economically and politically dominant class. The Ricardian division of the capitalistic society corresponds fairly well to the political division in the English society of that time.

For Ricardo, the focus of any economic analysis should be on the distribution of social product between wages, profits and rents. The accumulation process or economic growth, depends on trends of the profit rate with respect to the wage rate. Therefore, the way in which the profit rate is determined has to be the main object of study. However, we want to clarify that, although considering it as the primary purpose of the investigation, Ricardo did not give an explanation of the determinants of the rate of profit as such. Indeed, in his study this rate can be merely seen as a "theoretical residual": it is that part of the social product remaining in capitalists’ hands after having paid wages and rents. However, if profit is a residual, it means that the latter will be as large as lower will be rents and wages, which clearly highlights the source of the conflict between social classes in the distribution of production.¹⁴ Thus, to investigate the determinants of rent is essential in order to assess the way in which it affects the level and the dynamic of the profit rate. In his 1815 Essay on the *“Influence of a low price of corn on the profit of stock”*, Ricardo ascribes the overall natural level of the profit rate¹⁵ to the profit rate determined within the agricultural sector. In particular, by undoubtedly stating that these insights belonged formerly to authors such as Anderson, West, Torrens¹⁶, and especially to Malthus, he saw in the ground rent the source of the overall rate of profit. As a result, it is clear that the Ricardian theory of rent originates from the need to explain the rate of profit. In his vision, the rent is explainable as "that portion of the produce of the earth that is paid to the landlord for the use of the original and indestructible powers of the soil".¹⁷

¹³ In this section we will refer to the standard edition of Ricardo’s work: Sraffa P., Dobb M.H. (Eds.), (1951-1973), *“The Works and Correspondence of David Ricardo”*, 11 Vols., Cambridge University Press.

¹⁴ A clear description of the “fundamental social conflict” that characterizes Ricardo and the other Classical economists can be found in Scrope (1831). Being critical with Ricardo’s theorization, the author highlighted how in this framework the Landlords can prosper only at the expense of the other two groups (and of capitalists in particular) and how capitalists can increase their wealth only by worsening the condition of the working class. For Scrope, these are the socio-political outcomes of the Classical theories of rent and of profit.

¹⁵ In a condition of equilibrium, the profit rate must be the same in agriculture and in industry because capital is not attracted by a more profitable sector than another is.

¹⁶ On this, see the preface to the *“Principles...”*

¹⁷ Chapter II, On Rent, p. 33. We will see that this is an inaccurate definition, since it seems to imply that all the soils could give a rent.

In Ricardo's scheme we can find an explanation that is missing both in the Physiocrats and Smith. The level of the rent depends on the scarcity of land, which shows an upward trend because of an unsatisfied demand for agricultural product. As long as the lands are abundant, there is not a possibility for extracting any rent from them. However, when there is a deficiency of supply due to a rise in population (thus employing the Malthusian theory of demography), the Landlords could exploit this natural shortage because of the growing social demand for the cultivations from lands of inferior quality. To the extent that cultivation on less fertile lands starts, there will be an extensive rent on the most fertile lands. Capitalists will compete to grab the most fertile (productive) land, being increasingly willing to pay more to the Landlords that own them.¹⁸ As a result, the lower productivity and the increasing cost of labour will induce a downward adjustment of the rate of profit up to that obtainable on less fertile (or marginal) land.¹⁹ Thus, for Ricardo the difference of yield between different areas in term of fertility is the source and the size of the rent. Following this view, if there were no divergences between the "powers" of different soils, the total surplus will take the form of profit, and there will be (theoretically) no rent. In short, for Ricardo rent was assumed to be of a differential nature in contrast to profits, interests and wages, in which there were no differential qualities at that time. In his view, rent does not embody a creation of new wealth, but it subsists at the expense of existing and future profits.

Ricardo's argumentations had a precise policy implication. Indeed, those were years of hostility by the bourgeoisie against the Importation Act²⁰, a set of laws introduced in 1816 in order to protect cereals producers from imports. For the reasons explained above, by imposing high import duties against international competitors these laws could ensure an increasing rent to the Landlords. Indeed, since more and more expensive imports cannot sustain the growing demand, less fertile lands had to be placed in culture. As in the analysis of Smith, also in Ricardo rent is price-determined. In fact, the result of the import duties would have been a higher price for corn and, consequently, a higher rent. Furthermore, given the lower productivity on secondary lands the resulting higher wage-cost would have lowered the rate of profit. A rise of the share of the rent, together with an increasing taxation on profits, has an adverse effect on the accumulation process and thus on the rate of growth. This process would have amplified the speed of the "tendency to that ultimate state of gloom, the Stationary State, where accumulation ceases simply because profits are so low as not to afford (the capitalists more than) an adequate compensation for their trouble and the risk which they must necessarily encounter in employing their capital productively" (Ricardo, 1951:122 cited in Kaldor, 1955:87). Since wages were supposed to remain

¹⁸ Here we can see the clearest link between Ricardo and Turgot.

¹⁹ Therefore, an increase of rents has a negative impact both on profits as a flow and on profits as a stock.

²⁰ These are the so-called "corn laws".

constant, and productivity decreases as additional less fertile land are cultivated, this growth process goes along with an increase of rent and the fall of profit.

An interesting point arises from one episode of the extensive and continuous debate between Ricardo and Malthus. The so-called ‘gluts controversy’ was about the post-Napoleonic war depression in England. Regarding the possibility of the occurrence of a situation characterized by an insufficient level of demand (Dorfman, 1989)²¹, by appealing to Say’s law, Ricardo argued that the permanent conditions of overproduction were implausible. Conversely, Malthus pointed out: "The working population could not afford to buy much more than bare subsistence" (Dorfman, 1989: 160). Furthermore, he claimed that "if everyone lived on a subsistence scale there would have to be a vast oversupply of commodities since each worker could produce much more than bare subsistence for himself and his family"(Ibidem.). In saying this, Malthus stressed that since part of profits can be saved, the level of demand may be insufficient to absorb the production entirely.²² For Malthus, there was a need for a category of "unproductive consumers" to provide the demand that would sustain the profitable employment of the remaining part of the economy. Trying to stimulate consumption by an increase in wages would have lowered profit, investments and thus negatively affected the demand.

Therefore, the “Malthusian solution” to the glut's problem was to stimulate the rents. Indeed, they can be the source of the required additional purchasing power and the support for labour demand in a “rent-led” regime. In this vision, in addition to entrepreneurs and productive workers, the functioning of any capitalist system is intrinsically sustained by a third group of ‘unproductive rentiers’. For Ricardo, stressing the validity of Say's law again, every income is spent. Therefore, capitalists’ savings are always entirely turned in new investments. Landlords, for their side, were supposed to invest much of their “not earned income” in productivity improvements of their lands. Both the two authors shared the Classical framework in which the profits are the engine for the accumulation process while rents are for unproductive consumption. For them, behind protectionist measures, the expansion of the economy implied an increase in profits. However, Malthus stressed the ‘consumptionist’ role of the rent as an active component of development. At this point, it is worth noting that Malthus’s conclusions were not a consequence of moral judgment about the landowner class. We agree with the interpretation that discusses Malthus’s category of rent (and of unproductive expenditures) not as positive or negative for the growth process, but more as a "functional elements of the profit and intended to be permanent because inexorably intertwined to it"(Graziani, 1980: X).²³ Since in his theoretical system the wage

²¹ Although the theoretical debate between the two authors had other episodes on this issue, this one seems to be the best example of the two positions.

²² Keynes himself considered Malthus as a pioneer of the idea of a “lack of aggregate demand”, calling him “The first of the Cambridge economists”. On this point see Keynes, (1933) and Costabile (1980).

²³ Our translation from Italian.

is at a level of subsistence, for Malthus the path towards higher levels of development has to be sustained by both the profit and the rent shares of the surplus. In brief, in this theory the demand is driven by non-wage incomes.

2.3.3 A brief comparison

After this exposition of the two major Classical theories of rent, we can highlight some aspects. Both Smith and Ricardo share the Physiocratic scheme in which rent is unambiguously related to natural resources and, in particular, to the land. The rent is what remains after those who are contributing to the production are being paid, while the rentier is part of an inactive and unproductive class given his unearned income from the ownership of the land. However, one first conceptual difference between these two Classical authors arises. While Smith develops an embryonic theory of an absolute rent meaning a social relation of production, in Ricardo we have a more theoretically-grounded explanation of the differential rent as the outcome of a circumstance of scarcity of land compared to the level of the demand. These two distinct forms of rent are the outcome of opposite views about the overall economic functioning. The absolute nature of the ‘Smithian rent’ originated from the conception of the production process as characterized by increasing returns. Indeed, in Smith's view, it is the absolute and not the relative fertility of the land that set the value transferred to the Landlords:

"The value of the most barren lands is not diminished by the neighbourhood of the most fertile. On the contrary, it is generally increased by it. The great number of people maintained by the fertile lands afford market to many parts of the produce of the barren, which they could never have found among those whom their own produce could maintain."(Smith, 1776: 192).

From this passage, we have a type of absolute rent that can be interpreted as a social relation of production. On the contrary, as explained before, Ricardo shaped his differential theory of rent assuming a production process characterized by diminishing marginal returns, given the non-reproducibility of the land or the “avarice of nature”. He explained the rent of lands of variable fertility by assuming the condition that the rent of the marginal land is nil. Furthermore, these diminishing returns in agriculture pose the most significant barrier to the profitability of investments. In short, the clearest difference between the two authors is that the Ricardian rent is a consequence of the heterogeneity of productive power of the land while the Smithian one can also be defined as an absolute yield.

As we have said, for the Classical authors the distribution of income is the most important factor that determine the reproduction of the system. For them, by conceiving the economic process as a set of successive phases, wages are anticipated before the start of the production process. Since there is no direct relationship between the anticipated wage and the final result of

the process (final goods), the capitalists are the owners of the total production. Therefore, the distribution of the earnings after sales is all about profit and rent (Graziani, 1980). In this framework, there is no part of the revenues distributed in the form of wages. Since for Smith as for Ricardo the unique source of value is labour²⁴, both profits and rents are forms of social deduction "from the produce of labour that is employed upon land"(Smith, 1776: 83). Although these authors do not argue explicitly in this sense, this theoretical link suggests their possible bland distinction between profit and ground rent. They are conceived as two faces of the same expropriation of value from labour. Nevertheless, the critique of rent income is more intense in Ricardo. Here the rentier is clearly a member of an unproductive and inactive class. His idleness is made possible by the owning of the essential means of production for the reproduction of that production system: the land. However, in Ricardo as in Smith, the antagonism between the three classes' interests is merely the social outcome of natural laws and by no means the result of historically determined institutional configurations.

These two major Classical authors share a common framework that describes a self-regulating growth process, only constrained by 'natural chains'. Nevertheless, the long-run tendencies implicit in the two versions differ critically:

"Smith foresaw a gradual rise in wages keeping pace with labor productivity, and hoped that the widening division of labor and technical ingenuity could overcome resource limitations on economic growth indefinitely. Malthus and Ricardo emphasized the limits to growth inherent in limited supplies of land and other natural resources that could eventually choke off economic growth through the operation of diminishing returns that cannot be offset by a widening division of labor and technical innovation" (Foley and Michl, 2010: 50)

In the next section, we will argue that the evolution of the concept of rent is a central point in the analyses of Marx and Keynes. The central breaking point of these two authors with the Classical tradition will be the contextualization of rent within the new institutional configuration of the capitalist system they were observing. As we will see, with these two authors' theories we have a decisive disassociation of the economic theory of rent from the land as a factor of production.

²⁴ In order to solve the problem of the determination of the exchange value for a consumption good, Smith and Ricardo saw in the quantity of labour the measure by which it is possible to assess the exchange value of any commodity. Despite both shared a labour theory of value, they emphasized two different views about how this amount is determined. For Smith, the value of a commodity is equal to the quantity of labour that it can "buy" or "command". It means that if the price of a good is 100 and the hourly wage 10, the value of this good in terms of hours of labour is 10. The seller of that good will earn enough money to pay a wage for those 10 hours of labour. Thus, given wage and price levels, this good "commands" 10 labour-hours. In contrast to this labour-commanded theory of value, Ricardo determined relative prices employing a concept of labour "embodied" into commodities, that is simply the quantity of labour required (directly or indirectly) in order to produce them. It is worth noting that Smith assumed a theory of labour embodied only for a stage of development previous to the capitalist accumulation phase.

2.4 The critiques of the Classical paradigm. Two notions of a ‘monetary-rent’

In the last years of the XIXth century the profound transformations of the economic systems led to new formulations of economic categories. While in the economies described by Ricardo and Smith (and the Physiocrats as well) agricultural productions played the leading role, the developments of the capitalist production relegated progressively the land to the rank of a ‘quantitatively negligible variable’.²⁵

On the one side, the economic theory saw the realization of the so-called ‘marginalist revolution’ and the developments of a ‘neo-classical school’. Authors like Jevons, Menger and Walras,²⁶ had a major role in the revolution towards a new definition of the Classical economic categories. In brief, this renovation can be seen as the "generalisation of the principle of intensive diminishing returns to the treatment of all sorts of economic phenomena" (Kurz, 1999: 130). The main passage was the extension of the Ricardian theory of the price on marginal land to all the productive services. In this school of thought we have the move from the concept of a surplus-economy to the paradigm of scarcity. The problem of income distribution is confined to the level of a ‘technical issue’. In fact, the idea of the intensive agricultural rent "gradually became the unique principle determining income distribution: rent, wages and profits were indiscriminately explained in terms of the relative scarcities of the respective factors of production, land, labour and ‘capital’" (Kurz, 1999: 130).

On the other side, Marx before and Keynes later focused on what they saw as the "great absent" within the Classical framework: the money. Unlike the marginalists, their "transposition" of the theory of rent was not technical but more linked to an institutional assessment of the capitalist system. For Classical authors, the rent was a category exclusively linked to the ground, and no forms of rent-from-money were seriously taken into account. Indeed, within the “real analysis”²⁷ of these authors, money is nothing but a veil that functions as a catalyst for their exchange system ultimately reducible to barter. However, if we assume to be in a “fictitious barter”, why are certain economic actors able to hold money stock? Where this condition comes from and how does it affect the socio-economic structure? Thus money has a primary impact on the functioning of the capitalist economic system. In addition to being only a medium of exchange, money can be also conceived as a store of wealth (or value).

²⁵ This can be interpreted also as the passage from a ‘high-food-drain’ socio-economic system to a ‘low-food-drain’ one.

²⁶ Their main contributions were respectively *Theory of Political Economy* (1871), *Principles of Economics* (1871) and *Elements of Pure Economics* (1874–1877). On the specific issue of the rent see also Marshall (1893).

²⁷ Here we apply the distinction between ‘real analysis’ and ‘monetary analysis’ in the sense of J. A. Schumpeter. In ‘real analysis’, it is possible to determine the values of output, the pattern of distribution and growth rates without considering monetary variables. In ‘monetary analysis’, instead, monetary variables are essential for the determination of the short and long-run value of these variables.

The steps forward of Marx and Keynes were towards a monetary interpretation of capitalistic production and exchange. In what follows we will see how the concept of rent as an 'unearned' and 'parasitic' type of income was untied from the ground, giving us two theories of the monetary sources of new types of rent.

2.4.1 Marx's and Hilferding's theories of rent in capitalism

Marx developed his critique of the Classical economics framework emphasizing different aspects. His critique can be summarized in the "failure to recognize that its object and thereby its analytical categories, are historically specific rather than natural; so, for example, 'the Physiocratic illusion, that rents grow out of the soil and not out of society'" (Aspromourgos, 1996: 3). He criticized Classical economics as an "ahistorical, eternal, fixed and abstract conception of the economic categories of capitalism. Marx says that these categories must be historicized to reveal and understand their nature, their relativity and transitivity" (Althusser and Balibar, 2009:102)".²⁸ Indeed, in contrast to the Classical authors' conclusion about the intrinsic tendencies of the economic systems, he "foresaw limits to capitalist economic growth arising from the social class divisions on which industrial capitalism rested" (Foley and Michl, 2010: 50). Because of this interpretation, for Marx Classical economists were unable to clarify the social, other than technical, nature of categories as capital, profit and rent. Furthermore, it is possible to argue that he distinguished himself from the Classical tradition in a more fundamental way. Indeed,

"Smith and Ricardo always analyse 'surplus value' *in the form of profit, rent and interest*, with the result that is never called *by its name*, but always disguised beneath other names, that is not conceived in its 'generality' as distinct from its 'forms of existence': profit, rent and interest" (Althusser and Balibar, 2009: 100. Emphasis in the original)

As we said, for Marx the transformation of the products of labour in value takes place during the production process, and money becomes the social manifestation of this produced value or "the material embodiment of the capital relation" (Milios, 2009: 272). Despite these detachments from the Classical tradition, he shared with it the general analytical approach. This was a theory "based on the theory of surplus, the labour theory of value, the methodology of aggregates, and the analysis of the behaviour of the social classes and their relationships" (Screpanti and Zamagni, 1995: 129).

Marx's object of analysis was the economic manifestation of a social relationship between labour and capital in a particular historical phase that he named "the capitalist mode of production" (henceforth CMP). This is a mode of production in which value does not arise naturally, and in

²⁸ For a discussion on the debatable relationship between Marx political economy and Marxian theory of history see Althusser and Balibar (2009), chapter 4.

which two groups of people with different endowments are identifiable: workers own labour-power and capitalists own funds. In Marx's work, we can find a clear departure from the Classical system towards a conception of capitalism as a "historical situation where 'objective' conditions of production (means of production, including original resources other than labour) are privately owned by one section of society, the capitalist class, to the exclusion of the other, the working class" (Bellofiore, 2004: 173). Those who own capital²⁹ are the only ones able to pay for the 'exchange value' of the labour power. From the latter, they can obtain a 'use value', which is necessary to undertake the production process (or the 'valorisation of capital' process). In Marx's view, labour can generate a 'surplus value' within the production: this is the difference between the superior values created by labour with respect to the initial value of the labour-power.³⁰ At the end of the production cycle, capitalist use this surplus to pay rent and interest, taking possession of the remaining part as profits (as in Ricardo, the latter are a residual). Marx framed his theory of surplus value considering labour being 'commodity capital' and 'variable capital' at the same time. When he referred to the act of selling labour power, he defined it as a type of commodity-capital. In the sphere of production, instead, labour-power joins the technical production process as 'variable capital' as opposed to the 'constant capital'. The variability or constancy of capital is explainable as a distinction in terms of the value creation. Variable capital is human labor that is able to give more than the value required for reproduction of the system, i.e. the surplus-value; constant capital (raw materials and machinery) resemble all forms of capital that, without applying human energy to them, they does not create other value than its intrinsic one.³¹ As an unearned income, the surplus-value "is merely the result of the fact that the means of production are privately owned under capitalism" (Blaug, 1997:240).

After this brief clarification, in what follows we will argue that Marx's thought is a watershed in the theorization of rent. Beside his theory of multiple land rent with which, in essence, he reformulated and enlarged the Classical definitions that we have seen above, we will stress the importance of his description of the CMP as intrinsically 'rentierised'. This description is detectable especially when considering the contribution and developments of his mature writings. Indeed, it is worth noting that Marx

“[...] attacked capitalism both on positive and normative grounds. He was not satisfied merely to argue that capitalism produces undesirable results; quite apart from these

²⁹ As in the Classical, capital here is intended as anticipation of total wages.

³⁰ In other words, workers are able to produce more than required for their subsistence level or for their 'reproduction'.

³¹ Another way of describing the distinction is considering that constant capital is bought from (industrial) capitalist and sold by (money) capitalist, whilst variable capital is sold by the workers to the capitalists. In terms of flows, Marx called 'rate of surplus value' (or rate of exploitation) the result of the ratio between surplus value and variable capital. In this framework, the rate of profit is given by the ratio between the surplus value and the sum of constant and variable capital.

results, he argued that profit or interest as a distributive share lacked on economic *raison d'être*" (Blaug, 1997: 241).

Marx's theory of land rent originated at first with respect to the agricultural land and other natural resources, before being comprehensive of rent income also derived from urban land property. Indeed, the value that takes the form of a surplus has not a natural origin, but arises from a historically specific social relation (Ball, 1977; Fine, 1979). In the first volume of his magnum opus, Marx gave consistency to various aspects of previous theories, describing four different forms of ground rent (Park, 2014). A monopoly rent as the payment from a pure monopoly on rare commodities or on a peculiar characteristic of a piece of land; an absolute rent given by the scarcity of land; a first type of differential rent given by differential advantage in agricultural production; a second type of differential rent originating through land improvements.

By simplifying, in the first and second volumes of *Das Kapital* the figure of the *rentier* appears opposed to the one of the capitalist, or the owner of capital and the ruler of the production. In the third Volume, instead, Marx's contextualization of the 'capitalistic rent', that is the peculiar form that rent takes within the CMP, is opposite in respect to the "feudal rent". While the latter was functional to a pre-capitalistic production process, the capitalistic rent is defined as a pure distributional relationship that has an 'a-normal' function in capitalistic production cycles.³² Here, the key source of rent is no longer the land: the dynamics of profit and rent are less intensely in contrast since that both originate in the private ownership of capital (relatively from profits and from interests payments).

In the thirteenth Chapter of the third Volume of *Capital*, Marx exposed the well-known 'law of the tendency of the rate of profit to fall' as a fundamental peculiarity of the capitalist system's functioning.³³ However, in the following Chapter, he stressed what he named 'counteracting influences', which make the difference between a mere 'fall' and a 'tendency to fall'. Among the others, the sixth force which counteracts the fall of the profit rate is the increase of the stocks, or the 'interest-bearing capital', suggesting that

"With the progress of capitalist production, which goes hand in hand with accelerated accumulation, a portion of capital is calculated and applied only as interest-bearing capital [...] these capitals although invested in large productive enterprises yield only large or small amount of interest, so-called dividends, after all costs have been deducted. [...] These do not therefore go into levelling the general rate of profit, because they yield a lower than average rate of profit. If they did enter into it, the general rate of profit would fall much lower". (Marx and Engels (ed.), 1972:240).

³² See Chapter 25 of Marx and Engels (ed.) (1972).

³³ There are different interpretations of this 'law'. However, this discussion is beyond the scope of this work.

As Engels wrote in the Supplement to the third Volume of Capital, these linkages between real accumulation and the stock exchange were secondary in the late XIXth century when Marx was writing. However, the situation was changing rapidly:

“Since the crisis of 1866 accumulation has proceeded with ever-increasing rapidity, so that in no industrial country, least of all England, could the expansion of production keep up with that of accumulation, or the accumulation of the individual capitalist be completely utilised in the enlargement of his own business. [...] But with this accumulation the number of *rentiers*, people who were fed up with the regular tension in business and therefore wanted merely to amuse themselves or to follow a mild pursuit as directors or governors of companies, also rose” (Ibidem.: 908, emphasis in the original)

Rudolf Hilferding developed his major theoretical contribution on this feature of the capitalistic progression. His analysis can be seen as an extension of this last point only sketched out by Marx or, as it was sometimes said at the time of the first edition, it can be considered as the "fourth Volume of Das Kapital" (Chaloupek, 2013). In "*Finance Capital*" (Hilferding, 1990 [1910]), the author studied the evolution of the CMP during the passage from the XIXth to the XXth century. In particular, he highlighted the new composition of the relationship between the banking and the industrial sectors:

“An ever-increasing part of the capital of industry does not belong to the industrialists who use it. They are able to dispose over capital only through the banks, which represent the owners. On the other side, the banks have to invest an ever-increasing part of their capital in industry and in this way they become to a greater and greater extent industrial capitalists” (Hilferding, 1990 [1910]:225)

Given this two-way interaction, he represented the ‘finance capital’ as the result of the metamorphosis of bank capital (in the form of money) into industrial capital. In this period, he argued, a progressive concentration and centralization of capital resources took place, leading to a generalized externality of capital ownership, which appeared more and more separated from a mostly internal entrepreneurial management.³⁴ The consequence was that an increasing part of capital used for industrial production was in fact finance capital provided by banks. Furthermore, the spheres of creation and circulation of what Marx defined ‘fictitious capital’ (that is capital in the form of bonds and stocks)³⁵ are now governed by finance-capital. In Hilferding's view, this power of control over the "fictitious copy" of real productive investments is the outcome of the

³⁴ The author saw in the emergence of *joint-stock companies* the emblematic phenomenon of this process, focusing on the distinction between individual and shareholder ownership.

³⁵ In Chapter 21 of Volume III, Marx focused on the "interest-bearing capital" as the peculiar type of fictitious capital. More precisely, the fictitious capital can be defined as the sum of discounted streams of future earnings related to different forms of financial assets.

hybridization of industrial and banking capital. In this dynamic, an increasing subordination of the (real) industrial sector to the financial sector went together with the consolidation of a "finance oligarchy". The latter became the issuer of capital and, to some extent, the indirect ruler of production. Finance capitalists receive a particular kind of benefit from negotiations³⁶ of fictitious capital, or what Hilferding called the "promoter's profit". Since this profit comes from a monopoly control over capital, this category of revenue can be easily seen as a "monopoly-profit" comparable with the monopoly-absolute type of ground rent described by Marx (and Smith as well). In the sixth Chapter of Finance Capital entitled "*The rate of Interest*" Hilferding explained his argument. In the developed capitalist systems as those of his time³⁷ "the rate of interest is fairly stable, while the rate of profit declines, and in consequence the share of interest in the total profit increases to some extent at the expense of entrepreneurial profit" (Hilferding, 1990 [1910]: 103-104). Thus, the share of this "monetary rent" (along with the power of the rentiers), was growing in the economy while damaging the real productive industries. Therefore, this type of rent can be described as a modern form of the same usury condemned by Scholastic philosophers eight centuries before Hilferding's work. By contextualizing the concept in the CMP, he described a rent that originates from the power of finance capital to exploit a 'future surplus value' that is more or less independent from the value of real capital.³⁸ In this theory, interest payments represent a claim on the future surplus-value generated in the potential productive processes. In this sense, this conclusion can be seen as an adaption of the Classical sources and effects of rent into the financial-capitalism framework.³⁹ In this respect, Lunghini and Bianchi (2004), discussing Graziani's theory of the monetary circuit, built a link between Ricardo's rent and the role of the banking sector analysed by Hilferding. Because of a Marxian interpretation of the circuit theory, the two authors argue that

“The profit rate, net of interest, [...] depends on the technical conditions of production, on the real wage rate and on the rate of interest. In the monetary circuit scheme, which is of the Money-Money type, the determinants of the profit rate are therefore the same outlined by Ricardo in his corn economy, with interest playing the same role rent does in the Ricardian model. Indeed this is obvious since in both cases capital takes the form of an advance (in one case as commodity-capital, and in the other as money-capital). The only difference is that in a Ricardian world the non-wage incomes are profits and

³⁶ That are the activities of production and circulation of stocks, bonds etc.

³⁷ He developed his study by considering primarily Germany and continental Europe in first years of the 20th century, thus relating to an almost pure "bank-based" system of financing.

³⁸ For a different interpretation see Sotiropoulos et al. (2013).

³⁹ More precisely, this is the outcome of one of the two reading of Marx's value theory that can be distinguished (Milios, 2009). A 'mainstream' tradition that refers to the value theory as an extension or a correction of Classical labour theory of value is opposed to a "monetary theory of value" line of interpretation. For the first reading, surplus value is merely the amount of labour appropriated by the ruling class after the compensation of labour power. Following the latter, instead, finance is not a "predatory" or "parasitic" activity but another stage of capitalist development. Thus finance, as well as traditional industrial activities, is able to produce surplus-value itself, thus not exploiting industrial investment capacity (Sotiropoulos et al., 2013).

rent, while in our world they are profits and interests” (Lunghini and Bianchi, 2004: 156)

Notwithstanding the different origins and historical spaces of rent and interest, it is clear from the above discussion that they can be interpreted as two very similar categories. It follows that the same holds true for the rentiers and bankers. Following this interpretation, within the class-conflict in income distribution and capital accumulation, bankers are playing the same role of Ricardian Landlords.

2.4.2 Keynes and the functionless investor

Keynes developed his theory during the first decades of XXth century and in particular in 1930's, years of profound economic depression. With his works, Keynes wanted to give an explanation and find a solution to economic problems not solvable by means of the established theoretical framework of his time. In his view, high unemployment levels in industrialised countries⁴⁰ was the result of a structural deficiency in the aggregate demand primarily due to lacks of investment demand. Although he believed in the microeconomic efficiency of a market economy for the allocation of resources⁴¹, he argued for interventions of the government in order to reach a macroeconomic ‘full-employment level’.

The categories of rent and rentier in Keynes's thought are unclear and treated in different ways in his various contributions. Following the main argument of McKibbin (2013), the first explanation for this general vagueness could be that "Keynes's 'rentier' is a political-sociological construct (and a confused one), not essentially an economic one, and that is how we should understand it" (McKibbin, 2013: 78). In this view, Keynes used a ‘pseudo-agent’ as a justification for the development of his theories of the interest rate and investment. In brief, the "interest is the ransom which society pays the owner of capital (the rentier) in order to induce him to invest"(McKibbin, 2013:78). The most interesting characterization of these concepts is in his major work (Keynes, 2008 [1936]), namely *The General Theory of Employment, Interest and Money* (henceforth GT).

In the GT, Keynes makes use of the term ‘capitalist’ few times, and usually associating it to the Landlord, to identify a person who can take advantage of a scarce resource getting a rent. The particular term “rentier”, instead, is more detectable along the work, almost exclusively utilized to illustrate the conflicting goals between the 'rentier' and the entrepreneur. Furthermore, Keynes paid direct attention to the contrast between the entrepreneur and the ‘capitalist-speculator’, explicitly extending the concept of rent to the property of the capital itself as opposed

⁴⁰ The focus was on the United Kingdom's economic situation.

⁴¹ It is well known that Keynes accepted the so-called neoclassical “first principle”, that is the neoclassical-marginalist equivalence between the real wage and the marginal productivity of labour.

to limiting it to land ownership. The crucial difference between rentiers and entrepreneurs is that the former, "like workers, receive an income fixed in terms of money for a given level of employment of their services, while entrepreneurial profit depends on future realised results" (Hayes, 2006: 31). Hence entrepreneurs are taking risk under uncertainty.

In contrast to Ricardo and Smith, but similar to Marx, in Keynes the scarcity of capital is historically and institutionally determined. This is another type of 'monetary rent' and it originates from the "oppressive power of the capitalist to exploit the scarcity value of capital" (Keynes, 2008 [1936]: 345). As for the Ricardian landowner, the Keynesian rentier obtains an income that does not directly originate from any real productive activity. The way of thinking is in the same line with that of Joan Robinson (1933), who defined rent as any surplus gained by an economic factor in excess of its normal minimum gain. Thus, also for Robinson the main source is the circumstance in which the supply of a particular factor is not perfectly elastic in respect to the changes of its price or, in brief, when there is a condition of scarcity. Given this, it is possible to identify two ways in which the term 'rentier' is employed in the GT.⁴²

Firstly, it comes into the analysis of the impact of propensities to consume on the aggregate income. In Chapter eight, the difference in the propensities to consume between rentiers and entrepreneurs is showed as an element within the analysis of the effects on consumption of fluctuations in wages. Furthermore, in chapter nine it is stated that a reduction in the level of money wage would be beneficial to the rentiers. Since this would lead to some reduction in prices, the purchasing power of the rentiers, whose income is considered to be fixed, will rise. In a similar manner, again thinking about a static rent-income, in chapter twenty Keynes writes that a general increase in prices would be positive for the entrepreneurs at the expense of the rentiers. It is also important to stress that the propensity to consume, for a given level of investment, is a variable that affects the stock of wealth held in the form of capital-assets, hence wealth distribution.

Secondly, there is the well-known theme of the 'euthanasia of the rentier', hinted at in chapter sixteen and better developed in chapter twenty-four. Here Keynes presents a more critical assessment of the adverse effects that the rentiers' conduct could have on investment, growth, and employment. As we said, in the GT the only clear definition of rentier is the one that identifies him/her as a capitalist who can exploit the shortage of capital, namely what Keynes also called the 'functionless investor'. This is probably because the focus is not on precise social classes⁴³ : the wish for euthanasia of the rentiers was not directed to specific individuals but towards negative

⁴² I am thankful to Eugenio Caverzasi for having suggested this way of proceeding.

⁴³ Keynes believed in the existence of social groups with conflicting interests and, even if in the GT this point is not stressed, he discussed it more extensively in other writings (see for example Keynes, 1930)

effects of certain income flows on investment. This is a central point in order to understand the figure of the rentier in the Keynesian “monetary theory of production”.

In Keynes’s thought, investment decisions do not depend exclusively on the rate of interest. In chapter seventeen, Keynes proposed a more sophisticated theory in which “the demand for capital-goods is a function both of the actual state of long-term expectation (expressed through the marginal efficiency of capital) and of the uncertain prospect of indefinite change in that state (expressed through liquidity-preference)” (Hayes, 2006: 139). The decisions about the partition of wealth between different types of assets depend on these two variables. The investment decisions or the demand for capital-goods by the entrepreneurs are the outcome of a comparison between the cost of borrowing (current and certain) and the expected profitability of the investment project itself (future and uncertain). Keynes called this resulting return the ‘marginal efficiency of capital’.⁴⁴ It is the discount rate that equates the cost of any investment (the interest rate) to the flow of expected net returns that it will generate. In other words, when entrepreneurs think that this marginal efficiency is higher (lower) than the interest rate, they will invest more (less).

Considering firms’ source of finance, Keynes made a simplification assuming that individuals, (also called savers), own financial wealth in two complementary forms: money and capital assets. In his theory of investment, Keynes described a very unstable system. The decision of the enterprise about the investment plans has to face the crucial choices of rentiers about the composition of their portfolios, which primarily determine the cost of capital (Crotty, 1990). As well as the entrepreneurs, the rentiers decide how to split their financial wealth according to their perceptions (expectations) about the future. Entrepreneurs act in order to get the maximum return on their stocks. If they are facing a situation of uncertainty about the future value of their income⁴⁵ they will prefer to hold more flexible assets characterized by a high level of liquidity⁴⁶ (i.e. money) instead of buying real fixed assets to finance riskier, long-term investment plans. In brief, money is seen as a safe refuge from uncertainty, as a link between a known present-time and an uncertain future (Davidson, 1978). In this theoretical framework the rate of interest measures how much the

⁴⁴ It is “marginal” efficiency because it is governed by decreasing returns: at a higher level of investment the returns will be lower. Business expectations are affected mainly by non-computable factors that determine the state of a particular market for a particular production.

⁴⁵ In other words, when there is a situation in which the general outlooks for investments are negative when compared to the cost of financing them.

⁴⁶ It is common to define liquidity as a property of assets that can be rapidly turned into currency without the necessity to reduce their price significantly. In a manner closer to Keynes’ concept of uncertainty about the future, liquidity “means more than convertibility and includes the degree to which the value of an asset, measured in any given standard, is independent of changes in the state of long-term expectation. Liquidity risk is then the possible (not probable or expected) loss of value as a result of a change in the state of long-term expectation. Keynes’s liquidity premium is the margin required by investors between the marginal efficiencies of the asset and the standard in order to overcome preference for the standard. The size of this margin will depend upon the difference in the degree of confidence with which investors view the marginal efficiencies of the asset and the standard respectively” (Hayes, 2006: 151).

owners of money (or the lenders) are averse to part with control over it and engage with investment financing given highly uncertain perceptions about the future.

The autonomous investment decision is the primary determinant of growth and employment levels in the Keynesian framework, and they are negatively affected by the 'rentiers' liquidity preference'.⁴⁷ Thus, we can argue that this sort of rentier is the consequence (or the embodiment) of Keynes' particular theory of the interest rate. While in Ricardo the rentier exists because of a natural law that enables him/her to receive a rent, in Keynes it can be understood as the personification of the liquidity preference theory.

For Keynes, earnings from interest payments are obtainable because of a lack in the level of capital in respect to the needs of the investment plans. His critique is that there is no real reason that capital should be scarce as it can be natural for the land or other natural resources. Through the advocated "socialization of investment", which implies lower levels of interest rate via government's economic policy, which in turn restores the abundance of capital, an indirect "peaceful death" will envelop the rentiers by gradually depressing their 'liquidity preference'. This process is expected to continue until capital is so widespread that its marginal efficiency is very small. This level of minimal efficiency would only cover the costs of production plus the business risk. When these conditions hold, we have the death of the rentier.⁴⁸ Reversing this argument, we could say that in Keynes the source of the rent is related to the level of a de-socialization or 'privatization' of the entire investment financing and decisions.⁴⁹ The interpretation of McKibbin (2013) is again that the "rentier serves as an intellectual strategy; his existence and bad habits provide good reasons both for his overthrow and for the 'socialisation' of investment" (McKibbin, 201: 101). Instead of being a clever ploy, we think that the changing features of this social group are due to Keynes's awareness of the relationships between this category and the historical evolution of capitalism. With this respect, in Chapter seventeen of the GT, Keynes pointed out that the source of liquidity derives from factors peculiar to different historical, and therefore institutional settings. Furthermore, he draws a sort of link with the Classical authors' object of analysis:

⁴⁷ We agree with the general interpretation for which "liquidity preference is a theory of the desire to hold short-versus long-term assets and that the state of liquidity preference is governed primarily by the profitability of business. [...] Sinking wealth into fixed capital makes it vulnerable to a loss of value in the event of a downturn in the market for the products to be made with that capital. If the profitability, or return of money, on investing in fixed capital declines, buying of the debt or equity claims on that capital should decline." (Mott, 1985,; 230-231).

⁴⁸ As Keynes, Marx as well advocated the death of the rentier. However, for Marx the result of this process would not be the prosperity of the capitalist system: in this situation the surplus-value would be entirely in capitalists' hands, the social contradiction would be reduced to the one between capital and labour. Thus, this simplification would have highlighted the fundamental struggle and thus pushed the dissolution of the CMP.

⁴⁹ For completeness, with 'socialization' Keynes did not mean the nationalization of some part of the productive system, but a set of State interventions in cooperation with the private sphere. This 'compromise' would have overcome the temporary underutilization of disposable capital and labour.

"It may be that in certain historic environments the possession of land has been characterised by a high liquidity-premium in the minds of owners of wealth; and since land resembles money in that its elasticities of production and substitution may be very low, it is conceivable that there have been occasions in history in which the desire to hold land has played the same role in keeping up the rate of interest at too high a level which money has played in recent times". (Keynes 2008 [1936]: 218)

In this section of the GT, Keynes used the interest on mortgages as a measure of a hypothetical forward price for land in order to make possible a comparison with the rate of interest on money:

"The high rates of interest from mortgages on land, often exceeding the probable net yield from cultivating the land, have been a familiar feature of many agricultural economies. For in earlier social organisations where long-term bonds in the modern sense were non-existent, the competition of a high interest-rate on mortgages may well have had the same effect in retarding the growth of wealth from current investment in newly produced capital-assets, as high interest rates on long-term debts have had in more recent times. That the world after several millennia of steady individual saving, is so poor as it is in accumulated capital-assets, is to be explained, in my opinion, neither by the improvident propensities of mankind, nor even by the destruction of war, but *by the high liquidity-premiums formerly attaching to the ownership of land and now attaching to money.*" (Keynes 2008 [1936]: 218, emphasis added).

Therefore, for Keynes the rate of interest resembled the source of a new type of unearned income, since he argued that the interest income "rewards no genuine sacrifice, anymore does the rent of land" (Keynes 2008 [1936], p.344). In contrast to the Cambridge marginalist theory of his time, he argued that the interest was no longer conceivable as a "physiological compensation" or as an essential income flow for the production process. For Keynes the interest rate "acquires the nature of a rent; the typical capitalistic income, namely, is reduced to the rank of a pre-capitalistic income" (Napoleoni, 1973: 13). Thus, the interest rate can be understood as a measure of differential scarcity for capital, as the ground rent was for the shortage of land in Ricardo.

In respect to the function of the marginal efficiency of capital, a deeper connection between Keynes's theory and the Ricardian framework can be outlined. Garegnani (1979) saw in the function of the marginal efficiency of capital the "price that Keynes has to pay for the traditional part of his theory" (Garegnani, 1979: 80)⁵⁰, meaning the neo-classical-marginalist tradition of Cambridge. Since different expected yields of investment plans depend on the evaluation of long-term expectations in respect to actual costs of financing, it is also possible to interpret the marginal efficiency of capital as a transfiguration of the fertility of land. As different investment plans have to consider the variations in the level of the interest rate in comparison to the profitability, "the

⁵⁰ Our translation from Italian.

sort of fertility of lands must indeed take into account, in general, the variations of the rate of profit and prices related to the extension of cultivation" (Garegnani, 1979: 80-81, note 9, our translation from Italian).

We can say that the figure of the Keynesian rentier takes shape especially within the analysis of the process of investment financing. In this respect, he did not present a clear separation between a pure-lender and a stockholder (either direct or indirect). The important point here is that "the final investment decision rests more with the agent who provides finance, be it a rentier or a stockholder, and much less with the producer" (Graziani, 2002: 141). It is worth noting that, taking into account the managerial feature of the capitalists, the Keynesian money lender is a mixed figure where "the opportunity cost of lending money is not only the loss of liquidity but also the loss of potential profits" (Graziani, 2002: 147). Since there is an abiding struggle between employment creating investment and the rentiers' preference for liquidity, this deleterious depiction of the rentier has to be primarily understood in relation to the role of the entrepreneur:

"Disappearance of the functionless *rentier* is incidental to the practical program which makes the entrepreneur the initiator of economic activity. Society has no particular stake in the inactive, non-functional *rentier*. [...] In an economy in which enterprise is carried on largely with borrowed capital, the payment of interest to the *rentier*-capitalist acts as a brake to progress. A reduction in the cost of transferring purchasing power out of the hands of inactive *rentiers* into the possession of active entrepreneurs is obviously a stimulus to enterprise" (Dillard, 1942: p.68, cited in Sotiropoulos et al. , 2013)

In the last chapter of the GT, Keynes draws attention to two main problems. Without an active involvement of the State, capitalism is unable to reach the full employment of economic resources (capital and labor) and to assure an acceptable (fair) distribution of income and wealth. Since Keynes elaborated his general theory with the aim of preserving capitalism from its physiological flaws⁵¹, the rent from interest payments is seen as a pre-capitalistic expression of an unearned income that must be eradicated for the sake of the system. In conclusion, although it is difficult to delineate a pure 'Keynesian theory of rent', we can say that this theoretical framework is built on a bi-univocal relationship between the theory of the interest and the 'liquid' source of rent. We can describe the Keynesian rent as a revenue that originates from the artificial perpetuation of the scarcity of capital, which negatively affects the investment and growth process.

⁵¹ That is merely to "adjust" without questioning the individual private initiative as the foundation of capitalism. In fact, Keynes did not question the capitalist system in itself, being associated with the British Liberal Party.

2.5 Old categories for new configurations? Rents and rentiers in the era of financialized capitalism

The aim of this fifth section is to present the major contemporary contributions about “rent”, trying to point out the theoretical linkages between these new formulations and theories in the history of economic thought. The emphasis on the adverse effects of the ‘rentiers’ conduct’ was central in the theoretical contributions of Ricardo, Marx, and Keynes. On the contrary, this component disappeared in the theorizations of the “new-classical school” of economics. In this literature, the analysis of the financial side of the economies has taken two main forms. One is the efficient market hypothesis (e.g. Fama, 1970; 1991), according to which financial markets are characterized by perfect information and thus there is no possibility for any economic agent to regularly gain excess market returns. The other is the ‘financial repression’ hypothesis (McKinnon, 1973; 1993) through which financial liberalization has been promoted as the catalyst for an increase in savings and hence investment and growth (Shaw, 1973).

Here we focus on two streams of literature in which the discussion about rent is at the centre of the analysis, the ‘Marxian’ and the ‘Post-Keynesian’ approaches, as the development of Marx’s and Keynes’ theories respectively. In this last section, we consider contributions that examine the rents specifically in the context of recent evolvement of capitalism. The last three decades have seen the expansion of a phenomenon in both advanced and developing capitalist economies: the financialization of the economy. What the contemporary Marxian and Post-Keynesian literature calls ‘financialization’ is referred to as the financial liberalization advocated by the new-classical literature, which see it as an enhancer of growth. In broader terms, with financialization this recent literature identifies an ongoing and self-reinforcing economic and social process that manifests itself in the growing prominence and influence of behaviours derived from the financial sector (Epstein, 2005; Erturk et al. 2008; Stockhammer, 2008; Krippner, 2011; Tomaskovic-Devey and Lin, 2011). As we will see, this broad definition leaves room for different analyses of the current manifestation of the rent and the rentiers as well as for the analyses of investment and broadly the regime of accumulation.

In this framework, the long-term development of economic systems gravitate more around the financial sector along with a fundamental role of the growing services sector (Foster, 2007; 2010). Instead of being a catalyst for production, the financial sector of the economies has grown in disproportion with respect to the expansion of physical investment. Among the many descriptions given to this process, the most cited is the one from Epstein (2005). According to Epstein's ‘working definition’, the term financialization implies an increasing role of behaviour encouraged by finance in the context of more and more powerful financial actors (both at the

national and international levels).⁵² With respect to the sphere of physical production, financialization can be also defined as the change from a conceptualization of the enterprise as a mean to realize returns on productive investment to a vision of it as any other kind of ‘asset’ whose shares are traded to obtain financial gains.

The poor performance in investment growth, combined with a rising financial fragility from the disconnection between the high private debt and the real production, appear as the main features of this new phase. Several authors have observed this phenomenon from different perspectives. The most obvious manifestation is the increased weight of the financial sector since the 1980s (driven by the so-called ‘Anglo-Saxon’ economies) and the growing importance of financial markets (Duménil and Lévy, 2004; Palley, 2008). Other scholars have pointed out the deepening of the interconnections between the operating activities of non-financial companies and their financial involvements (Epstein and Power, 2003; Stockhammer, 2004; Crotty, 2005; Orhangazi, 2008b; Andersson et al., 2008; Dallery, 2009), and its effects on production, employment, and wages (Rossman and Greenfield, 2006; Hein and Mundt, 2012; Dühaupt, 2016). In fact, unlike in the epoch of Rudolf Hilferding, we do not have just a condition of subordination in which powerful financial institutions control industrial activities: in today's new phase of financialized capitalism non-financial companies are autonomously deriving profitability from their financial activities rather than from their traditional productive processes. Furthermore, the rising role of institutional investors and other sources of finance capital forces companies to shape their strategies in order to obtain targets of financial performance that are not directly related to the sphere of production (Andersson et al., 2008).

By generalizing, there are two trajectories of the theoretical debate on financialization. On the one hand financialization is defined as an increasing boost to inflation of financial assets and a change in the balance between the sphere of production and the circulation of capital (in favour of the latter). On the other hand, the process is described primarily as a widespread change in the corporate governance of companies that progressively focus on short-term in order to generate frequent payments to the holders of the shares. Notwithstanding the overlaps between the two trajectories, the first interpretation is attributable to the recent development of Marx and Hilferding's studies, while the second one defines a common ground detectable in most of the post-Keynesian studies.

With this new ‘stage’ of the development of capitalism, a problem of classification arises. In the contemporary organization of the CMP, the division of society in well-defined socio-economic classes is complicated. Functional intertwinements characterize advanced capitalist

⁵² Epstein defines financialization as the "increasing importance of financial markets, financial motives, and financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international level" (Epstein, 2005: 1).

economies. Hence a clear distinction between a capitalist and a rentier in the sense of the Classical authors is difficult (Wolff and Zacharias, 2007).⁵³ Various scholars have proposed different schemes but, defining models that can be sensibly consistent with the current configuration of capitalism remains an open issue, primarily because of the growing diversification of the substance of rent. Furthermore, we are in a phase characterized by a more thinned boundary between rent and profit.

As we will see in the rest of this section, in a financialized capitalism we have different interpretations of the very peculiar form of the category of rent.

2.5.1 Contemporary ‘Marxian’ approaches

There is a novel ensemble of researchers building on different interpretations of Marx's and Hilferding's arguments starting from the 1970s. Having in mind the theories of these two authors, we will present three views that are, in our opinion, the most influential.

A group of scholars belongs to the ‘French Regulation School’. The Regulationists argue that capitalism is characterized by different modalities of capitalist development which are the results of various combinations of an ‘accumulation regime’ and a ‘mode of regulation’ (Aglietta, 2000 [1976]). The first term identifies the organization of production and distribution while the latter is the set of norms, institutions as well as conventions that allows the reproduction of the accumulation regime. As in Marx (and in the Classical authors), the dynamic of capitalism is a sequence of capitalist expansions shaped by conflicts between social classes and structural crisis (Jessop 1997a; 1997b). This strand of literature interprets the finance-led accumulation regime⁵⁴ as an outcome of the crises of the previous regime of Fordism. Through the intensification of international competition in the 1970s and the replacement of the capital-labour compromise with a new "agreement" between capital (managers) and rent (shareholders), the Fordist regime has been substituted with a new finance-led growth regime (Boyer, 2000). For these scholars, the result of the stagnation during the 1970s has been a significant change in the ‘scheme of regulation’. The adopted solution of liberalization and deregulation, especially in labour and financial markets, led to a lower bargaining power of workers and trade unions. Thus, a new configuration emerged, in which the relationship between the organizers of production and the shareholders become crucial and workers' claims are automatically excluded from the process.

The novelty of the new accumulation regime associated with this mode of regulation is that it is increasingly validated through financial metrics. In general, unlike the Fordist system in which the production was organized according to long-term investment plans based on long-term loans, decisions are governed by considerations linked to short periods. In brief, this is the ultimate

⁵³ We have seen that even in the days of Keynes this distinction was problematic.

⁵⁴ It is worth noting that for these authors, the finance-led regime is one of the multiple regimes now in place.

outcome of the predominance of a new type of corporate governance. When powerful actors gain their income from the value of the shares they own, there is a very dynamic market for corporate control. In this environment the management is pushed to boost the perceived value of the companies' shares by distributing profits in forms of frequent dividend pay-outs or even share buybacks (Aglietta, 2000 [1976]; Aglietta and Breton, 2001). The primary consequence of this new dynamic is the reduced availability of internal funding to finance physical investment projects.⁵⁵ Thus, the accumulation dynamic seems to be ultimately governed by the intensity of the exchanges in the equity markets.

Although it is hard to trace a precise terminology, it is possible to argue that these authors look at the shareholders as the new personification of the traditional rentier. In fact, drawing strength from the liberalization of financial and global markets, the owners of companies' stocks have gradually gained the power to determine the corporate governance. This is a type of rentier that is difficult to fit in the categories described earlier in our work. While remaining relatively in an outer position with respect to the production process, these "rentiers" contribute more heavily in shaping the investment plans and the accumulation process. As observed by Lapavitsas (2011), this view is undoubtedly linked with that part of literature on corporate governance that stresses the relationship between the 'shareholder value maximization' and a poor performance of investments (Lazonick and O'Sullivan, 2000).⁵⁶

Lapavitsas (2011) defines financialization as historical structural alteration of the mature capitalist economies, renewing the methodology of Hilferding and following the Regulationists. For him, in contemporary capitalism there is no evidence of a defined social group of rentiers, and it is erroneous to classify them simply as the owners of the loanable capital. Within his description of the process of financialization, he identifies three tendencies related to a tripartition of the economy into non-financial enterprises, workers and financial enterprises (Lapavitsas, 2013). Firstly, he argues that the stocks of through a process of monopolization (in the sense of Baran and Sweezy, 1966), have developed into a sort of 'financialized monopoly capital'. In general, companies and corporations are now able to finance their investments (and the wage bill as well) independently of the banking system and to manage external funding requirements by trading in the stock markets. Secondly, a financialization of the revenues of workers and households belonging to different income groups has taken place, given the rise in their indebtedness and holding of financial assets. Thirdly, Lapavitsas closes the circle by introducing the forced adjustment of the banks' conducts.⁵⁷ In fact, given the aforementioned financial independence of

⁵⁵ In their model, Aglietta and Breton (2001) show that "the more active the market for control, the lower the growth rate". In brief, the effect on the rate of capital accumulation is higher (lower) when the shareholders structure is highly disaggregated (aggregated).

⁵⁶ See Froud ET. al. (2000) for a critique.

⁵⁷ See also Dos Santos (2009) on this particular aspect.

the productive system, banking institutions have found new sources of profits in intermediation and investments in the secondary markets as well as in the personal lending and savings management. Thus, in his view financialization is the general prominence of the sphere of circulation of capital in respect to the sphere of production. The consequence is a new typology of expropriation of surplus value from workers.⁵⁸ In this particular analysis it seems that, with financialization, all three socio-economic groups (companies, households, and banks) have acquired the economic role of the 'old rentier'.

Although not a member of the Marxian school, on a similar line Toporowski (2000) argues the interconnections between real and financial activities are rather complex. The starting point of Toporowski is the observed tendency of inflation in the price of capital assets from the 1980s. This process was (and continues to be) sustained by the rise of the monetary resources in the financial markets thanks to growing flows from institutional and pension funds. The price of equities is a "special price" since it has a positive relationship with the related demand. Indeed, unlike the dynamics in the market for goods and services, in the financial market the expectations of higher future earnings drive the increase in demand for equities even with an increased price level. Thus, non-financial companies were able to issue shares with decreasing costs while starting to get a bigger portion of returns through portfolio choices as well as from speculative operations. Furthermore, Toporowski argues that this "capital assets inflation" has been interconnected with a surplus of capital stock in the companies' balance sheet. In fact, this easier and quicker way of getting returns led companies towards an overcapitalization (in terms of the magnitude of shares and securities issued) with respect to the actual requirements for industrial investments (Toporowski, 2009). In this framework, the non-financial companies became more and more independent from the banking sector since they have been able to 'internalize' their creditor-debtor relationships. This is the development of an 'equity culture', also promoted by governments (again, especially in the Anglo-Saxon world) with the hope that a 'shareholding democracy' could be a significant push for innovation and competitiveness of productive systems (see also Dore, 2008).

Our non-exhaustive review of contemporary Marxian analyses showed that, given the current configuration of the CMP, namely financialized capitalism, these authors argue that clear categories of 'rent' and 'rentier' are not applicable anymore. However, we argue that there is at least a difference between the Regulationists and Lapavistas or Toporowski. While for the Regulationists it is possible to interpret the shareholders' behaviours as a present manifestation of rentiers' conducts, the latter consider financialized capitalism more as "intrinsically rentier". In other words, we do not have solely an independent financial rentier. All the functional groups of the economy (workers, firms, banks) gain a portion of their income in the form of a financial rent,

⁵⁸ See also Fine (2010) on this.

which is only indirectly linked with the outcomes of the real accumulation processes. Furthermore, referring in particular to the work of Toporowski, it seems that we have now a 'financial surplus' in contrast to the agricultural surplus of the less developed "agro-capitalist" economies. The 'overcapitalization' or the existence of 'surplus capital' is the outcome of creation of equities that is independent from the standard requirements. In a financialized capitalism companies can create surpluses of capital on their own, gaining a particular kind of rent (e.g. capital gains) from this surplus. Unlike the type of rentier in Keynes these financial rentier do not receive their unearned income from the exploitation of the scarcity of capital but, on the contrary, they can generate a financial (future) surplus from which they can extract a rent.

2.5.2 Post Keynesian/post-Kaleckian perspectives

A distinctive feature of post-Keynesian paradigm is that the distribution of income is considered essential to the explanation of economic activity (Eichner and Kregel, 1975). Similar to the Classical and Marxian traditions, the observed distributive pattern is the outcome of the struggle between three classes: workers, capitalists and rentiers (Dutt, 1989; Taylor, 1991). As we have seen, Keynes stressed the importance of the role of the rentiers within the socio-economic system. However, the post-Keynesian discussion about social classes and distribution relies more on the work of Michał Kalecki (1938; 1971). In contrast to Keynes, Kalecki's economic theory is explicitly class-based, with a conflict that arises from variations of the industrial degree of monopoly whose increase (decline) ensures that a larger (smaller) share of total income goes to the capitalists (Sawyer, 1985).⁵⁹ Furthermore, similar to the Classical and Marx but again in contrast to Keynes, for Kalecki profits are a "surplus from monopoly-power" instead of a variable governed by marginal productivity measures (Sawyer, 1985; Halevi and Kriesler, 1991). Even though Kalecki sees as the main struggle the one between capitalists and workers, his explanation of the process of investment financing the role of the rentier seems to be 'imperfect':

"Since workers are assumed not to save, savings are made by two groups - rentiers and entrepreneurs. The savings by rentiers are, in a sense, passed to the entrepreneurs via the capital market. If savings by rentiers rise relative to savings by entrepreneurs, then a greater proportion of savings pass through the capital market. Thus the extent of external finance rises relative to internal finance. However, external finance may be more costly than internal finance (through, for example, transactions costs) and the supply of external finance to a particular firm may be limited [...]" (Sawyer, 1985: 102-103)

⁵⁹ This is the profit-share in contrast to the wage-share and to the rentier-share.

Following this reading, in brief Kalecki argued that when there is an increase in the rentiers' rate of savings (external) compared to firm's internal savings, investment planning can be negatively affected. Thus, similarly to Keynes, beside capitalist and workers he identified a rentier as the owner of the means of financing but described his/her behaviours in a more dynamic way than Keynes did. In fact, recalling Kalecki's theory of the 'political business cycle'

" [...] profit-earners would switch sides with the cycle, allying with the wage-earners in favor of stimulation in the down phase and joining with the rentiers in favor of austerity as full employment approached. This was because, though profit-earners benefit from high aggregate demand, full employment could lead to a breakdown in labor discipline, as workers had perhaps this, however, means little to fear from being fired. Fighting this, however, means that profit-earners have to hurt themselves". (Mott, 1989: 27)

By incorporating Kalecki's analysis, the post-Keynesians categorization of the different social classes is based on the analysis of the various forms of income. The latter is the most common modality in which this school of thought tries to overcome the problem of 'class identification' in a financialized capitalism to which we were referring in the introduction to this chapter. In other words, it is possible to simply classify workers as wage receivers, capitalists as profit receivers and rentiers as rent receivers. Several authors have developed both empirical and theoretical models based on this particular tripartition (Dutt, 1992; 2012; Stockhammer, 2004; Hein, 2010). Since the rentiers are not conceived as a separate class of individuals but as a mere 'income class', the discussion has been moved towards the definition of the composition of the rentier income. Being one of the pioneers of this debate, Mott (1989) defined the rentiers as the recipient of a precise share of firm's total profits, in the form of interest income and capital gains.⁶⁰ The corollary of this definition is that any agent, such as profit receivers and even wage receivers, may be part of the rentier's group. In particular, "the struggles between income recipients occur within each class and within some of the same individuals" (Mott, 1989: 24). In a similar way Epstein and Power (2003) as well as Jayadev and Epstein (2007) define the rentier income at the macro level as the sum of indirect returns gained by holders of financial assets, in addition to the direct gains of the owners of financial firms.

Researchers belonging to the post-Keynesian school have built upon this established categorization, proposing an explanation for the current version of capitalism. These scholars argue that, since the late 1970s, we observe a common feature in the dynamic of advanced

⁶⁰ As pointed out by Stockhammer, since the flow of income for the rentier is paid out of profits, as a result "capitalists and rentiers may be considered part of the same class. However, they occupy different positions within the production process and [...] they have different interests. Hence we regard the distinction between (industrial) capitalists and rentiers as important—even if it is an intra-class distinction" (Stockhammer, 2004: 4, note 2).

economies. In brief, there has been a generalized strengthening of the independence between the rates of accumulation of capital (decreasing or stagnant) and the profit rates (increasing). This trend is in contrast with the theoretical construction of Cambridge's Post-Keynesian growth models⁶¹, where this relation is always assumed to be mutually positive (van Treeck, 2008). In order to explain the observed data, various scholars have identified an 'investment-profit puzzle' (Stockhammer, 2006). The emergence of a new accumulation pattern in which profits are realized through financial activities rather than the traditional sphere of real production and trade raise this dilemma.

Among the Post-Keynesian school, the focus is primarily, though not exclusively, on the changes within the sphere of industrial production (see van Treeck, 2009). This line of research, in line with some intuitions of the Regulation School, calls attention to the increase of distributed profits and to the consequent reduction of retained earnings and re-invested profits. The new address of corporate governance within companies took the label of 'shareholder value orientation', a modality in which the objectives of production are gradually being biased in favor of the holders of companies' shares (Hein, 2008). This change in behaviours could explain the recent observed dynamics, i.e. a low growth of investment and output with a general stability of profits. Rather than the victim of the growing of rentiers' vested interests, the company is seen as a "battlefield" on which we have a power struggle for the definition of the management objectives (Stockhammer, 2006). In theory, part of the cash flow goes to shareholders when firms do not see future opportunities for investment that can give a return that is higher than the cost of capital. In the reality of a financialized system, even companies that could have prospects for investment are more willing to distribute dividends than investing in physical machinery and equipment.

This view is based on the post-Keynesian theory of the enterprise for which there is a 'growth-profit trade-off' within the process of decision making of business management. The criterion of profit maximization, the fulcrum of the neoclassical theory of the firm, is not seen as the ultimate goal, but simply as a means to promote the growth of the company (Eichner, 1976; Lavoie, 1992). A possible objection to this alternative view might be the potential affinity between the long-term profit maximization and the long-term growth maximization purposes. However, the emphasis here is on the differences between a 'growth maximizer' type of management and a 'short-run profit maximizer' one. In fact, the intensification of the orientation towards short-term objectives influences the investment strategy and, therefore, from a macroeconomic perspective, aggregate demand and growth. Financialization is fictitiously loosening this trade-off between growth and profit. In brief, the standard argument at the base of the Post-Keynesian literature on

⁶¹ We are referring to the group of models developed, among others, by Joan Robinson, Nicholas Kaldor and Luigi Ludovico Pasinetti.

financialization is that the developments in the financial sector have strongly influenced the macroeconomic variables, also via microeconomic dynamics of firms' investment decisions. Following Wood (1975) and Lavoie (1992), the traditional Post-Keynesian theory of the firm is built upon the recognition of two different constraints faced by the management. Firstly, implying imperfect financial markets, there is a 'finance-frontier', that is the maximum rate of accumulation that the firms can afford to finance, taking a particular profit rate as given. Secondly, managers have to consider an "expansion frontier" as well. In other words, this is simply the limit profit rate achievable by the firm for given rates of growth. In fact, when their level of investment is high, firms are

“better able to integrate the latest technologies and therefore reduce their costs of production and increase their profit rate. However, with ever faster growth, it becomes more difficult to familiarize employees with the philosophy and the management techniques of the firm” (Lavoie, 1992: 39)

In addition, when there is sharp and sustained increase in the rate of growth, firms are willing to diversify

“towards less familiar lines of products, engaging in important marketing expenses, or reducing profit margins. All of these are bound to reduce the maximum attainable profit rate, thus explaining the downward-sloping part of the expansion frontier” (Ibidem.)

In brief, the investment decision comes from the intersection of these two boundaries. Thus, companies look at the profit rate dynamic until it makes the finance-frontier less compelling, leading to a more rapid expansion. However, this is not totally the case in financialized capitalism: it has been argued that the required accumulation rate can be below its theoretical maximum (Hein and van Treeck, 2008). Indeed, in this new configuration characterized by 'relaxed finance constraints', managers can now choose between more growth (long-term orientation) and more profit (short-term orientation) (Hein, 2012).

Alongside these microeconomic insights, we have macroeconomic points of views. In the last part of this section, we want to discuss some of the post-Keynesian models used to analyze financialization with the incorporation of the rentiers' behaviour in macroeconomic models. In brief, it is possible to say that the aim of this theoretical and empirical literature is to extend the model of Kalecki by introducing financial variables.

In general, this group of scholars shares the stylized fact of an upward trend in rentier incomes from the 1980s. In the first phase thanks to an increase of the interest rates and later thanks to a general rise in the dividend pay-out rates (see Dünhaupt, 2016). Onaran, Stockhammer, and

Grafl (2010) analyzed this alteration in the functional income distribution for the USA. By integrating the rentier income, i.e. net interest and dividend payments as a ratio to GDP, to a Kaleckian growth model, their econometric analysis shows a dual effect of the rentier share: a positive effect on consumption but a negative effect on investment. In fact,

“higher rentier income suppresses investment through both lower investable funds available to the firm and shareholder value orientation, and an increase in non-rentier profits has a positive effect on investment” (Onaran, Stockhammer, and Grafl, 2010: 657).

These findings indicate that shareholder value orientation leads to short-termism and hence lower investment for a given level of retained earnings.

According to Hein (2012), one of the most important channels through which the macroeconomic dynamic is affected by financialization is the distributional one. He analyzed 15 developed countries starting from the 1980s. In this view, the distribution is determined by the setting of a mark-up over costs by enterprises in a monopolistic (or oligopolistic) environment. In this model, the firms' financing of the capital stock in the long-term is sustained by accumulated retained earnings (internal means of finance)⁶² and equities and bonds issued by companies and held by rentiers (external means of finance). On this basis, future total profits realized by companies are split into retained and distributed profits, the latter being defined as dividends and interests paid out according to ownership rights on equities and debts. Undoubtedly referring to the Regulationists, in his model Hein summarizes the effect of financialization as a "rising shareholder power [...] associated with increasing rentiers' demand for distributed dividends" (Hein, 2012: 480). His representation allows for a contractive as well as for an expansionary investment and growth regime under financialization, depending on the magnitude of the main parameters, namely the propensity to save out of rentiers' income, the intensity of the preference for internal means of financing, the response of investment to variations of the profit share. Although the author characterizes his model with this flexibility, he concludes that financialization can "generate high levels of demand and profits at the macroeconomic level, building on wealth-based and credit-financed consumption demand for considerable periods of time, increasing 'financialization' and shareholder power seems to cause a general weakness of capital accumulation" (Hein, 2012: 493).

In order to account for the effect of financialization starting from a more microeconomic perspective, the models proposed by Hein (2007; 2012), van Treek (2007) and Lavoie (2008) include a mark-up which is elastic to the specific dividend policies adopted by firms. Here comes

⁶² In accounting, the definition of retained earnings (RE) is: $RE_t = RE_{(t-1)} + \text{Net Income} - \text{Dividends}$.

in the role of the shareholders as the ‘new rentiers’. In particular, in the model by Lavoie (2008), the expected profits which govern the decisions about the level of mark-up are influenced by the share of dividends that will be distributed to the shareholders. He argues that

“[...] one of the features of financialization, a higher fraction of profits distributed as dividends, has positive short-run effects on the overall economy and the rentiers, but these effects vanish over the long run, even becoming negative when looking at the overall economy” (Lavoie, 2008: 344)

Orhangazi (2008b) presents an empirical analysis about the effects of financialization on US non-financial enterprises. By focusing exclusively on investment behaviours, he takes into account financial activities both as liabilities and as assets for the firms. On the liability side, the author defines the firm’s income that is “paid out” as interest expenses on debt, cash dividends and share buybacks. On the assets side, interest income and equity in net earnings are firm’s financial earnings. The financial incomes derive from increased financial investments. On the liability side the financial markets ask for a higher return over the shares issued by companies. The author found that this process cycle is depressing physical investment, especially for large companies.⁶³

Dallery and van Treeck (2011) emphasize the power dimension of the socio-economic relationship underlying financialization by modelling the struggle between shareholders, managers, workers and the banking sector. They analyze the economy assuming that the object of contention between these groups is the target profit rate, the movements of which occur through variations of the rate of capacity utilization. The shareholders, being able to impose their desired target of return, receive distributed profits in the form of dividends and interest. Thus, assuming a low propensity to consume for this group, they can accumulate wealth. The long-run position of this model depends on the historically determined domination of one group over the others. Therefore, in connection to Regulationists' argument, the authors describe a Fordist regime in which interests of workers and managers were the prevailing ones while in financialized capitalism "shareholders formulate inflexible profitability objectives, which are imposed on both managers and workers" (Dallery and van Treeck, 2011: 208).

Even though these authors seem to utilize dividends and interest as similar variables, we want to stress that, from an accounting perspective they differ substantially (Brealey et. al., 1995).

⁶³ He argues that "increased financial investments can crowd out real investment by directing funds away from real investment into financial investment and increased financial profits can change the incentives of the firm management regarding investment decisions" (Orhangazi, 2008b: 882-883). Secondly, "increased financial payments can decrease the funds available for real capital accumulation while the need to increase financial payments can decrease the amount of available funds, shorten the managerial planning horizon and increase uncertainty" (Ibidem.)

The payment of dividends implies an actual distribution of corporation's earnings to its stockholders. When a dividend of one hundred dollars is declared and paid, the companies' cash stock is reduced by the same amount and its retained earnings, that are part of stockholders' equity, are reduced by one hundred dollars as well. Therefore, with dividends we have an 'externalization of earnings' that reduces the available funds of the business. However, they are not interpretable, as an expenditure for the companies and, therefore, dividends do not decrease their net income or their taxable income. Furthermore, it is worth noting that dividends create value for the investor and the company only if they are distributed in the form of cash. In fact, when they are paid as new shares (stock dividends) the effect is just an indirect increase of the total capitalization. Thus, knowing the form of the dividends through which companies distribute their earnings to shareholder is important.⁶⁴ In contrast, interest payments on bonds and other kinds of debt are undoubtedly an expense for corporations. The interest expense will reduce the companies' net income and taxable income. In fact, when interest expenses are paid on a certain amount of debt, total cash is reduced but the firm is also benefiting from a lower tax on income (taxable income is reduced). Hence, the amount of interest expense will not entirely reflect itself in an equivalent reduction of retained earnings.

The Post-Keynesian views about the effects of rentiers' behaviours on the accumulation of capital are a development of the theories of Keynes and, more fundamentally, of Kalecki. In fact, these authors enriched the basic idea of the 'Keynesian rentier' with an evident inclusion of the struggle between the recipients of 'income flows' (profit, wage, and rent). In particular, the focus is on that part of profits that are distributed to 'external' providers of financial resources. This kind of 'financial rent' is defined as the sum of interest payments and dividend distributed. In this framework, internal funding is a less expensive and risky source of financing and thus it is crucial for investments. For the Post-Keynesians, the general decrease in retained earnings due to heightened shareholders' claims has actively contributed to the observed negative trend of real investment and growth rates in financialized capitalism.

2.6 Summary

In this chapter, we analysed the evolution of the concept of rent within different theoretical frameworks and historical periods. In doing this, we also discussed the ways in which various scholars have defined the recipient of this 'unearned income'. Then, the primary focus of this chapter has been the effects of various types of rent on the accumulation of capital.

⁶⁴ In addition, if the dividend takes the form of a new share distributed to the already 'rentier-shareholder', it is possible to say that it is very similar to the payment of rent '*in kind*'. As we have seen in the first part of this work, this was a characteristic also of the ground-rent in the pre-capitalistic systems.

We started by shortly introducing the idea of ‘surplus’ proposed by the Physiocratic school. Within their tripartite division of classes and income flows, it is equal to the excess of produced wealth over the part of it that is consumed in the production cycle. The surplus appears in physical terms (the harvests), and the fertility of the soil is the first source of this share. Given that manufacturing is an unproductive sector only devoted to the transformation of agricultural production, the net product becomes entirely rent. In short, in the writings of the Physiocrats we can identify the first description of the transition from a system of ‘subsistence’ to a ‘surplus’ one.

For the Classical authors the distribution of income is one of the most important factors that determine the reproduction of the system. For them, by conceiving the economic process as a set of successive phases, wages are anticipated to the worker before the start of the production process. Since there is no direct relationship between the anticipated wage and the final result of the process (final goods), the capitalists are the owners of the total production and thus the distribution of the earnings after sales is all about profit and rent. Since for Smith as for Ricardo, the unique source of value is labour, both profits and rents can be seen as forms of ‘social deduction’. For these two authors, the rentier is clearly a member of the inactive and unproductive class. His idleness is made possible by the ownership of the essential means of production for the reproduction of that particular “agro-capitalist” system: the land.

Summarizing contemporary ‘Marxian analyses’, we can say that, given the current configuration of the CMP, namely financialized capitalism, for these authors clear categories of ‘rent’ and ‘rentier’ are not applicable anymore. In general, for these authors financialized capitalism is intrinsically rentier. All the functional groups of the economy (workers, firms, and banks) gain a portion of their income in the form of a financial rent, which is only indirectly linked with the outcomes of the real accumulation processes. We have now a ‘financial surplus’ in contrast to the agricultural surplus of the pre-capitalist economies. The ‘overcapitalization’ or the surplus capital is the outcome of a generation of equities characterized by an autonomous pattern in respect to the standard requirements. Companies are now able to create an excess of capital on their own, gaining a kind of financial rent from this surplus. Unlike the Keynesian type of rentier, the system does not generate an unearned income from the exploitation of the scarcity of capital but, on the contrary, it produces a financial (future) surplus from which a rent can be extracted.

Post-Keynesian views about the effects of rentiers’ behaviours on the accumulation of capital are a development of the theories of Keynes and, more fundamentally, of Kalecki. In particular, the focus is on that part of profits that are distributed to ‘external’ providers of financial resources. This is another type of ‘financial rent’, defined as the sum of interest paid and dividend distributed. In this framework, internal funding is a less expensive and riskless source of financing. Because of this, the level of internal means is the key variable in the determination of the

accumulation rate. The central argument of the Post-Keynesians is that the general decrease in retained earnings due to heightened shareholders' claims has actively contributed to the observed negative trend of real investment and growth rates. Like the Classical ground-rent and the 'monetary-rent', this new 'financial rents' are harmful for the capitalist process of capital accumulation.

We can highlight two important tools from which our analysis will benefit:

a) Marx, and the contemporary Marxian tradition reviewed, stress the importance of a dialectical approach to finance, which can be conceived at once both 'productive' and 'predatory' in relation to the economic system as a whole;

b) Keynes and especially the Post-Keynesian tradition, by focusing on the sphere of accumulation and production both at macro and micro level provide empirically testable assumptions about the role of finance and financial rent.

The next chapter discusses the most relevant theoretical and empirical contributions about the relationship between the financial system and firms' investments.

CHAPTER 3. Non-operating activities, financial commitments, and physical investments: a review of the literature.

3.1 Introduction

The conventional literature on firm-level investment behaviours provides support for the importance of financing constraints (among others Fazzari et al., 1988). The evolution and development of the financial sector are seen as a facilitators of investment, since they can ease several constraints to investment, in particular financing and allocative ones (see Love and Zicchino, 2006).

The literature on ‘financialization’ puts emphasis on the impacts that the growing importance of the financial system may have on the economic system (Epstein, 2005) and in particular on investment planning (Stockhammer, 2004; Orhangazi, 2008a). Hence, in addition to the traditional determinants of investment in the literature, financial investments, as well as financial commitments can have an adverse effect on the accumulation of fixed assets (Orhangazi, 2008b; Demir, 2009). In this chapter, we review the key contributions about firm’s investments from both the ‘conventional’ and the ‘financialization’ literature.

The rest of the chapter is structured as follows. In the second section we review the key contributions to the study of firms’ investment dynamic, highlighting both the theoretical and the empirical insights. Section three reviews the main contributions in the literature of financialization, which mainly focuses on the behavioural change in corporate governance experienced by companies in advanced capitalist systems from the 1908s, namely the ‘shareholder value maximization’. In particular, within this section, we will pay particular attention to the empirical contributions about financialization and investment both from a macroeconomic and from a microeconomic perspective. Section four summarizes the chapter.

3.2 Firm-level investment: theory and empirical literature

The firm-level empirical literature on investment is vast, and a comprehensive review is beyond the scope of this work.⁶⁵ In this section, we will discuss the most influential papers in the literature, focusing on the most significant contributions.

Earlier studies such as the ones of Kuh (1954), Kuh and Meyer (1955), and Evans (1967) estimated different versions of the so-called ‘accelerator investment model’. In these models, the capital expenditure was almost entirely explained by the expected profitability measured by the level of sales, with a minor role played by variables reflecting liquidity. Later, the so-called

⁶⁵ For comprehensive reviews and comparative studies see for example Jorgenson (1971), Chirinko (1993) and Caballero (1999).

'neoclassical' interpretation of the investment dynamic became the most widely used model. The essential feature of this approach was the firm's maximization of a discounted flow of profits over an infinite time horizon (Jorgenson, 1963; 1971). The company's investment decision was thus conceived as a static optimization problem since the desired amount of capital is reachable instantaneously in this framework. This approach has been the basis of the 'mainstream' model of firms' accumulation, in which investment is driven by profit maximization behaviour, hence the importance given to costs variables. As an alternative, models where the dynamic process is explicitly taken into accounts have been proposed: here the maximization problem relates to the expected cash flows (or market value) in the presence of adjustment costs and expectations (Chirinko, 1993). Within this group the so-called 'Q model' has been the most popular and widely used.⁶⁶ Based on the works of Brainard and Tobin (1968) and Tobin (1969), this approach models investment based on the Tobin's Q variable, which is defined as the ratio of the firm's stock market valuation to its 'capital replacement cost' (the capital stock adjusted for inflation and depreciation). In brief, the intuition is that the firm's stock market evaluation is the exclusive explanatory variable, and Tobin's Q is expected to reflect the present discounted value of expected future profits under a 'perfect market hypothesis' (Hayashi, 1982). Unambiguously, this framework assumes that the source of financing is irrelevant (Modigliani and Miller, 1958). Firm-level empirical investigation based on this approach has not produced encouraging results, with a low explanatory power of the Q variable employed (Hayashi and Inoue, 1991; Bond et al., 1992). Indeed, as argued by Hubbard (1998), a more realistic picture is the one where there is a difference between the internal and external source of financing. Furthermore, he argued, there is a positive relationship between the borrower's investment spending and his/her net worth. In addition, the traditional Q representation is undermined by the presence of firm-level and systemic market imperfections. In fact, some authors have pointed out that the cash-flow internal funds for financing are important determinants of investment (Fazzari et al., 1988; Blundell et al., 1992; Hubbard, 1998; Brown et al., 2009). In addition, the stock market evaluations can be severely biased by periodic 'financial bubbles' (Erickson and Whited, 2000; Bond and Cummins, 2001; Bond et al., 2004). Others authors focused on the adverse effects of asymmetric information (Stiglitz and Weiss, 1981) as well as of uncertainty (Devereux and Schiantarelli, 1990) on the robustness of the explanatory powers of Tobin's Q measures. In conclusion, even though the

⁶⁶ The key assumption of any Q model is that the unobservable value of capital is linked to the observable ratio between the company's market and the book value. The other group of models consists of "structural model estimations" based on Euler equation, which is an inter-temporal first-order condition for a dynamic optimization problem for capital, always assuming an optimal path for the economic variables. This approach has been introduced by Abel (1980) and developed in Abel and Blanchard (1986).

evidence tells us that is a significant component, Q cannot statistically summarize all the relevant information on the expected future profitability of fixed investment.

The seminal contribution by Fazzari et al. (1988) paved the way for a debate on the effects of liquidity constraints on the investment dynamic. This model explains firms' accumulation of fixed assets through two sets of variables. The general specification employed by the authors estimates the ratio of investment to capital stock, i.e. the rate of accumulation of fixed assets, as a function of a vector of explanatory variables and cash-flow. All variables are normalized by the capital stock. In this specification, the accumulation of fixed assets is a function of the various measures of investment opportunities for the single firm, and the sensitivity of investment to the level of internal means of finance. Fazzari et al. (1988) examine three broad specifications for the function using the US firms' data. They estimate a model based on the 'Q market evaluation theory', one based on the accelerator effect of sales, and one based on what they labelled as the "neoclassical model" incorporating output and cost of capital measures. Their key finding is that internal finance as reflected by cash-flow and its fluctuations are statistically more important than the stock market evaluation in determining the level of accumulation. The high cash-flow sensitivity of investments is valid also for the other two specifications. Therefore, by rejecting the irrelevance of the source of financing and the perfect market hypothesis, Fazzari et al. (1988) show that the dichotomy between the 'real' and 'financial' components of the investment decisions is no longer valid. Later research by Fazzari and Petersen (1993), Chirinko and Schaller (1995), and Kadapakkam et al. (1998) provided additional support for the crucial role of financial constraints. In conclusion, this body of research suggests that the decision to start a new investment plan is undoubtedly connected to the choice of the most appropriate way of financing it. Thus, the activity of financing real investment intrinsically implies a set of financial relations.

Devereux and Schiantarelli (1990) analyse the importance of capital market imperfections for a panel of publicly listed UK manufacturing companies from 1969 to 1986, using balance sheet data from Datastream. They model investment as a function of Tobin's Q , cash-flow and the level of debt. They find that cash flow is always significantly and positively associated with the accumulation of fixed assets. On the contrary, evidence on the effect of the stock market evaluation is mixed. It has a significant effect in the full sample, but it appears to be insignificant in explaining investment of smaller firms. With regards to the amount of debt the authors find that it is negatively associated with investment, but again its significance level depends on the size of the sample employed for the estimation. Devereux and Schiantarelli (1990) conclude that measures of capital market imperfections, hence cash-flow, should be a fundamental ingredient of any model of firm-level investment.

Bond and Meghir (1994) estimate a model based on an Euler specification for publicly traded UK manufacturing companies, by using a difference Generalized Methods of Moments (GMM) estimator. They find that investments are more sensitive to cash-flow in periods when companies distribute very few dividends in relation to their normal levels. Bond et al. (2003) analyse the importance of financial factors for investment in the UK, France, Belgium and Germany for the period of 1978-1989. They estimate an Error Correction Model (ECM) and an Euler equation model using GMM. The authors estimate the flow of investment as a function of sales (as a proxy for output) and gross operating profits. For the case of the UK, the authors find a large and significant cash-flow effect in the ECM model and no significant results based on the Euler equation. Furthermore, they found that the sensitivity of investment to internal funding/cash flow is greater and statistically more significant for the UK sample than the other countries under analysis. Thus, the availability of internal funds has been a constraint on investment especially in the UK economy. Pawlina and Rennenoog (2005) confirm the findings of the previous study about the cash-flow sensitivity of investment in the UK. The aim of their contribution is the investigation of the source of these financial constraints during the period of 1992-1998. The authors use data from companies listed in the London Stock Exchange from Worldscope database. Using a random effects model, they find that this sensitivity is primarily the outcome of an agency problem and not the result of asymmetric information between the management and the markets. The authors find a significant and positive relationship between the investment cash-flow sensitivity and insider ownership.⁶⁷ At a modest level of insider ownership, the cash flow sensitivity is stronger but for higher levels of insider ownership investments are less cash-flow sensible. In addition, Pawlina and Rennenoog argue that the cash flow sensitivity of investment is reduced by the involvement of financial institutions through active monitoring. Furthermore, financial institutions that hold an equity block can reduce informational asymmetries between companies and capital markets.

Love and Zicchino (2006) focus on the relationship between the development of the financial system and the investment dynamic.⁶⁸ The period considered is the decade of 1988-1998 with a sample of 8180 companies in 36 countries (including the UK), using data from the Worldscope database. The authors use a VAR model in which the variables are sales/capital ratio, investment/capital ratio, cash flow, and Tobin's Q.⁶⁹ In addition, they introduce a set of country-level variables such as the stock market development index, the development of financial intermediaries and the overall financial development. Using the results from system-GMM

⁶⁷ Insider ownership is a process of internalization of the gains from changes in the market value of the firm.

⁶⁸ See also Love (2003).

⁶⁹ The authors employ a proxy for the Tobin's Q measured as the sum of market value of equities and book values of total liabilities divided by the book value of total assets.

estimation, they analyse the impulse response function of the firm specific variables to a shock in the country specific variables on the already explained firm-level ones. The results show that the availability of internal means of financing is a weaker determinant of the investment dynamic in countries with a highly developed financial system. In addition, they argue that countries with a less developed financial market experience lower rates of growth because of an inefficient allocation of capital.

Bloom et al. (2007) analyse the effect of uncertainty on the UK publicly listed companies from 1972 to 1991. They estimate the accumulation of fixed assets as a function of total sales (deflated by the aggregate GDP deflator), the cash flow (computed as net profits plus depreciation) and a proxy variable for uncertainty. For the latter variable they employ the standard deviation of companies' stock market returns on a year by year basis. Their main result is that increasing uncertainty reduces the effectiveness of investment targeted monetary or fiscal policies.

Guariglia and Carpenter (2008) use the contracted capital expenditure to acquire information about investment opportunities that are available only to 'insiders' and thus not captured by Tobin's Q. They estimate a model based on data from DataStream for the period 1983-2000 using difference GMM. Adding the already contracted future capital expenditure, the authors find that cash flow is less important in explaining investment for larger companies. Thus, they argue that whilst cash flow contains complementary information with respect to Tobin's Q, its explanatory power derive from the ability to capture the effect of asymmetrical credit frictions.

The conventional investment literature argues that companies' financing issues mainly derive from agency problems, and the development of financial markets can relax these constraints (Devereux and Schiantarelli, 1990; Love, 2003; Pawlina and Renneboog, 2005; Love and Zicchino, 2006; Guariglia and Carpenter, 2008; Bond et al., 2003). In particular, Beck et al. (2005) find that firms with higher financing obstacles shows slower growth, but this relationship is weaker in countries with relatively more developed financial systems. In addition, these authors finds that FD is more effective in alleviating financing constraints especially for smaller firms. Nonetheless, according to their findings the effect of financial development on firms' growth is always-positive. However, while some studies find a significant and positive effect of FD on economic growth and investment (Levine, 2005; Arestis et al., 2015), both the statistical significance and size of the estimates vary widely due to methodological heterogeneity (Valickova et al., 2015).

The conventional literature asserts that financial markets facilitate the financing and the efficient allocation of investment (King and Levine, 1993; Gilchrist and Himmelberg, 1995; Beck et al., 2000; Love, 2003; Beck and Levine, 2004; Levine, 2005). However, Arestis and Demetriades (1997) warn against the robustness of these results based on cross-country evidence, which do not take into account the institutional peculiarities. Moreover, the effect of stock market

development on growth is found to be weaker than that of the banking sector (Arestis et al., 2001). Recently after the 2007-2008 crash, the disproportionate growth of the financial system has been questioned in some conventional contributions as well (Cecchetti and Kharroubi, 2012; Beck et al., 2014; Arcand et al., 2015). In particular, Law and Singh (2014) and Arcand et al. (2015) argue that there is a 'threshold effect' in the relationship between the extension of financial resources and growth; thus the expansion of the financial system is beneficial to growth only up to a point (e.g. the dimension of the financial system should not exceed 100% of the GDP). Recently, a similar argument has been put forward by an IMF discussion note with respect to developing and emerging markets (Sahay et al., 2015), which argues that the impact of financial development on growth 'bell-shaped': 'too much finance' is likely to increase both economic and financial instability. Further, Cournède et al. (2015) analyzed five decades of data for highly developed countries as a part of an OECD study. They find that, for most of the countries, the expansion of credit by financial intermediaries to the economy has grown three times as fast as economic activity. They conclude that further development of the financial system is likely to be negative for growth.

In both the analysis of investment and financial development discussed above, companies' financial flows are not directly taken into account. Given the transformation of the economies towards a financialized stage in the last decades, the conventional models of investment may be misspecified due to their neglect of some important factors in the firms' financing and investment decision.

3.3 Accumulation of fixed assets and financialization of corporate strategies

The literature presents evidence of the importance of liquidity for companies' investment. In the conventional literature, the availability of external finance (and financial markets in general) is seen as a positive element in the process of investment financing. Furthermore, the development of financial markets is expected to have a positive impact on growth, e.g. by fostering total productivity growth (Beck et. al., 2000), as well as facilitating the efficient allocation of investment resources (King and Levine, 1993; Love, 2003). In particular, it is argued that companies can alleviate their financing constraints by relying on financial markets. The latter condition allows them to reach higher levels of efficiency and growth (Merton, 1995; Levine, 2005; Love and Zicchino, 2006). However, recently, and to an increasing extent after the 2007-2008 financial crash, the disproportionate growth of the financial system has been questioned in some 'mainstream' contributions as well (Cecchetti and Kharroubi, 2012; Beck et al., 2014). In particular, Law and Singh (2014) argue that there is a sort of "threshold effect" in the relationship between the extension of financial resources and growth. In brief, the expansion of the financial system may be beneficial to the economic growth, but only up to a point.

The Post-Keynesian literature analyses the effect of the growing importance of financial activities with a more holistic approach. Within this strand of literature, the term used to define the process of increasing integration between the financial and real sides of the economy is ‘financialization’. Following the definition proposed by Epstein (2005), financialized economies are characterized by the “increasing importance of financial markets, financial motives, and financial institutions, and financial elites in the operation of the economy and its governing institutions” (Epstein, 2005: 1). The term describes an ongoing and self-reinforcing economic and social process, which manifests itself in the growing prominence and influence of behaviours derived from the functioning of the financial sector (Erturk et al., 2008; Krippner, 2011; Tomaskovic-Devey and Lin, 2011).⁷⁰ One indicator of the influence of finance on the ‘real economy’ has been described also by looking at the increasing correlation between commodity prices and the prices of financial assets (see Tang and Xiong 2012; Ederer et al., 2013). In brief, this strand of literature argues that the long-term trajectories of economic systems gravitate more around the financial sector and less around the productive one (Foster, 2007; 2010). From a monetary theory of production perspective, financialization can be conceived, and could be defined, as a shift of the main channel of money creation from real production to financial speculation (Botta, Caverzasi and Tori, 2015). This process led to a change in the composition of the economic system in favour of the expansion of the financial sector.

From a simplistic perspective, the non-financial corporations could be seen as passive players under the control of oversized financial markets. However, financialization is a multifaceted and a highly debated concept, not reducible just to ‘quantitative’ dimensions regarding the size of the financial sector (Sawyer, 2014). In the previous section, we discussed how the study of the investment dynamic shifted towards the consideration of liquidity constraints as a key variable. In the era of the highest stage of development of joint stock companies, investment plans can be financed by not only the traditional channel of internally retained earnings or accumulating debts, but also by issuing a certain amount of new shares. Moreover, in addition to (or even in partial substitution to) physical investments, non-financial companies can readily accumulate (non-operating) financial assets. In the light of the literature reviewed in the previous discussion, the financial involvements of companies should be seen as a good practice. Like any other type of income, this would relax companies' liquidity constraints and boost physical investment.

Another body of literature argues that the increasing participation of NFCs in finance-related activities has to be seen mainly as a consequence of a change in the corporate governance

⁷⁰ Financialization affects the household and banking sector as well. Given the aim of this work, our description will focus on the sector of non-financial companies.

(Lazonick and O'sullivan, 2000; Hansmann and Kraakman, 2001). These authors argue that, from the early 1980s onwards, there has been legitimization of the corporate governance rule of maximizing the 'shareholder value'. The progressive diffusion and legitimacy of what is often defined as the 'Shareholder Primacy Norm' took its propulsive power from the advocates of the shareholder interests as the ultimate goal of the corporation (see in particular Jensen and Meckling, 1976, Rappaport, 1999, and Jensen, 2002). In particular, Lazonick and O'Sullivan (2000) observe a profound transformation in the corporate governance strategy in the US. While the former imperative has been to 'retain and re-invest' the operating earnings in physical long-term investments, with the prominence of the 'shareholder rule' the corporate governance has prioritized to 'downsize plants and distribute earnings'. The accumulation of fixed assets and the long-term orientation of the investment plans have been negatively affected by this 'behavioural twist'. This new orientation originates from a principal-agent type of theory, in which it is assumed that only the shareholders are the ones who ultimately contribute to the production within the corporation. For this reason, they are the only subjects to bear a risk on expected returns. Therefore, only the shareholders should have a claim on future corporate profits (Lazonick, 2010; 2012). The management (the agent), instead, has just to please the shareholder's requests by distributing dividends and boosting share prices through, among other ways, share buybacks operations (Lakonishok and Vermaelen, 1990; De Ridder, 2009).

3.3.1 Macroeconomic analyses about the financialization of investment

Back in the 1950s Joan Robinson argued that "where enterprise leads finance follows" (Robinson, 1952: 86), thus describing an endogenous financial system that was merely supporting trajectories already planned by the productive sector. In contrast, the financialization literature argues that the growing prominence of the 'financial motives' over the traditional productive purposes led to structural changes in the functioning of the economic system. The consequence has been that starting from the 1970s investment has been stagnant and growth has been lower (Stockhammer, 2004; Duménil and Levy 2004; Crotty, 2005; Palley, 2008; Ryoo and Skott, 2008; Hein, 2012). According to this literature, companies are ultimately the battlefield for the competing interests of managements and shareholders with the workers in a powerless position.

Within this strand of literature, different authors focused on various aspects of this process. Crotty (2005) argues that NFCs, attracted by profit rates that are higher than in their traditional sectors, increased their financial investment and shortened their planning horizons. Duménil and Levy (2004), focus on the rise in the payments (interests, dividends, and share buybacks) to the financial markets made by NFCs. Therefore, they show that companies experienced a significant reduction in available funds (retained earnings) for physical investments. Thus, according to these authors financialization has been detrimental for the dynamic of accumulation. More specifically,

Duménil and Levy (2004) argue that financial markets have increasingly ‘punctured’ the value generated by production in the non-financial sector.⁷¹

The vast majority of the empirical literature on the various impacts of financialization on investment is based on macroeconomic framework. Stockhammer (2004), van Treeck (2008), and Orhangazi (2008a), estimate a Kaleckian investment function⁷² building on the theoretical models of Rowthorn (1981), Dutt (1984), and Bhaduri and Marglin (1990) who formalized the work of Kalecki (1938, 1954, 1971).

Stockhammer (2004) introduces NFCs’ financial incomes and payments into an investment function with capacity utilization, the profit share, and the cost of capital as explanatory variables, in order to account for the effects of financialization. The author interprets financialization as a dual phenomenon. The firm’s financial incomes as the sum of interest and dividends received over the value added, and with the firm’s financial payments as the sum of interest and dividends paid are the principal components. Using annual aggregate macroeconomic data of the business sectors in Germany, France, UK, and the USA, the author finds mixed support for his hypothesis. Financialization, interpreted as a growing ‘shareholder value orientation’, caused a slowdown in accumulation that has different intensity in each country. In particular, for the UK Stockhammer finds that this adverse effect is small, because of an already depressed accumulation dynamic.

Building on this study, van Treeck (2008) propose a Kaleckian model in which he decomposes firm’s total profits to retained earnings, interest payments and dividend payments divided by the capital stock. Here the amount of interest and dividends paid to the rentiers is explicitly modelled as firms’ expenditure. The increase of what he calls the ‘rentiers’ share’, or the extraction of firms’ internal funds via interest and dividends has a negative impact on capital accumulation. Using annual data of non-financial companies in the US for the period of 1965-2004, also van Treeck finds significant negative effects of dividends and interest payments on capital accumulation.

Orhangazi (2008a) focuses on the US economy. The author estimates an investment function in which the current accumulation of fixed assets is explained by the lagged values of profits, the gross value added, total debt, the sum of interest and dividend incomes, and the sum

⁷¹ In contrast, other authors in the Marxian literature argued for a reversed causality, i.e. financialization of the economy should be understood as a consequence and not as a cause of the slowdown in the capital accumulation (e.g. Lapavistas, 2009, among others).

⁷² Within an almost established convergence of the key components of post-Keynesian and the Marxian economic theories, the macroeconomic specification of the investment function is the point in which these two views diverge. Since both theories assume an exogenous distribution of income and multiple propensities to spend, the rate of capacity utilization is the variable that makes possible the adjustment of savings to investments. Even if in both frameworks the firm’s investment decisions are regarded as an independent choice, the explanation of this adjustment process (the variation in output) is dissimilar. The dispute is reducible to long-run considerations and, in particular, the disagreement can be summarized by the long-run shape of the investment function and by the long-run divergent specific role attributed to the rate of capacity utilization (Lavoie et al., 2004).

of interest and dividend payments plus shares buybacks. As before, financialization enters the investment dynamic with a double effect: financial markets are both increasing and reducing firms' available funds. Orhangazi's findings highlight the constraints that financialization poses on accumulation. In general, the adverse impact of financial incomes and payments exceed the potential benefits. However, the coefficients for financial incomes and debt are not statistically significant.

Arestis et al. (2012) analyse the issue with a traditional Keynesian approach, modelling investment spending as an alternative to the purchase of bond and equities. In addition to aggregate demand, capacity utilization (as an indicator of future demand expectations), and the interest rate (cost of external finance), they introduce two financial alternatives to the investment in physical assets.⁷³ The return to the 'bond substitute' is measured with the yield of the US Treasury long-term bonds while the return to the 'equity substitute' is defined as the deviation between the stock market index and its "conventional level". In particular, the authors highlight the role of equities, as a type of assets which "gives the possibility of revising investors' long-run obligations in a short-run horizon" (Arestis et al., 2012: 9). These authors perform an econometric estimation using GMM for a sample of 14 OECD countries from 1970 to 2010. Their analysis shows that the primary determinant of investment is the accelerator aggregate demand. In particular, the authors find a robust inverse relationship between the return to the financial assets (bonds and stock market returns) and capital accumulation. Thus, they argue that there is an inherent conflict between physical and financial investment.

Even though the available evidence depict financialization as a phenomenon common to almost all developing and developed economies, the different institutional settings at country or/and regional level reveal the presence of 'varieties of financialization' (Lapavistas and Powell, 2013).

In brief, the main conclusion of the financialization literature based on macroeconomic data is that the increasing financial involvements of the NFCs have been negative for their investment and thus for the overall rate of growth. In the next paragraph, we focus on the microeconomic analyses that introduced finance into the study of the investment dynamic.

3.3.2 The microeconomics of financialization and investment

The origin of the microeconomic approach to financialization of investment can mainly be traced back to the works of Fazzari and Mott (1986) and Ndikumana (1999).

The work of Fazzari and Mott (1986) was a response to the critiques of the 'accelerator models' in the neoclassical literature. In particular, Jorgenson (1971) argued that the importance

⁷³ With this respect the authors stress the effects of uncertainty and businessman's expectations.

of liquidity was due to its high correlation with the output or sales measures employed by neoclassical models (Fazzari and Mott, 1986: 172). In response, Fazzari and Mott proposed an equation that includes both liquidity and sales, using firms' data for the US manufacturing sector to test the independent effect of these two variables. In their specification the annual capital expenditure is modelled as a function of net sales, internal finance (computed as profits minus distributed dividends), interest expenses and the book value of gross plant. The authors argue that this equation summarizes the three key components of the post-Keynesian theory of investment: a positive effect of sales (as a proxy for capacity utilization), a positive and independent effect of internal finance, and a negative impact of interest expenditure. In particular, they introduce a flow measure for interest payments in order to define a 'committed constraint' on the available cash flow. They estimate the equation by a generalized least squares technique using the first and second lags of the explanatory variables. Fazzari and Mott find support for the consistency between this theoretical investment model and the empirical analysis. In particular, they find a strong, positive, and independent effect of the internally available liquidity. Furthermore, they provide evidence of a negative impact of the expenses for the payment of interests.

In the work of Ndikumana (1999) on the US, investment is modelled as a function of the firms' debt. He specified a Q-model in the tradition of Hayashi (1982) extended by the inclusion of the debt service. The author uses four variables to explain investment: the ratio of cash-flow to capital, rate of growth of sales, the ratio of interest payments to capital, and Tobin's Q. Ndikumana finds a small effect of the market evaluation (Q). In particular, the author finds a negative effect of debt service. The debt, he argues, is not only reducing the cash flow (via interest payments), but it affects the sustainability of the investment process in the case of an adverse shock in profits or in the growth of sales.

To the best of our knowledge, only three empirical papers explicitly analyse the financialization of the investment from a microeconomic perspective.

Demir (2009) analyse financialization in the NFCs in Argentina, Mexico, and Turkey in the 1990s. The author estimates accumulation as a function of a set of country specific control variables (risk and uncertainty measures, level of credit from the banking sector and the level of real GDP), and the gap between the rates of return of fixed and financial assets. With the latter variable, Demir captures the markets signals for future profitability of non-operating activities and the opportunity costs for fixed investment. With this choice, the expected growing profitability of financial investments (and thus an increase in financial income) will increasingly redirect available resources from fixed investment. Estimating the function using a GMM approach, the author finds that companies prefer to invest in 'reversible' short-term financial investment instead using funds

for ‘irreversible’ long-term fixed investment plans. Increasing returns on financial assets reduces fixed investment spending of the industrial sector.

Orhangazi (2008b) proposes a microeconomic version of his macroeconomic analysis discussed in the previous section. The author analyses the effect of financialization on the investment behaviour of NFCs in the US, for the period of 1973-2003. Orhangazi explicitly takes into account the biunivocal aspect of financialization. He uses a specification in which, in addition to the traditional determinants of investment (namely the lagged levels of investments, sales, and operating income), financial incomes, financial payments, as well as the debt level are the other explanatory variables. Using a difference GMM estimator, he finds a significant and negative effect of financial payments on capital accumulation. Moreover, the level of long-term debt has a statistically significant and negative effect on investment. With respect to the financial payments, the author theorizes a ‘crowding-out’ effect: higher profits from the financial involvements should drive a change in the priorities of the management. Firms would prefer short-term reversible financial investments rather than long-term fixed ones. Orhangazi finds that this effect differs with respect to the companies’ sizes. In general, he concludes, “the nature of the relationship between financial markets and NFCs does not necessarily support productive investments. On the contrary, it might be creating impediments” (Orhangazi 2008:883).

Finally, the recent paper by Davis (2016) looks at financialization of NFCs in the US using a descriptive analysis of the changes in their balance-sheet structures. The author finds a) a substantial increase of the financial assets/fixed assets ratio since the 1980s; b) an overall increase in NFCs’ leverage; c) an increasing role of equity, and especially in the form of share buybacks. This increased financial orientation of US NFCs appears to be different with respect to firms’ size, with smaller firms again being less involved in this process.

The evidence at a microeconomic level supports the theoretical and empirical suggestions described in the previous section. The increasing interconnections between the financial flows of NFCs and financial markets are likely to have an adverse impact on the dynamic of physical accumulation.

3.4 Summary

In this section, we reviewed the conventional literature about firms’ level investment, as well as the literature from the perspective of ‘financialization’.

The conventional investment literature argues that companies’ financing issues mainly derive from agency problems, and the development of financial markets can relax these constraints. In addition, that financial markets facilitate the financing and the efficient allocation of investment. However, the beneficial effects of a disproportionate growth of the financial system

have been questioned in some contributions after the 2007-2008 crisis. We highlighted how, from the review of the ‘conventional’ approach to the analysis of firms’ investment and financial development, companies’ financial flows are not directly taken into account. Thus, given the transformation of the economies towards a financialized stage in the last decades, the conventional models of investment may be misspecified due to their neglect of some important factors in the firms’ financing and investment decision.

The main conclusion of the financialization literature based on macroeconomic data is that the increasing financial involvements of the NFCs have been negative for their investments and thus for the overall rate of growth. In the next paragraph, we focus on the microeconomic analyses that introduced finance into the study of the investment dynamic.

The few available contributions about the effects of financialization on investment from a microeconomic perspective confirm the findings of the macro literature. However, a positive effect of financial profits is found in the case of relative smaller companies.

The study of companies’ investment in a financialized context cannot disregard the inclusion of financial motives within the investment decision. Our contribution builds on the microeconomic financialization literature. In particular, we provide new evidence for Europe, whilst the focus of previous analysis has been almost entirely on the USA. In addition, we test the effect of financial development on the accumulation of fixed assets when financial variables are included within the investment function. We believe that this last part of our analysis could be an interesting start to connect, compare, and coherently assess the claims of the ‘conventional’ and of the ‘financialization’.

The next chapter presents and discusses the methodology of our analysis.

CHAPTER 4. Methodology.

4.1 Introduction

This chapter describes the research approaches used in this thesis, as well as the methodological design of our research. Section two sketches out the philosophical standpoint, thus providing the essential support our methodology. Section three contextualises and describes the methodology and the specific method used in our analysis. Section four presents and describes our variables and the various specifications of the investment function that will be tested econometrically. Section five summarises the chapter.

4.2 Research philosophy

Each components of any research design (theory, methodology, and method) should be consistent in terms of a particular philosophical standpoint. This is useful mainly because it give us a philosophical context supporting and strengthening our selected way in the process of acquiring knowledge. On one hand, we have to assess our belief about the nature of reality, which means to specify our ontological position. It means analysing the nature of social reality, independently from its specific determinations. For the realist position an ultimate reality exist whereas for the idealist position it does not exist, and it is the outcome of human social construction. The Western philosophy ontological tradition has its origins in Greek philosopher Parmenides and his emphasis about a fixed characterization of reality against Heraclitean view that stress the changing nature of what surrounds us (Gray, 2004). On the other hand, epistemology is that branch of gnoseology (the study of knowledge in general) that deals with the nature of the knowledge based on rationality or the “scientific knowledge”: in other words, it deals with the different conditions and methods under which we can know scientifically our (ontologically driven) reality⁷⁴.

Following Gray (2004), it is possible to identify three major epistemological positions: objectivism, which is the conception of reality independently of personal consciousness; constructivism, for which we should investigate reality as the outcome of interactions between humans and an “objective world”; subjectivism (that is more linked with Heraclitean ontology), which looks at the real world as the product of different subjects’ belief about it. Despite these apparently net subdivisions, we have witnessed the development of a plurality of both ontological and epistemological stances, especially in the field of economic theory. Furthermore, choices of one of the three positions do not preclude the selection of different theoretical perspective. Indeed, a lot of schools and branches characterize contemporary economics. Each of them has raised a lot of ontological and epistemological problem. In this work, we do not want to examine the diversity

⁷⁴ In the Anglo-Saxon tradition the term Gnoseology and Epistemology are usually used as synonyms.

of epistemological approaches but try to implicitly expose the philosophical within which our project is located. Particularly in relation to our project, we identified a major issue: the normative versus positive economics distinction. Since policy makers regard economic science (both theoretical and empirical) as a source to put forward policy decisions, it is not easy to assess the appropriate boundaries between a “positive economics” about facts and a “normative economics” about values. Nonetheless, within our particular space of inquiry, that is the one of political economy, the normative component is clearly relevant, since different theories ultimately concern human beings and thus offer different socio-political outcome. In what follows, we will try to assess our specific theoretical positions that we decided to follow in this research.

Positivism was the prevalent philosophical perspective in the 19th century’s Europe that favoured the development of a ‘positivist science’⁷⁵. The ‘Positive’ characteristic is translated in the belief that science and technic are the mean and the scope of its principles. Indeed, for this position, knowledge is only about real facts and this is possible exclusively by scientific experimental observations (Benton and Craib, 2001). To be ‘scientific’, a statement must come from a process that starts with the experimental observation and data collection, continues with the construction of explanatory laws and their experimental verification, ending with the refutation of non-verified hypothesis. Furthermore, for the positivists there is only one scientific methods that applies both to natural and social sciences. In the first half of the 20th century, given important development of physics, (the theory of relativity, Heisenberg’s uncertainty principle, etc.), the positivist conceptualization of science entered into crisis. This discoveries favoured a challenge to the (certain) deterministic laws of causation by inserting into the discussion (with some disturbing features) probabilistic laws has been the most important outcome of this phase (Hacking, 1975). Starting from these considerations, from the 1960s a new stream of thought made its way. For the post-positivists, the perception of reality based on empirical observations is not objective, but depend on the values and theory (Ryan, 2006).

We think that the post-positivist approach is the one that can better describe the foundations of our research design. The selection of a particular ontological and thus epistemological and theoretical position is undoubtedly guided by individual concern of the researcher but also by the ‘research question’, we want to address. As we said in the first section, we want to know ‘how large’ the effects of increasing financial motives on investments are. For this purpose, we want to develop our analysis by empirical estimating these different effects. Before this, we think that, in order to support and properly interpret “data”, an important step is to consider the development of theories regarding the distribution of income. In order to understand reality and thus our particular

⁷⁵ Some exponents of this school were Comte, Durkheim, Mill, Darwin and Spencer.

question about it, theories, and the evolution of a concept inside different theories are essential. Moreover, the interpretation of our observations, hence how we understand data, is crucial in defining our conceptual paradigm, in the sense of Kuhn (1970).

4.3 Research Methodology and method.

A research design could be defined as an “architectural plan” that shows how the research is to be conducted. Following Yin (1989), a research design is «an action plan for getting from *here* to *there*, where “here” may be defined as the initial set of questions to be answered and “there” is some set of (conclusions) answers about these questions»⁷⁶. It is a map to get from the philosophical and methodological assumption to data collection and analysis.

The methodology encodes the practices of research by examining the research process in order to clarify the procedures used, the underlying assumptions, and the proposed modality of explanation (Lazarsfeld and Rosenberg, 1955). When we are considering methodology, we are asking ourselves about what are the methods and techniques by which we are going to explain the reality. In short, methodology is the conceptual organization of practical cognitive acts (methods and techniques), according to the conditions, and within the general framework, of a particular epistemology. We can divide methodological approaches in “inductive” and “deductive”. The former describe a research process that starts with observations and finish with the delineation of a theory (generalizable or not). The latter, instead, start from a selection of a theoretical perspective that provides some hypotheses (or questions) about a particular phenomenon. Theoretical concepts that constitute the theory are transposed in terms of variables. In this approach, after a proper hypotheses statement, verifications by comparisons with data from the objective reality are required. After that, the researcher is able to confirm or reject the hypotheses and, in some cases, a revision of the theory is developed. Following this process, a theory is “false” if the outcome of this type of theory testing (that is by referring to the facts) is a contradiction, or rather a “falsification” of the theory (Popper, [1934] 1950).

At this point, given the discussion in the previous section, it should be clear that the deductive approach finds its natural roots in the positivist and post-positivist research philosophy. In general, it is quite simple to understand that the usual method derived from this methodological approach is ‘quantitative’ (opposed to the qualitative approach more likely originating from interpretivism and thus inductivism). In order to ensure consistency, the pertinence of employing quantitative or qualitative methods relies on the research question being asked. With this work, our aim is to define a concept of rent and explore its effects in the contemporary configuration of the “financialized capitalist system”. The primary aim of any quantitative research is to define a

⁷⁶ Yin (1989):135

relationship between measured variables through procedures that are established before the start of the study. In the quantitative approach, some hypotheses are formulated in terms of relationships between two or more variables. After that, statistical, (in our case econometrical), estimations are applied to data that can be collected either from primary or secondary sources. The end of this process is the numerical, thus quantitative, wording of the type and intensity of the investigated relationship (Neuman, 2005).

One of the crucial steps in a research process belonging to our theoretical position is the hypothesis statement. A hypothesis is a proposition that imply a relationship, and a causal connection, between two or more concepts linked to each other through the deductive procedure. Given our discussions in chapters 2 and 3, we could now exemplify the embryonic form of the three hypotheses that will be tested:

Hypothesis 1: financialization (inward and outward) has a negative effect on investments

Hypothesis 2: high levels of financial development has a negative effect on investments

Hypothesis 3: the effects of financialization and financial development on investment differ with respect to companies' size

The next physiological phase is the test of these hypotheses. Even though in a research project we can only have a single methodological position, the methods that we are going to use could be various. Etymologically speaking, a method is the way to reach a particular end: it is the ensemble of procedure and rules that allow us to describe reality. Here we will describe the method that will be employed in order to test our three hypotheses.

Our method will be the econometric specification and analysis of the hypotheses presented earlier, in order to assess the strength of the relationship implied in them. The use of this particular method does not only comes from the methodological approach explained earlier, but also from the profile of our research question. Our questions and hypotheses imply a combination of quantitative and economic reasoning, which correspond to the field of econometrics. In short, econometrics can be defined as «the interaction of economic theory, observed data, and statistical methods»⁷⁷. The purpose of the construction of an econometric model is not to empirically test some theory: an econometric model «is specified in terms of theoretically-motivated variables and applied to some data»⁷⁸ in order to quantify an economic relationship between two or more variables.

⁷⁷ Verbeek (2008), p.1.

⁷⁸ Mitchell (1995), p.10.

The use of mathematical methods in ‘doing economics’ is matter of debate within the so-called heterodox schools of economics⁷⁹. For Lawson (2009)⁸⁰, the consequence of the use of mathematical methods is a sort of ‘persistent illnesses’ of the economic discipline. In short, this author rejects the abuse of mathematical formalism since it comes from an atomistic and optimizing view about individuals. More strongly, Dow (2000) sees mathematical formalism as the code of ‘orthodox economics’ and it should be avoided in more realist categories of studies. Unsurprisingly, these views also arise within the discussion about the usefulness of econometric methods. Interestingly, Keynes himself had a negative opinion about what he used to label as ‘statistical alchemy’ (Keynes, 1939). This ongoing debate is very much influenced by Milton Friedman’s famous methodological essay (Friedman, 1953), in which the central argument is that the predictive power is the best evaluation method of any economic (econometric) models. From this, we have that the ‘realism’ of the assumptions made is secondary, or it even does not matter. In our view, most of the sceptical positions about econometrics originate from the belief that this method is mostly used to obtain more and more accurate predictions of economic variables, which, in the Keynesian sense, are instead characterized by fundamental uncertainty. We think that this should not exclude the use of econometric methods to explain in quantitative terms the relationship between two or more economic variables, mainly for two reasons, one theoretical, and one more practical. Firstly, we think that econometrics could be a common language with which we can create a field of confrontation between conventional and heterodox economists. Secondly, we think that econometrics can provide valuable quantified elasticities and effects that are necessary for policy decisions. In conclusion, we agree with Downward and Mearman (2002), which argue that the important practice for any researcher should be the ‘triangulation’ of the insights. Theoretical, descriptive, and empirical methods are mutually useful in order to support findings: indeed, methods «that help to establish context-specific understanding further, by exploring the meaning and mechanisms of particular processes, need to be allied to other methods that begin to explore their generality in the sense that similar demi-regularities might be detected»⁸¹.

As explained before, as measures of financialization, we will use explanatory variables provided by the theoretical analysis developed in the first chapter. Indeed, the main contribution of the empirical section will be on the use of new explanatory variables selected for the analysis. Having said that, when thinking about what are the best explanatory variables, we must bear in mind that these have to be robust with the ‘findings’ of the our theoretical exercise. Thus, here we

⁷⁹ The heterodox framework comprehends, among others, Post-Keynesian economics, Institutional economics, Sraffian economics, Marxian economics. It is in opposition to the orthodox or mainstream framework, even called “Neo-classical” or “New-Keynesian”. In the letter, the rigorous mathematical formalization is a prerequisite for a ‘scientific’ study about an economic phenomenon.

⁸⁰ Tony Lawson is the main exponent of the philosophical position so-called “critical-realism”.

⁸¹ Downward and Mearman (2002), p.412.

stress the two-way connection between the first and the second chapter, since the definition of rent and *rentiers* in the first part could influence the econometric model and in particular the selection of the specific independent variables. Furthermore, we will have to choose variables according to data availability. As an example, the explanatory variables would probably be the ratio between the total dividends plus interest payments over total assets, the ratio between the value of financial assets and total assets as well as private equity involvement in the firm management. Furthermore, in order to have robust results, we will have to ‘control’ for other independent variables that could affect the level of our different dependent variables such as the size of the firm, its degree of competitiveness, its level of productivity etc., also avoiding ‘spurious correlations’ among variables.

As said before, the dependent variable will be ‘investment’ (or the rate of accumulation). As should be clear from previous discussion, we are interested on the dynamic effects of our explanatory variables on our three dependent variables. In this regard, panel data are advantageous because they provide the indispensable information in order to model individual dynamics. As we said before, our dynamic panel data models will ‘control’ for some exogenous variables that could affect the behaviour of different dependent variables. The prototype of our model can be written as

$$I_{it} = \beta_0 I_{i,t-1} + \beta_1 x_{it-1} + \beta_2 \tau_{it-1} + \alpha_{i,w} + u_{it} \quad (\text{a})$$

Recall that the goal of any estimation procedure is to discover the ‘true’ value of the parameters we are interested in, or at least a consistently close estimate of it. In the equation, the term i identifies each individual (firm), t identifies the time period of the observation ($t = 0, 1 \dots, T$) and $t-1$ is the notation for the period previous to t . Our plan is to collect observations on I_{it} for a time period T equal to ten years. In this simple form of a linear autoregressive dynamic panel data model, the dependent variable is explained by two independent variables x_{it-1} and τ_{it-1} , by the lagged values of the dependent variables $I_{i,t-1}$, by an individual effect $\alpha_{i,w}$ and by an error term u_{it} . The term $\alpha_{i,w}$ describe the unobserved individual-specific and time-invariant effect which allows for heterogeneity in the means of w_{it} across individuals. Individuals’ (in our case firms’) error terms are assumed to be independent and identically distributed (IID) with mean equal to zero and variance σ_u^2 . The econometric translation of our hypotheses is that, in general, we expect that the parameters linked to our two independent variables, β_1 , and β_2 , will result to be negative. However, as discussed, we expect a variation in these effects due to the size and financial environment of the businesses. The size and the sign of the parameter γ will explain the power and the direction of the auto-reinforcing dynamic trend.

Since in a panel data model we have that the explanatory variables are changing over two dimensions (by individual and by time), this enables us to obtain specifications and estimates that are more accurate and that contains more information, in contrast to cross-section and time-series models. Despite this advantage, with this type of data two sets of practical problems arise (Verbeek, 2008)⁸². First, different observations about the same unit through a period are no longer independent, thus causing autocorrelation issues. Second, since panel data usually contain a considerable number of observations, it is inevitable that some of them are randomly missing, and thus the analysis has to be adjusted accordingly. We will briefly discuss these two points in respect to our model.

For the estimation of model presented above, since $I_{i,t-1}$ and α_i are positively correlated by definition, and since it is possible that the error term u_{it} can be correlated with one or more explanatory variable, applying the usual Ordinary Least Squared (OLS) estimation would give us inconsistency. In fact, it is no longer possible to assume that this expected correlation is equal to zero or, more rigorously, that $E\{u_{it}x_{it-1}\} = 0$ and $E\{u_{it}\tau_{it-1}\} = 0$. The lagged explanatory variable is endogenous to the individual effect in the error term, since α_i is part of the process that generates $w_{i,t-1}$. In addition, the positive correlation with the error term does not disappear as N gets larger nor as T increases. Thus, we have to apply a different estimation procedure for the parameters β , β_1 and γ . First-differencing the equations is a possible strategy to remove the effect of α_i . We can rewrite our model for investment as

$$\Delta I_{it} = \beta \Delta x_{it} + \beta_1 \Delta \tau_{it} + \gamma \Delta I_{i,t-1} + \Delta \varepsilon_{it} \quad (b)$$

where ε_{it} is equal to the sum of α_i and u_{it} . This transformation avoids the situation in which each transformed observation depends on lagged observations of the original variables, allowing the latter to be available as ‘instruments’. The conditions in terms of expectations that are implied by the model described before are called "moment conditions". In order to solve the inconsistency problem of OLS we have to identify more general moment conditions. These conditions are usually derived from the availability of ‘instrumental variables’, which are variables that can be assumed to be uncorrelated with the error term u_{it} but, at the same time, correlated with the regressors. Using the first-differencing transformation, the explanatory variables dated before time period $t-1$ can be used as ‘valid instruments’ and γ can be estimated by a IV-2LSL, or instrumental variables-two stages least squared estimator (Anderson and Hsiao, 1981). For example, $\Delta I_{i,t-2}$ can be used as an instrumental variable (IV) for $\Delta I_{i,t-1}$. In this case, a widely used approach is the so

⁸² For an extended discussion of strengths and weaknesses of panel data analysis see Hsiao (1985).

called Generalized Method of Moments (GMM) (see Hansen, 1982 and Hall, 2005). Following this method, we are able to estimate parameters directly from moment conditions that are imposed by the model (provided that the number of moment conditions is at least as large as the number of unknown parameters). GMM is a ‘generalized method of moments’ because it is able to take into account heteroscedasticity and autocorrelation of data series. The simple intuition of the GMM method is that we can derive a moment condition from instrumental variables assumed to be uncorrelated with the error term and correlated with the regressors. Unfortunately, an extended specification of the GMM is feasible only when the structure of the data has been analysed.

In case of a fairly large number of time periods T but of small or moderate number of cross-sectional units N , it is quite important to deal with potential nonstationarity of the data series.

In this respect, a wide range of alternative is available to test for cointegration in a dynamic panel data setting. A substantial number of these are based on testing a unit root in the residuals of a panel cointegrating regression.

In addition, for a variety of reason, empirical panel data sets are often incomplete. A consequence of different events (new firms, firms’ closure, external shocks, etc.) is that, if the number of individuals equals N and the number of periods equals T , the total number of observation will be significantly smaller than $N \times T$. The problem is that most of the expression of estimators are no longer correct if observations are absent. By removing individuals with incomplete information, estimation uses just the ‘balanced subpanel’. The loss of information can be prevented by using all observations including those on individuals that are not observed in all T periods, thus using the ‘unbalanced panel’. The consequence is that, during computations, some modifications to the formulae are required. Furthermore, another more serious consequence of using incomplete panel is the so-called ‘selection bias’: if individuals are incompletely observed for an endogenous reason, it is worth noting that the use of either the balanced subpanel or the unbalanced panel may lead to biased estimators and thus misleading tests.

In dynamic panel data models, the unobserved panel-level effects are correlated with the lagged dependent variables. Standard estimators (e.g. Ordinary or Generalized Least Squares) would be inconsistent. Therefore, we estimate our models using a difference-GMM estimator (Arellano and Bond, 1991). This methodology is suitable for analyses based on a ‘small time/large observations’ sample. GMM is a powerful estimator for analyses based on firm-level data mainly for three reasons (Roodman, 2009). First, GMM is one of the best techniques to control for all sources of endogeneity between the dependent and explanatory variables, by using internal instruments, namely the lagged levels of the explanatory variables, which allows us to address dual causality, if rising financial payments and incomes is also a consequence of the slowdown in the capital accumulation. The instrument set consists of instruments that are not correlated with the

first difference of the error term, but correlated with the variable we are estimating. Second, by first-differencing variables, this estimator eliminates companies' unobservable fixed effects. Third, GMM can address autocorrelation problems.

The final estimates come from the combination of instruments and a vector of parameters that shows the minimum correlation between the error term and the instruments. We perform three types of tests on the estimation results. Firstly, we apply the Arellano-Bond test for second-order serial correlation (Arellano and Bond, 1991) which tests for the presence of autocorrelation in the residuals. Secondly, we verify the validity of the instruments set through the Hansen test (Hansen, 1982) which takes the orthogonality between instruments and regressions' residuals as the indicator of consistency between estimated and sample moments.⁸³ Thirdly, we incorporate time effects to account for shocks that are common to all firms in a specific year, and test the joint significance of the time dummies by using a Wald test.

We apply two standard tests to assess the appropriateness of the instrument sets, and lag structures. First, we check for second-order serial correlation with the Arellano-Bond test (Arellano and Bond, 1991). Second, we verify the validity of the instruments sets through the Hansen test.⁸⁴ In all models, the lagged dependent variable enters the instrument set as endogenous while all other explanatory variables enter as predetermined regressors. Consistently, the instrument sets include the second and third lags of the lagged dependent variable, and the first and second lags of the other lagged explanatory variables. We test the joint significance of the time dummies, and the consistency of the interaction dummies on financial incomes using a Wald test.

All the variables are in logarithmic form to allow for non-linear relationships between the dependent and the explanatory variables. Furthermore, the logarithmic scale enables us to reduce the disturbances coming from the presence of heteroscedasticity. Robust standard errors are calculated through a two-step procedure after a finite-sample correction (Windmeijer, 2005).

All the estimations come from weighted regression, with the weights equal to 1 over the available observations for a specific country. This procedure mitigates the bias in the results

⁸³ As argued by Roodman (2009), Hansen's-J test is preferred to the usual Sargan test when we allow for the presence of heteroscedasticity in the error terms (i.e. errors are non-spherical). The Sargan test is a special case of Hansen test when we assume homoscedastic errors. However, the Hansen test (similar to the Sargan test) is sensitive to the total number of instruments. To control for this effect, we will check also the validity of the "difference-in-Hansen test" which control for the validity of the instruments set excluding groups. In addition, we performed robustness checks by reducing (collapsing) the number of total instruments. Overall, we defined models with the ratio between instruments and observations not exceeding 10 per cent.

⁸⁴ Hansen test takes the orthogonality between instruments and regressions' residuals as the indicator of consistency between estimated and sample moments. We tested and confirmed the presence of heteroscedasticity in our sample by using the White/Koenker and the Breusch-Pagan/Godfrey/Cook-Weisberg tests. Hansen's-J test is preferred to the Sargan test in the presence of heteroscedasticity (Roodman, 2009). However, the Hansen test (as the Sargan test) is sensitive to the total number of instruments. Therefore, we use only the first and second lags of our variables as instruments. Furthermore, all instruments are 'collapsed', thus having an instrument for each variable and lag distance.

coming from the highest data availability for core countries. Finally, we applied a general-to-specific estimation procedure, thus dropping from the specification the explanatory variable with the highest level of statistical insignificance at each step until we arrive at a specification with only significant variables. By doing this we get to the most parsimonious lag structures for different specifications.

4.4 Specifications of the investment functions

Within the Post-Keynesian theory, capital accumulation is an intrinsically dynamic process (Kalecki, 1954; Lopez and Mott, 1999). Physical investment is an irreversible phenomenon. There is a path dependency that link past and future levels of accumulation, as confirmed by the previous empirical literature. The inclusion of the lagged level of investment increases the explanatory power of our models. In fact, the accumulation of fixed assets is an intrinsically dynamic process. As we have seen in the previous discussion, the past level of investment is a fundamental determinant of the actual level of accumulation. Thus, the process of financing the investment plan overlaps in different time-periods, and there is a path dependency which link past and future levels of investment. Ford and Poret (1991)⁸⁵, Kopcke and Brauman (2001), Orhangazi (2008), and (Arestis et al., 2012) show the importance of the lagged accumulation in explaining its future value. Therefore, in all the models to be estimated, we include the lagged investment. Also all other explanatory variables are lagged in order to depict the ‘adjustment processes’.

To analyse the potential effects of financialization, we enriched the basic version proposed by Fazzari and Mott (1986). Equation (1) presents our baseline specification of ‘financialized investment’, where the rate of accumulation, I/K , is:

$$\begin{aligned} \left(\frac{I}{K}\right)_{it} = & \beta_0 + \beta_1 \sum_{j=1}^2 \left(\frac{I}{K}\right)_{it-j} + \beta_2 \sum_{j=1}^2 \left(\frac{\pi - CD}{K}\right)_{it-j} + \beta_3 \sum_{j=1}^2 \left(\frac{S}{K}\right)_{it-j} \\ & + \beta_4 \sum_{j=1}^2 \left(\frac{\pi_F}{K}\right)_{it-j} + \beta_5 \sum_{j=1}^2 \left(\frac{F}{K}\right)_{it-j} + \beta_6 \sum_{j=1}^2 (Q)_{it-j} + \beta_t + \varepsilon_{it} \end{aligned} \quad (1)$$

where I is the addition to fixed assets, K is the net capital stock, S is net sales, π is net operating income and CD is cash dividends paid, F is the sum of cash dividends and interest paid on debt, π_F is the total non-operating (financial) income as the sum of interest and dividends

⁸⁵ Ford and Poret (1991) analysed the pattern of investment in OECD countries in the 1980s from a macroeconomic perspective. They studied the consistency between the time-series properties of investment, output, and cost of capital in order to assess the empirical validity of different underlying theories. They found that for most of the countries the best explanatory variable for current investment dynamic is its own past trend.

received by the company, and Q stands for Tobin's Q . We use the approximate average measure for Tobin's Q suggested by Chung and Pruitt (1994), who suggest a compromise between "analytical precision and computational effort" (Chung and Pruitt, 1994: 71). This method is based on the well-established procedure proposed by Lindenberg and Ross (1981).⁸⁶ Furthermore, i is the firm index, β_t identifies a set of time-dummies to control for unobservable time-specific effects common to all firms in the different estimations, whilst the standard disturbance term ε_{it} captures firm-specific fixed effects and idiosyncratic shocks. The operating income/fixed assets ratio is a measure of the profit rate, whilst the sales/fixed assets ratio is our measure of capacity utilization.⁸⁷ We also introduce the change in total debt/total assets ratio $\left(\frac{TA}{TD}\right)$ to control for the additional effect of indebtedness investment.

All variables are lagged to reflect the time consideration in the investment plans. The net operating income/fixed assets ratio (retained earnings) is a measure of the after dividends profit rate, the sales/fixed assets ratio is a proxy reflecting capacity utilization, financial payments/fixed assets and non-operating income/ fixed assets are the two measures of the impact of financialization. Table 1A in the appendices contains variables' descriptions and codes. We expect positive effects of the lagged accumulation rate, profit rate, and sales on investment. In contrast, in the light of the macroeconomic and microeconomic Post-Keynesian literature, we expect the impact of total financial payments (or 'cash commitments') to be negative. In this model cash dividends are conceived both as a reduction of available internal funds, and as reflecting behavioural changes due to the 'shareholder value orientation' (henceforth SVO) as suggested by Lazonick and O'Sullivan (2000). The composite measure for outward financialization, F , which is the sum of interest and dividend payments (as a ratio to K), capturing a) the liquidity effect of interest payments, and b) the additional behavioural effect of the SVO. In brief, F reflects the financial outflows, while π_F reflects the financial inflows. Not only do NFCs use part of their funds to pay interest and dividend to the financial sector, but they can also more than before pursue non-operating financial investment themselves, thus receiving financial incomes. We include the sum of interests and dividends received by the NFCs (π_F) as a ratio to K as an additional explanatory variable⁸⁸. Theoretically, the sign of the effect of financial incomes on investment is

⁸⁶ See appendix A for a detailed description of the variables. This measure is used also in Love and Zicchino (2006), who use the same database as in this paper.

⁸⁷ I.e. output/potential output $\frac{Y}{Y^*}$ is equal to $\frac{\left(\frac{Y}{K}\right)}{\left(\frac{Y^*}{K}\right)}$, where $\left(\frac{Y^*}{K}\right)$ is potential output as a ratio to capital stock, which is a measure of technology. With constant technology in the short time period, time effects (which we control for) capture the technological change. Thus, $\frac{Y}{K}$ is often used as a measure of capacity utilization, in particular due to a lack of data for Y^* .

⁸⁸ Interest and dividends do not exhaust the spectrum of non-operating financial incomes of NFCs. In fact, Krippner (2005) shows how capital gains account for a considerable part of NFCs financial profits. However, as also recognised

ambiguous. On the one hand, these incomes may have a positive impact on the accumulation of fixed assets by easing the liquidity constraint faced by firms. In particular, this can be the case for relatively smaller companies, which are more likely to experience liquidity restrictions compared to larger corporations. On the other hand, financial activities can also be detrimental to physical accumulation, since NFCs will be attracted by short-term, reversible financial investment, instead of engaging in long-term, irreversible physical investment. In order to explore the potential different effect of financial payments in small vs. large companies, we estimate an extended version of specification (1) as,

$$\begin{aligned}
\left(\frac{I}{K}\right)_{it} = & \beta_0 + \beta_1 \sum_{j=1}^2 \left(\frac{I}{K}\right)_{it-j} + \beta_2 \sum_{j=1}^2 \left(\frac{\pi - CD}{K}\right)_{it-j} + \beta_{2.1} \sum_{j=1}^2 \left[\left(\frac{\pi - CD}{K}\right) * D_n\right]_{it-j} \\
& + \beta_3 \sum_{j=1}^2 \left(\frac{S}{K}\right)_{it-j} + \beta_4 \sum_{j=1}^2 \left(\frac{\pi_F}{K}\right)_{it-j} \\
& + \beta_{4.1} \sum_{j=1}^2 \left[\left(\frac{\pi_F}{K}\right) * D_n\right]_{it-j} + \beta_5 \sum_{j=1}^2 \left(\frac{F}{K}\right)_{it-j} \\
& + \beta_{5.1} \sum_{j=1}^2 \left[\left(\frac{F}{K}\right) * D_n\right]_{it-j} + \beta_1 \sum_{j=1}^2 \left(\frac{TD}{TA}\right)_{it-j} + \beta_6 \sum_{j=1}^2 (Q)_{it-j} + \beta_t + \varepsilon_{it}
\end{aligned} \tag{2}$$

where the dummy variable D_n takes the value 1 if the average total assets of company i lies in the lower n percentile of the distribution, and takes the value 0 otherwise. In our estimations, this size-dummy is interacted with the financial incomes variable, as well as with other explanatory variables included in the above specification (the rationale of the dummy is the same). In this specification, while β_4 is the effect of financial incomes (or other variables) in larger companies, $\beta_4 + \beta_{4.1}$ capture the effect of financial incomes (or other variables) in smaller companies.

In addition, the effect of financial incomes on NFCs rate of accumulation can differ depending on the degree of FD of the country in which the NFCs are based. In this chapter, we analyse the relationship between the development of the financial system and physical investment by estimating the impact of NFCs financial incomes on investment at different levels of financial development. The financial system acts as a provider of long-term liquidity to finance investment but, when its size and development is detached from the requirements of the real-sector, a perverse effect may emerge. In fact, NFCs may take advantage of a growing and developing financial system to engage even more in non-operating financial activities, causing a strong negative effect

by Orhangazi (2008b) with respect to Compustat database, also in Worldslope data on NFCs' capital gains are not available.

on their core capital accumulation. To explore this additional effect we estimate equation (3) in which we interact our variable for financial incomes $\left(\frac{\pi_F}{K}\right)$ with the dummy variable D_{LFD} . The latter takes the value 1 if company i is located in a country with relatively low level of FD, and takes value 0 otherwise (i.e. if company i is located in a country with higher level of FD).

$$\begin{aligned}
\left(\frac{I}{K}\right)_{it} = & \beta_0 + \beta_1 \sum_{j=1}^2 \left(\frac{I}{K}\right)_{it-j} + \beta_2 \sum_{j=1}^2 \left(\frac{\pi - CD}{K}\right)_{it-j} + \beta_{2.1} \sum_{j=1}^2 \left[\left(\frac{\pi - CD}{K}\right) * D_{nLFD}\right]_{it-j} \\
& + \beta_3 \sum_{j=1}^2 \left(\frac{S}{K}\right)_{it-j} + \\
& + \beta_4 \sum_{j=1}^2 \left(\frac{\pi_F}{K}\right)_{it-j} + \beta_{4.1} \sum_{j=1}^2 \left[\left(\frac{\pi_F}{K}\right) * D_{LFD}\right]_{it-j} + \beta_5 \sum_{j=1}^2 \left(\frac{F}{K}\right)_{it-j} \\
& + \beta_{5.1} \sum_{j=1}^2 \left[\left(\frac{F}{K}\right) * D_{LFD}\right]_{it-j} + \beta_6 \sum_{j=1}^2 \left(\frac{TA}{TD}\right)_{it-j} + \beta_{6.1} \sum_{j=1}^2 \left[\left(\frac{TA}{TD}\right) * D_{LFD}\right]_{it-j} \\
& + \beta_7 \sum_{j=1}^2 (Q)_{it-j} + \beta_t + \varepsilon_{it}
\end{aligned} \tag{3}$$

In order to split our sample into countries with low and high financial development, we refer to the traditional index proposed by Demirgüç-Kunt and Levine (1996) and Beck et al. (2000), also used by Love and Zicchino (2006) among others. Even though more disaggregated indexes have been introduced (see Beck et al., 2010), we opted for the traditional version for two reasons: first, this index is more parsimonious and help us in interpreting the results. Second, in line with the aim of this study, we are interested in taking into account the ‘depth’ of the financial sector. Although important, the efficiency and stability of the financial system used in other indexes are less relevant categories in this respect. The FD index is the sum of Index 1 and Findex 1 from Demirguc-Kunt and Levine (1996). Index 1 summarizes the stock market development and is the sum of (standardized indices of) market capitalization to GDP, total value traded to GDP, and turnover (i.e. total value traded/market capitalization). Findex1 account for the financial intermediary development and is the sum of (standardized indices of) ratio of liquid liabilities to GDP (i.e. M3/GDP), and ratio of domestic credit to private sector to GDP. These indexes are computed by using a simple standardization formula. The means-removed value of variable X for country j is equal to $X_j^m = \frac{X_j - \text{mean}(X)}{|\text{mean}(X)|}$, where the term in the denominator represent the absolute average value across countries in the sample for the period considered. If a country has a FD index

above (below) the median, it will be considered to have a high-developed (low-developed) financial system.⁸⁹

The fourth and last specification that will be estimated is an integration of equation (2) and (3). The effects of financial incomes and financial payments are interacted with both the size-dummy and FD-dummy. For simplicity, the effect of operating income and debt are interacted with just the FD-dummy.⁹⁰ This specification allows us to estimate consistently the impact of our variables in different contexts.

$$\begin{aligned}
\left(\frac{I}{K}\right)_{it} = & \beta_0 + \beta_1 \sum_{j=1}^2 \left(\frac{I}{K}\right)_{it-j} + \beta_2 \sum_{j=1}^2 \left(\frac{\pi - CD}{K}\right)_{it-j} + \beta_{2.1} \sum_{j=1}^2 \left[\left(\frac{\pi - CD}{K}\right) * D_{nLFD}\right]_{it-j} \\
& + \beta_3 \sum_{j=1}^2 \left(\frac{S}{K}\right)_{it-j} + \beta_4 \sum_{j=1}^2 \left(\frac{\pi_F}{K}\right)_{it-j} \\
& + \beta_{4.1} \sum_{j=1}^2 \left[\left(\frac{\pi_F}{K}\right) * D_{LFD}\right]_{it-j} + \beta_{4.2} \sum_{j=1}^2 \left[\left(\frac{\pi_F}{K}\right) * D_{20}\right]_{it-j} + \beta_5 \sum_{j=1}^2 \left(\frac{F}{K}\right)_{it-j} \\
& + \beta_{5.1} \sum_{j=1}^2 \left[\left(\frac{F}{K}\right) * D_{LFD}\right]_{it-j} + \beta_{5.2} \sum_{j=1}^2 \left[\left(\frac{F}{K}\right) * D_{20}\right]_{it-j} + \beta_6 \sum_{j=1}^2 \left(\frac{TA}{TD}\right)_{it-j} \\
& + \beta_{6.1} \sum_{j=1}^2 \left[\left(\frac{TA}{TD}\right) * D_{LFD}\right]_{it-j} + \beta_7 \sum_{j=1}^2 (Q)_{it-j} + \beta_t + \varepsilon_{it}
\end{aligned} \tag{4}$$

At this point of the discussion, a clarification about how to interpret the different effects is needed. As for the computation of the size effect in equation (2), the true effect of explanatory variable ‘x’ will be equal to the sum of the interacted and the non-interacted coefficient. The discussion is a bit more complex when more than one interaction for the same variable is included in the specification. Taking financial income as an example, the estimated coefficient β_4 will correspond to the effect of this variable for companies lying in the top 80% of the distribution in terms of total assets, which also are in country with high FD. The estimated coefficient $\beta_{4.1}$ will be the effect of financial incomes in the companies in the top 80% of the size distribution but based in countries with low FD. Furthermore, coefficient $\beta_{4.2}$ will reveal the effect of this variable in relatively smaller companies (the low 20% of the size distribution), irrespective of their location

⁸⁹ We could have also tested a specification in which Index1 and Findex1 were inserted separately, with two correspondent interaction dummies. This could have helped in testing the different impact of financialization within the so-called ‘bank based’ vs. ‘market-based’ economic systems. However, as shown in Sawyer (2014) and in Botta et al. (2016), this dichotomy is not useful when correctly employing an endogenous money approach, as well as when considering a financial system with a heavy presence of shadow-banking practices.

⁹⁰ In addition, since Total Assets already divide the debt variable, an additional interaction again based upon the distribution of average Total Assets would create collinearity problems in our estimation.

in terms of FD. The remaining two effects are computed as follows. The impact of financial incomes in companies in the low 20% of the size distribution in countries with high FD will be equal to $\beta_4 + \beta_{4.2}$. The result of $\beta_4 + \beta_{4.2}$ will be the effect of financial incomes in relatively smaller companies based in countries with low FD. The same logic applies to financial payments. Furthermore, the effect of operating income in companies based in country with low FD will be equal to $\beta_2 + \beta_{2.1}$; the effect of change in debt in companies based in country with low FD will be equal to $\beta_6 + \beta_{6.1}$. When the two effect to be summed up have a different sign, they can end up being statistically equal to zero. To check for this we apply a Wald test to the summation of the effects coming from the sum of the different coefficients described above. If the p-value of the test is higher than 10%, this means that the sum is not statistically different from zero. In this case, the effect of the interaction is simply zero

With equations (1), (2), (3), and (4) we aim at introducing full models of firm-level investment that are coherent with the Post-Keynesian tradition of investment analysis, and that a) takes into account the inherent irreversibility of physical investment, b) controls for the independent effect of profitability and demand, c) highlights the effects of financial relations, d) makes a clear distinction between operating and non-operating activities, and e) treats financial outflows and inflows, i.e. both outward and inward financialization, as fundamental determinants.⁹¹ These models aim at capturing two of the potential impacts of financialization. As we argued before, financial income can have both positive and negative effects on physical investment. Hence, the expected sign of the coefficient of financial income is ambiguous. This dual feature of financial non-operating income can differ according to the company size, as well as to the overall development of the financial system in which the company operates. On the contrary, we expect financial payments to have a negative effect, since they represent a reduction in firms' internal funds available for investment due to the payments of interest on debt and dividends to shareholders. This variable summarizes the effect of the increase in external means of financing, as well as the strength of the 'shareholder value orientation' discussed earlier. As confirmed by theory and previous empirical evidence, we expect a positive and significant effects of internal finance and sales.

4.5 Summary

This chapter outlined the methodology of our analysis. First, we illustrated our philosophical stance, presenting the post-positivist approach as the one that can better describe the foundations of our research design. The selection of a particular ontological and thus epistemological and

⁹¹ We also extended the model with total debt/fixed capital, and change in or the square of this ratio, but we did not find any statistically significant effects. Results are available upon request. An extended model with share buybacks was not feasible due to lack of data.

theoretical position is undoubtedly guided by individual concern of the researcher but also by the chosen ‘research question’. Since we want to understand ‘how large’ the effects of increasing financial motives on investments have been, we want to develop our analysis by empirical estimating these different effects. In order to support and properly interpret ‘data’, an important step has been the consideration of the theoretical development regarding the distribution of income developed in Chapter 2. Second, we discussed our methodology. We first presented and discussed our hypothesis. Then, we focused on the derivation of our basic econometric specification, and on the properties of the chosen method of estimation (i.e. the Generalized Methods of Moments). In the third section, we described the characteristics of the four specifications that will be estimated, highlighting in particular the usefulness of the interaction dummies, which will allow us to test various typologies of non-linearity.

The next chapter presents our dataset and illustrate the key stylized facts about our main variables.

CHAPTER 5. The dataset and stylized facts.

5.1 Introduction

This chapter presents the data used for our analysis. Section two describes our data source, highlighting its peculiarities with respect to other potential sources. Section three presents the key stylized facts of our dataset, focusing on both the description of the evidence for the aggregate and the single major countries. The descriptive analysis in this section will be useful to introduce and inform the following econometric estimations. Section four summarises the chapter.

5.2 Data source

Our sample consists of the following western EU member states (EU14): Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the UK.⁹² We extracted our data from the Worldscope database of publicly listed firm's balance sheets, which contains standardized accounting information about not only investment, sales, profits, interest, and dividend payments but also companies' financial incomes. Standardized data on financial payments and, in particular, financial incomes are difficult to find; our database allows us to have a comprehensive variable for our estimations. Worldscope database has been acknowledged as a valuable source in the literature on firm-level investment analysis (e.g. Cleary 1999; Pawlina and Renneboog, 2005; Love, 2003; Love and Zicchino, 2006). Our data are annual for the period of 1995-2015. Due to data availability, the individual country cases are limited to large economies with high numbers of publicly listed NFCs, as reliable estimations using dynamic panel data methodology requires a substantial number of cross sections, which makes country specific estimations unreliable for small countries.

We decided to exclude private companies from our sample for two main reasons. First, the reliability of private NFCs data cannot be as strong as the one in case of publicly listed ones (which themselves often show inconsistencies). Second, we confidently assume that publicly listed companies are the ones most likely to be affected by financialization.

It is well known that the presence of outliers usually characterizes firm-level data. To prevent biased estimations, we apply a data screening process, by excluding extreme outlier observations from the sample.⁹³ First, we select firms that have at least three consecutive observations for the dependent variable (I/K), which is also required for econometric purposes (see Roodman, 2009). Second, we excluded companies with rate of accumulation (I/K) higher than 2.5, since this is representing a growth rate of capital stock higher than 250%. Third, we excluded

⁹² Given restricted data availability for NFCs in Luxembourg, we excluded this country from the analysis.

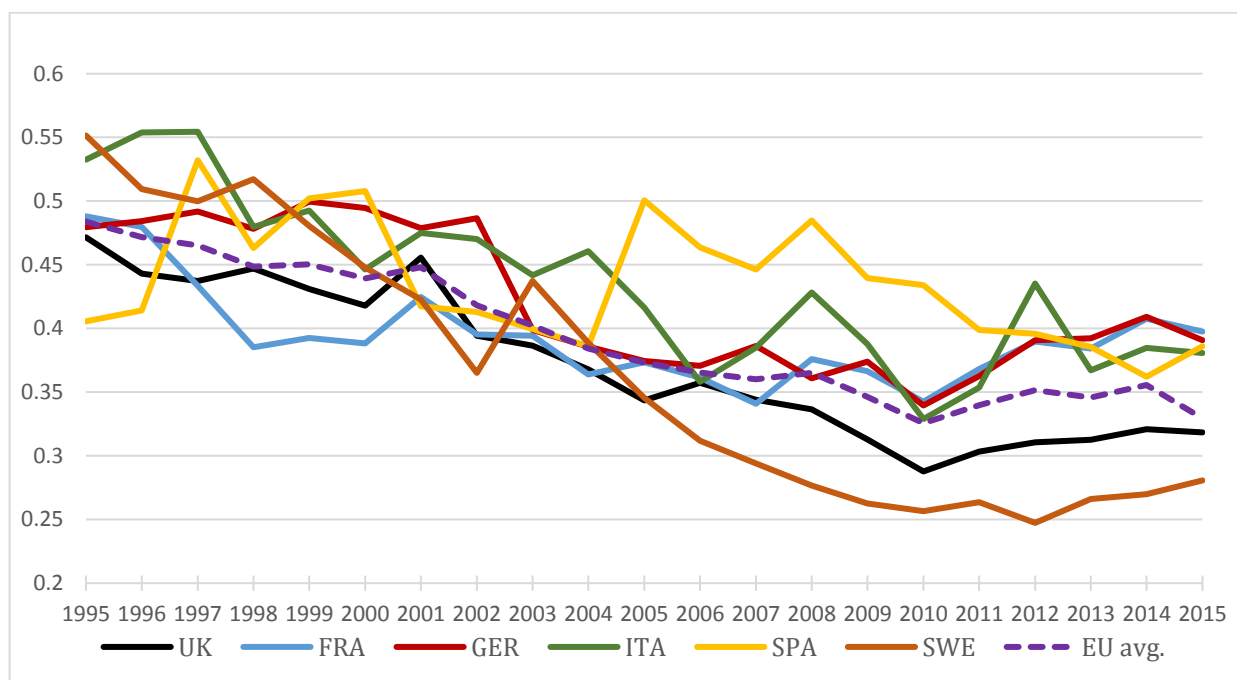
⁹³ Guariglia and Carpenter (2008), Love and Zichino (2006), Chirinko et al. (1999) and Orhangazi (2008b) follow similar strategies to define and exclude the outliers.

companies that experienced even a single year-on-year growth of sales (or revenues) higher than 300%. In fact, this is the common sign for the occurrence of a merger or acquisition and we decided to exclude these events from the sample. Fourth, we drop all the companies with a permanent negative mean operating income for the whole period, since this indicate an unstable financial position and a relatively higher level of bankruptcy risk. Finally, we computed the distribution of each regression variable at the country level and excluded observations in the upper and lower 1% of each variable's distribution. With these adjustments, we finally have a total number of 25726 observations and 2881 companies. Table 6 in the appendix summarizes the definitions and database codes of the variables employed in our study. The selection of the specific variables used for the study has been informed by both the existing literature on firm-level investment behaviour and the recent literature about financialization. We tried to synthesize these two strands of analysis maintaining analytical coherence at the same time. Furthermore, Tables 8, 9, and 10 in the appendix show more specific descriptive statistics and coverage of our sample. Next, we present the stylized facts of our sample for the EU14 pool, and selected countries where we have relatively large numbers of NFCs.

5.3 Stylized facts

Figure 1 shows the trends of the ratio of addition to fixed assets to operating income.

Figure 1. Additions to fixed assets/operating income (I/π), NFCs, Europe14 pool and selected countries, 1995-2015



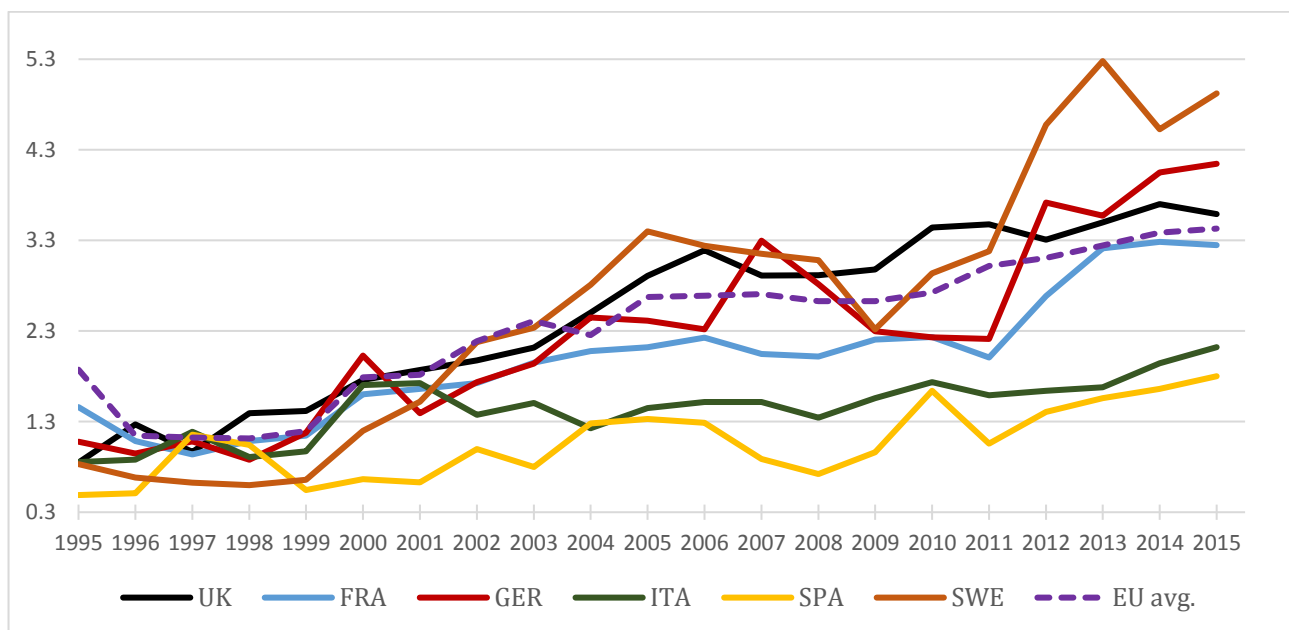
Source: authors' calculation based on Worldscope data.

The evidence from our sample is of a continual fall in the rate of invested profits in both the EU14 pool and selected major economies.

In the period considered, the highest fall is in Sweden (49%), the UK (32%), and Italy (28%). French and German NFCs experience a similar magnitude (19%), whilst Spanish NFCs experienced the smallest decline (5%). Overall, the slowdown has been remarkable in Europe, with 32% decline in the re-investment rate on average. A common feature of the last twenty years has been a reduction in the reinvestment of profit of NFCs in all major economies.

One of the evidences in the financialization literature is that NFCs have been engaging in non-operating activities, i.e. accumulating financial assets, to an increasing extent. As can be seen in Figure 2, in general the ratio of financial assets to fixed assets clearly increased albeit with some differences: on average in the EU14, the ratio increased by 93%. The NFCs in Sweden, The UK and Germany experienced the strongest rise in this ratio (423%, 324%, and 285% respectively). The NFCs in Spain and France experience a relatively more modest increase (268% and 225%), whilst the lowest rate of increase is in the NFCs in Italy (149%). To summarize, this preliminary descriptive analysis suggest that, in general, NFCs diverted funds from real investment towards the accumulation of non-operating financial assets.

Figure 2. Financial assets/fixed assets (FA/K), NFCs, EU14 pool and selected countries, 1995-2015

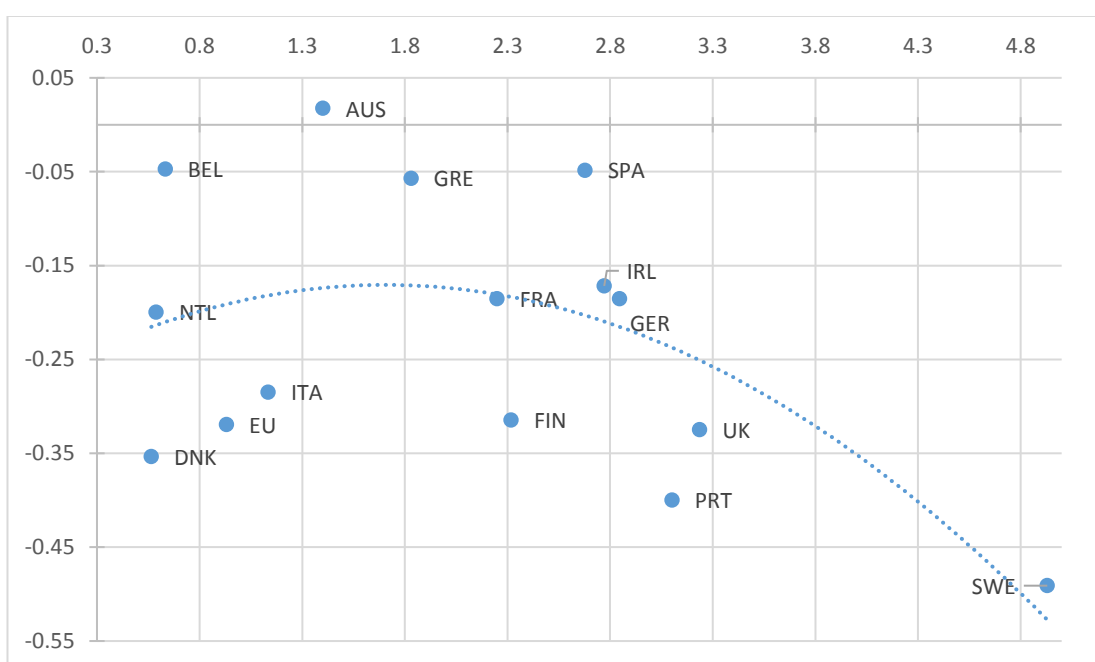


Source: authors' calculation based on Worldscope data

One common way to explore the relationship between the trends showed in Figures 1 and 2, is to plot them together using basic descriptive analysis. In figure 3, all 14 countries' changes in the rate of reinvestment and growth in accumulation of financial assets from 1995 to 2008 are

plotted together. A first evidence is the considerable heterogeneity among countries. On the one hand, despite growing financial assets, for some countries the NFCs' rate of reinvestment did not decline significantly (Belgium, Austria, Greece, and Spain). On the other hand, NFCs in countries like France, Finland, Germany, the UK, and especially Sweden, show a clearer negative relationship between these two measures. The polynomial tendency line in Figure 3 shows an interesting result: the negative relationship between NFCs' investment and financialization (here merely conceived as accumulation of financial assets) could be non-linear.

Figure 3. The relationship between the change in reinvested profits (I/π), and the change in the accumulation of financial assets (FA/K), NFCs, EU14 countries, 1995-2007

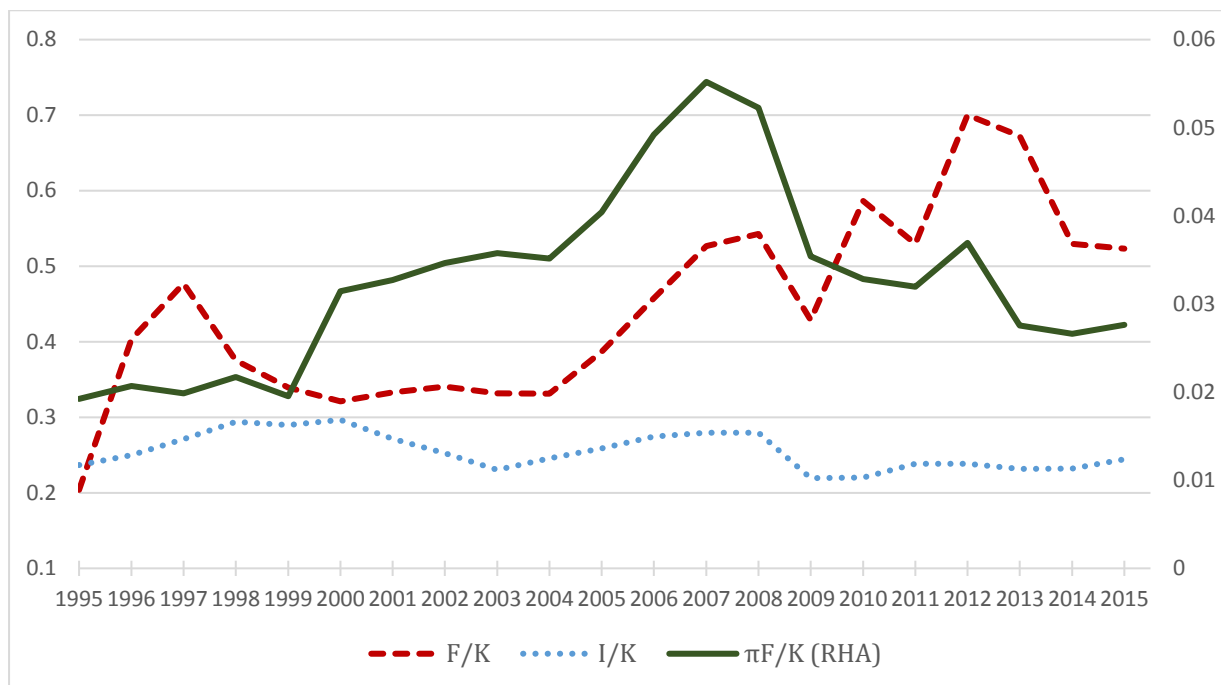


Source: authors' calculation based on Worldscope data

Focusing on the aggregate European sample (Figure 4), during the period considered the NFCs' rate of accumulations (I/K) have been stagnant around an average value of 0.24. At the same time, NFCs' financial payments (dividends plus interests) have been increasing significantly. With respect to the level of non-operating incomes (as a ratio to fixed assets), European NFCs experience a sharp increase in this ratio before the crisis (200%). The 2007-8 crisis has led to a reversal in the NFCs' financial incomes, although they are slowly recovering towards the levels of the early 2000s. Figures 5 to 10 show the relationship between the rate of accumulation of physical

capital and our two measures of financialization - financial payments and incomes as a ratio to total assets- to analyse the double-sided impact of financialization.⁹⁴

Figure 4. Additions to fixed assets/Fixed Assets (I/K), total financial payments (F/K), and total financial profits ($\pi F/K$), NFCs, EU14 pool, 1995-2015



Source: authors' calculation based on Worldscope data

In the UK (figure 4), the rate of accumulation has remained stagnant around an average of 0.25 for the whole period, and the reinvested profits declined. In sharp contrast, the stock of financial assets increased substantially, reaching 3.6 times higher than fixed assets in 2015. This substantial involvement in the accumulation of financial assets resulted in increasing non-operating income for the NFCs until the 2007-2008 crisis. Financial payments of the NFCs in the form of interests on debt and dividends paid to the shareholders increased substantially since the mid-1990s, also partially recovering from a decline during the crisis period.

Also in France (figure 5) the rate of accumulation of NFCs remained stagnant around 0.31. In contrast, in the last twenty years financial payments increased substantially, reaching 33% of fixed assets. Also financial incomes increase, peaking in 2008 when they represented 4% of fixed assets. After the crisis, these incomes stabilized around the levels of the mid-1990s.

In Germany, NFCs experience decreasing rate of accumulation, which dropped by 50% in the period considered (figure 6). At the same time, financial payments increased by almost 80%, without being seriously affected by the crisis.

⁹⁴ In the Appendix, figures from 12 to 19 show the same trends for minor countries.

Figure 5. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits (π_F/K), NFCs,UK

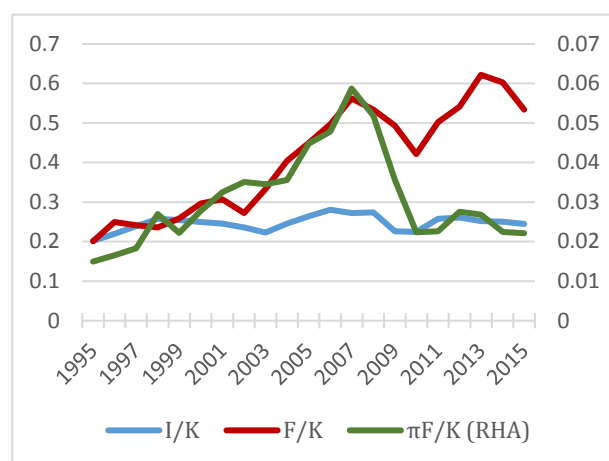


Figure 6. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits (π_F/K), NFCs,France

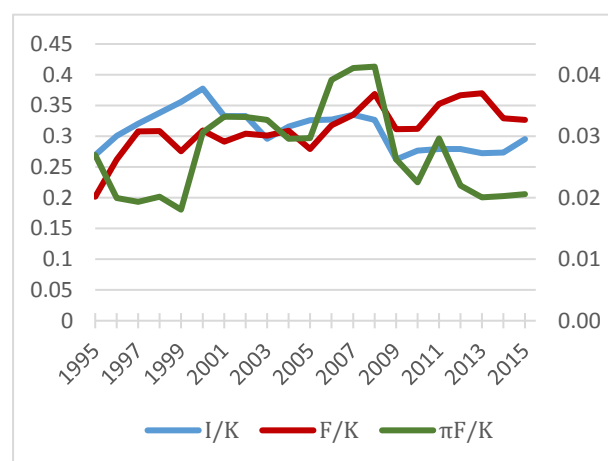


Figure 7. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits (π_F/K), NFCs,Germany

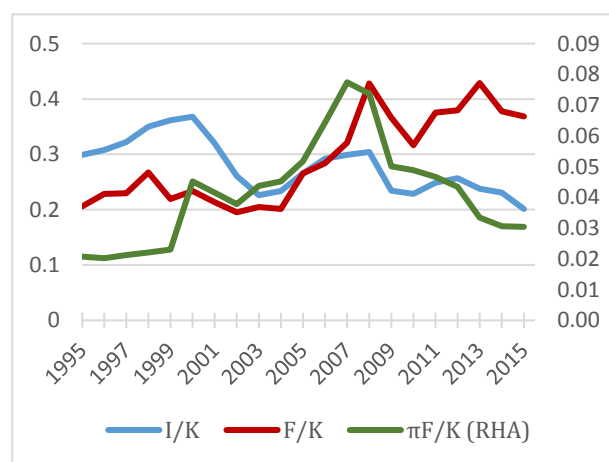


Figure 8. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits (π_F/K), NFCs,Italy

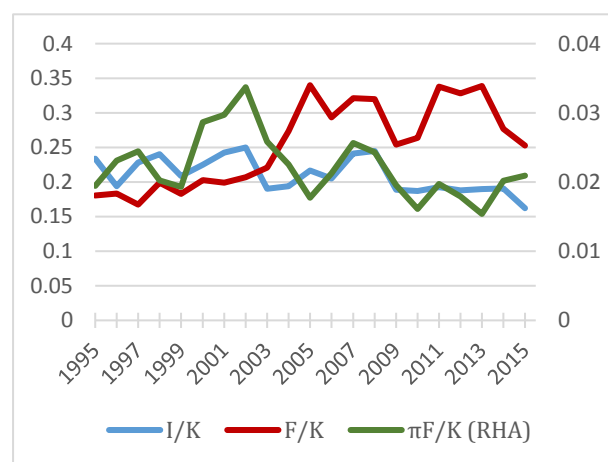


Figure 9. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits (π_F/K), NFCs,Spain

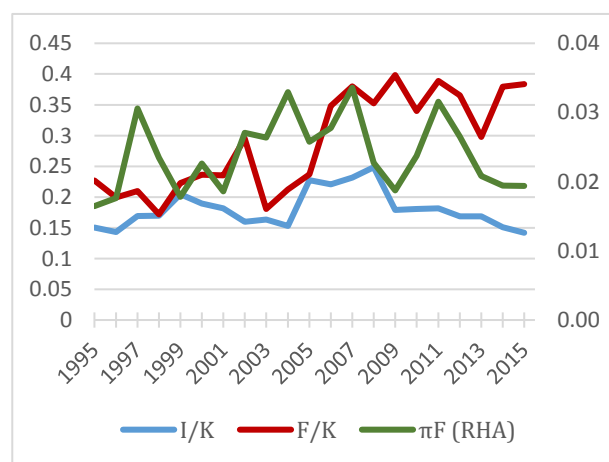
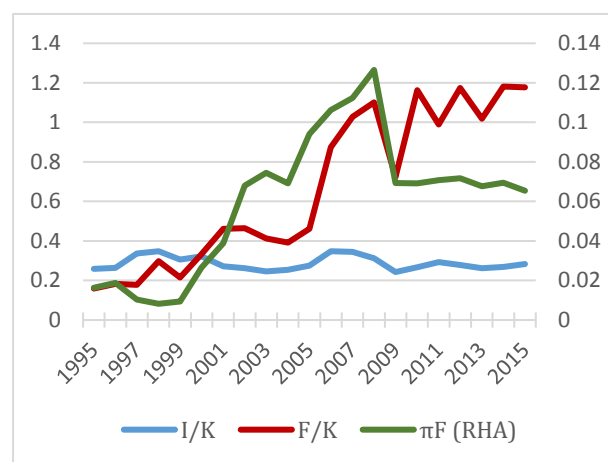


Figure 10. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits (π_F/K), NFCs,Sweden



Source: authors' calculation based on Worldscope data.

As for the NFCs in the UK and France, also in Germany corporations have seen their financial incomes increasing before the crisis, here peaking in 2007 at a value of 8% of fixed assets.

Also NFCs in Italy experience a declining rate of accumulation (-30%), along with an increase in financial payments, although the trend in the latter is relatively modest in comparison to other countries analysed above (figure 7). Financial incomes reached the highest value in 2002 (3.3% of fixed assets) and after that stabilized around 2%, without being too much affected by the crisis.

In Spain, NFCs' rate of accumulation stagnated around the average value of 0.18, slightly declining in the last twenty years (-7%). Financial payments increased particularly in the mid-2000s and, almost unaffected by the economic downturn, they stabilized at a value of 40% as a ratio to fixed assets (figure 8). Financial incomes had a volatile trend, increasing by 19% in the full period.

From the analysis of stylized facts, Swedish NFCs appear to be the most severely involved in the process of financialization (figure 9). Along with a stagnant average rate of accumulation of 0.29 (and a decreasing rate of re-investment), accumulated financial assets reached the value of more than 5 times as a ratio to fixed assets. Also financial payments increased substantially and, after a decrease in 2008, fully recovered stabilizing around a value of 100% of fixed assets. Financial incomes have a trend similar to the one of financial payments, although after the 2007-8 crisis the former normalized around 7% of fixed assets. Nonetheless, this represents the highest value across the six main European economies.

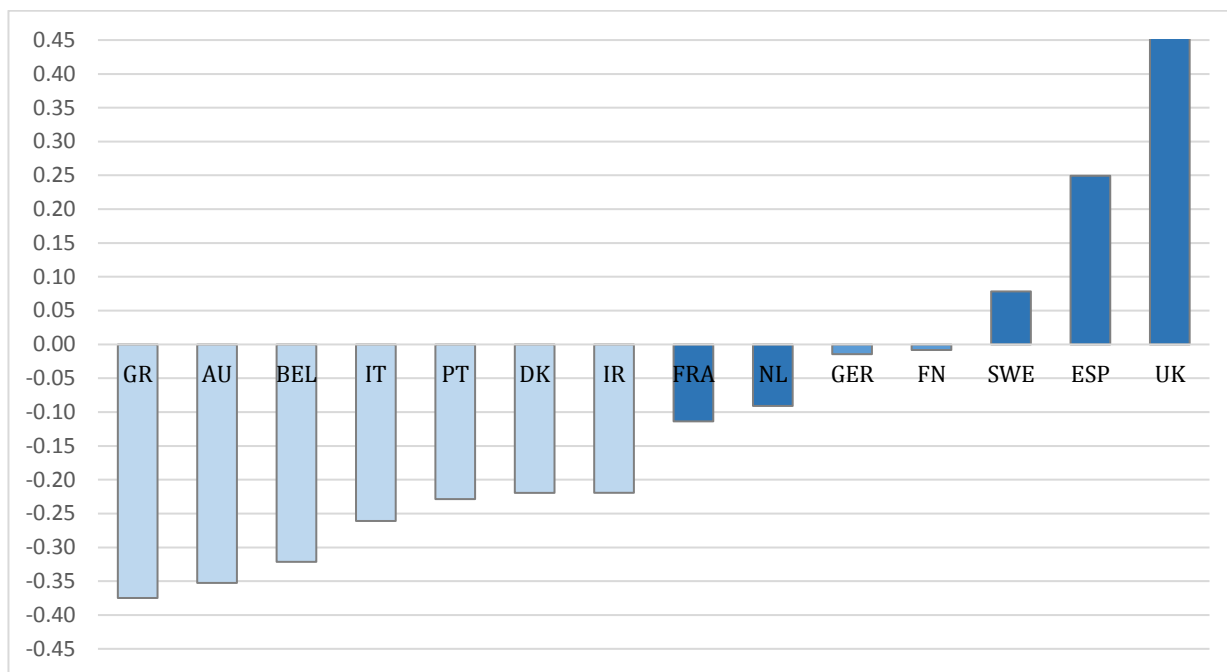
The FD index is a combination of standardized measures of five components, namely market capitalization over GDP, total value traded over GDP, total value traded over market capitalization, ratio of liquid liabilities to GDP, and credit to the private sector over GDP.⁹⁵

As seen in section 4.4, the FD index is the sum of Index 1 and Findex 1 from Demirguc-Kunt and Levine (1996) and Beck et al. (2000). Index 1 summarizes the stock market development whilst Findex1 account for the financial intermediary development. Tables 11 and 12 in the appendix shows the intermediate values for the two indexes as well as the actual values for the aggregated FD. The source of these variables is the Global Financial Development Database (GFDD) of the World Bank. At the time of the analysis the data series of the components of the FD were available until 2011. We computed the averages for the period 1995-2007 to avoid the bias in the measure caused by the 2007-8 financial crisis. Following the methodology used in Demirguc-Kunt and Levine (1996), we split the European countries into two groups, to which we

⁹⁵ One of the limitations of this index is that it does not take into account NFCs' corporate bonds issuance.

refer as countries with ‘high’ and ‘low’ FD, according to their median FD value from 1995 to 2007. Figure 11 below shows the different standardized values of FD for the countries included in our sample.

Figure 11. Financial development index (averages 1995-2007)



Source: authors' calculation based on World Bank data, Global financial development database

The resulting countries with relative highly developed financial system are the UK, Spain, Sweden, Germany, the Netherlands, and France; countries with relative low developed financial system are Ireland, Denmark, Portugal, Italy, Belgium, Austria, and Greece. It has to be noted that the classification described above is relative, and conditional on both the standardization process and the average level of FD computed among the countries included in the sample.

5.4 Summary

In this chapter we presented our data source, highlighting the peculiarities that permit us to have consistent measures of companies' financial flows. With respect to the descriptive empirical analysis, the stylized facts show a) a stagnant or declining rates of accumulation, b) declining rates of reinvestment of operating income, c) an increase in the overall degree of financialization in terms of financial assets, financial incomes as well as financial payments both in the EU14 pool as well as in the major economies d) the presence of non-linearity with respect to the relationship between the level of financialization and investment e) a certain degree of heterogeneity among countries. These stylized facts suggest an overall negative relationship between the rate of accumulation and the non-operating financial activities of NFCs, which will be investigated further via econometric estimations. The next chapter presents the results of our econometric estimations.

CHAPTER 6. Results.

6.1 Introduction

In this chapter, we provide new empirical evidence on the impact of non-operational activities (profits from financial investments) and financial payments (interest plus dividends) on the physical investments in publicly listed non-financial companies in the Western European member states (EU14), during the period 1995-2015. We perform a dynamic panel-data analysis using firm-level balance sheet data from the Worldscope database supplied by Thomson Reuters. Using the Generalized Methods of Moments, we test the relative importance of traditional explanatory variables such as operating income, sales, and stock market evaluation in determining the investment level. In addition, we propose an extended model of investment determination taking into account companies' non-operating activities, namely financial incomes and payments to the financial markets, also quantifying the impact of financial development. Section two describes our findings both at the aggregate and at country level. Section three focus on our findings when the aspect of financial development is included as a macroeconomic 'control' variable. Section four presents the economic effects of financialization on investment in Europe, proving a powerful tool to consistently quantify and compare our estimated effects. Section five summarises the chapter, also providing brief comparison of our findings with the key available evidence.

6.2 The effect of financialization on investment in Europe

Table 1 presents the results for the EU14 pool based on the estimation of equation (1). As can be seen in column 1, the lagged level of accumulation, sales, and net operating profit have positive effects on investment, as expected. Aggregated financial payments (dividends and interest) have a significant and negative effect on the rate of accumulation. The impact of non-operating financial incomes (π_F/K) on investment is also negative and significant. The change in the level of indebtedness had an additional negative effect on investment. These results are robust to the inclusion of Tobin's Q as an additional control variable, which has the expected positive sign. The results indicate that financialization has negatively affected NFCs' capital accumulation in Europe. The results are consistent with previous research showing that there is a widespread common tendency in investment and the negative impact of financialization in both developed and developing countries (e.g. Orhangazi, 2008b; Demir, 2007, 2009). Column 2 presents the results for the same equation but using the sample just until the 2007 crisis, as a further check. Overall, the results are robust, with an increase in the negative effect of financial payments (F/K). However, the variable measuring internal funds ($\pi-CD$) is becoming insignificant.

Table 1. Estimation results, EU 14, dependent variable $(I/K)_t$

| Variable | (1) ^I | (2) ^{II} | (3) ^{III} |
|--|----------------------|----------------------|----------------------|
| $(I/K)_{t-1}$ | 0.299*** (0.050) | 0.321*** (0.042) | 0.306*** (0.050) |
| $(I/K)_{t-2}$ | -0.059** (0.024) | | -0.057** (0.028) |
| $(S/K)_{t-1}$ | 0.303*** (0.074) | 0.225*** (0.081) | 0.219*** (0.055) |
| $(S/K)_{t-2}$ | 0.596*** (0.207) | 0.350** (0.177) | 0.416** (0.181) |
| $[(\pi - CD)/K]_{t-1}$ | 0.030*** (0.010) | 0.005 (0.012) | 0.034*** (0.010) |
| $[(\pi - CD)/K]_{t-1} * D_{20}$ | | | 0.045 (0.031) |
| $(\pi_F/K)_{t-1}$ | -0.070*** (0.026) | -0.071** (0.029) | -0.067** (0.029) |
| $(\pi_F/K)_{t-2}$ | -0.032** (0.015) | -0.031* (0.018) | -0.047** (0.020) |
| $(\pi_F/K)_{t-1} * D_{20}$ | | | 0.098** (0.042) |
| $(\pi_F/K)_{t-2} * D_{20}$ | | | 0.176** (0.073) |
| $(F/K)_{t-1}$ | -0.122*** (0.046) | -0.155*** (0.059) | -0.049*** (0.018) |
| $(F/K)_{t-2}$ | -0.112*** (0.043) | -0.099** (0.045) | |
| $(F/K)_{t-2} * D_{20}$ | | | -0.141** (0.063) |
| $\Delta(TD/TA)_{t-1}$ | -0.031*** (0.010) | -0.025** (0.012) | -0.016* (0.009) |
| $(Q)_{t-1}$ | 0.117* (0.067) | 0.155** (0.067) | 0.149*** (0.033) |
| <i>Number of Observations</i> | 25726 | 12551 | 25726 |
| <i>Number of Firms</i> | 2881 | 2201 | 2881 |
| <i>Number of Instruments</i> | 36 | 29 | 36 |
| <i>p-value Hanses test</i> | 0.749 | 0.345 | 0.159 |
| <i>p-value A-B test (AR 2)</i> | 0.607 | 0.348 | 0.445 |
| <i>Time effects</i> | yes | yes | Yes |
| <i>p-value Wald test for time effects</i> | 0.001 | 0.000 | 0.003 |
| <i>p-value $[(\pi - CD)/K]_{t-1} + [(\pi - CD)/K]_{t-1} * D_{20}$</i> | | | 0.009 |
| <i>p-value $(\pi_F/K) + (\pi_F/K)_{t-1} * D_{20}$</i> | | | 0.051 |
| <i>p-value $(F/K)_{t-1} + (F/K)_{t-1} * D_{20}$</i> | | | 0.003 |

Weighted regression (w=1/total country obs.). I and II specifications based on Equation (1), III specifications based on Equation (2), two-step difference-GMM estimations. Coefficients for the year dummies are not reported. Robust corrected standard error in parenthesis. * significant at 10%, ** significant ant 5%, *** significant at 1%.

As already discussed, theoretically the sign of the effect of non-operating income on physical accumulation is ambiguous. On the one hand, relatively smaller companies may use this

additional source of income to partially ease liquidity constraints. On the other hand, the larger and more flexible non-financial companies may see short-term and reversible financial investment as an attractive alternative to physical investment. This choice may then come at the expense of long-term physical investment, and thus has an adverse effect on the rate of accumulation of these large corporations. We explored this possible dual, non-linear effect, by including an interaction dummy variable to account for the potentially different effect of financial incomes with respect to the size of the company (in terms of total assets). In these alternative specifications as described in Equation (2) in Section 3.3, the coefficient associated with the variable π_F/K show the effect of companies in the different top percentiles of the distribution. To compute the elasticity for the remaining companies we sum the coefficient for $(\pi_F/K)*D_n$ with the coefficient for π_F/K , and then check for statistical significance of the new measure with a Wald test. The evidence suggests that negative impacts of financial incomes are non-linear with respect to the companies' size. In this table, we present the result after the inclusion of a dummy that is 0 if the company lies in the top 80% and 1 if it is in the lowest 20% of the distribution in terms of total assets. These results are reported in column 3 of Table 1. There is a statistically significant difference between the large and small companies with respect to the impact of financial incomes. In particular, top 80% companies in terms of size experienced a strong negative effect of financial incomes (-0,114), whilst for the part of the sample lying in the lowest 20% this effect has been positive (0.160). On the contrary, the negative effect of financial payments is stronger in relatively smaller firms (-0.190 vs. -0,049). Financial incomes crowded-out physical investment for the top 80% of the companies whilst smaller companies' investments suffer more from financial payments. Given these results, we can conclude that financial incomes are negatively affecting NFCs' rate of accumulation in Europe, although there is a positive effect for relatively smaller companies.

In Table 2, we present the estimation results based on equation (1) for selected countries, for which the number of firms is large enough.⁹⁶ In Table 7 in the Appendix we provide single country estimations for the remaining countries. Given the lack of observations, we report these results as suggestive, thus they should not be taken as robust evidence. We kept the specification including Tobin's Q whenever it was significant. As expected there is a positive effect of lagged rate of accumulation, sales and retained earnings (although the latter effect is not statistically robust across countries).

⁹⁶ The choice of the selected countries has been informed by data availability. In fact, the dynamic GMM estimator suffer from small sample bias, and estimation based on relatively low number of observations (or groups) should not be trusted. In Table 3a we provide information about the percentage of total companies in the low 20% and top 30% of the total assets distribution by country (see columns *e* and *f*). Even though smaller companies are underrepresented, the share of companies in these two groups is similar across countries (with the partial exception of Spain where the difference in the share of NFCs in the low 20% and in the top 30% is around 22%).

Table 2. Estimation results, selected countries, 1995-2015, dependent variable $(I/K)_t$

| | <i>UK</i> | <i>SWE</i> | <i>GER</i> | <i>SPA</i> | <i>ITA</i> | <i>FRA</i> |
|---|----------------------|---------------------|----------------------|----------------------|---------------------|----------------------|
| $(I/K)_{t-1}$ | 0.409*** (0.029) | 0.283*** (0.065) | 0.393*** (0.101) | 0.457*** (0.066) | 0.275*** (0.041) | 0.280*** (0.046) |
| $(S/K)_{t-1}$ | 0.310*** (0.061) | 0.224** (0.108) | 0.731* (0.374) | 0.461*** (0.177) | 0.256** (0.124) | 0.513*** (0.086) |
| $[(\pi - CD)/K]_{t-1}$ | 0.023* (0.013) | | 0.025 (0.020) | 0.011 (0.034) | 0.055* (0.029) | |
| $[(\pi - CD)/K]_{t-2}$ | | 0.121* (0.065) | | | | 0.016 (0.029) |
| $(\pi_F/K)_{t-1}$ | -0.036** (0.016) | -0.107** (0.049) | -0.062* (0.033) | | -0.033* (0.020) | -0.094*** (0.023) |
| $(\pi_F/K)_{t-2}$ | | -0.059** (0.025) | | -0.053** (0.025) | | -0.040*** (0.015) |
| $(F/K)_{t-1}$ | -0.091*** (0.017) | -0.026 (0.030) | | -0.383*** (0.100) | 0.003 (0.049) | -0.130** (0.062) |
| $(F/K)_{t-2}$ | | | -0.063*** (0.021) | | | |
| $(Q)_{t-1}$ | 0.172*** (0.028) | | | | | 0.226*** (0.074) |
| $(Q)_{t-2}$ | -0.059*** (0.020) | | | | | |
| <i>Number of Observations</i> | 9481 | 1998 | 3438 | 1039 | 1456 | 3557 |
| <i>Number of Firms</i> | 915 | 231 | 400 | 116 | 176 | 417 |
| <i>Number of Instruments</i> | 30 | 32 | 38 | 30 | 33 | 35 |
| <i>p-value Hansen test</i> | 0.184 | 0.451 | 0.262 | 0.411 | 0.427 | 0.523 |
| <i>p-value A-B test (AR 2)</i> | 0.170 | 0.613 | 0.193 | 0.320 | 0.874 | 0.165 |
| <i>Time effects</i> | Yes | yes | yes | yes | yes | yes |
| <i>p-value Wald test for time effects</i> | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | 0.001 |

All specification based on Equation (1), two-step difference-GMM estimations. Coefficients for the year dummies are not reported. Robust corrected standard error in parenthesis * significant at 10%, ** significant ant 5%, *** significant at 1%.

The negative crowding-out effect of financial incomes is a robust significant finding in all countries. Even though a straight comparison between estimates maybe statistically distorted, we find the strongest negative effect of non-operating income in the NFCs in Sweden and France (-0.17 and -0.13 respectively). Our other financialization variable, i.e. financial payments have a negative effect on NFCs' investment in all countries apart from Italy and Sweden, where we did not find significant effect. Overall, these single country estimations confirm our previous findings of a negative impact of both financial incomes and payments on NFCs' rate of accumulation. In addition, at the aggregate level the negative effect of financial incomes is common to countries with different levels of FD.⁹⁷

6.3 Financial development and financialized investment in Europe

Table 3 presents the results based on equations (3) and (4). With these estimations, we aim at contributing to the literature on the impact of financial development on growth, by exploring the effect of the development of the financial system on European NFCs' physical investment. As we have seen before, the conventional argument within this literature is that FD has a general positive effect on economic growth. In particular, FD is good for companies' investment given an enhanced allocation of resources (Levine, 2005) and reduced cash-flow constraints (Love and Zicchino, 2006). However, to the best of our knowledge, none of the available literature takes into account the novel features of NFCs' investment behaviour, i.e. their growing non-operational financial activities.

Column 1 of Table 3 shows the results for specification (3) for the EU14 pool. Here we interacted NFCs' financial incomes (π_F/K) with a dummy that takes value 1 if company i is based in a country characterized by a low FD index, and zero otherwise. In order to better characterize our specification, we interacted also retained earnings, financial payments, and change in total debt with the same dummy, and the interpretation is the same.

Similar to the results presented in Table 1, the positive effects of the lagged rate of accumulation, sales, and retained earnings are confirmed. In addition, we find that the effect of retained earnings is significantly stronger in companies operating in an environment with relatively low financial development (0.59 vs. 0.04). This is confirming previous findings on the positive effect of FD in easing NFCs' financing constraint (see especially Love, 2003 and Love and Zicchino, 2006). With respect to the interacted effect of financial incomes, we find that for companies based in countries with high FD the effect is highly negative (-0.27). On the contrary, a lower degree of FD is associated with a positive, yet small, effect of financial incomes on investment (0.08). In addition, the negative effect of financial payments on NFCs' accumulation is more than triple in less financially developed, i.e. more financially constrained, countries (-0.22

⁹⁷ For a deeper analysis of the effect of financialization on the UK NFCs' investment, see Tori and Onaran (2015). For additional evidence at the international level, see Tori and Onaran (2016).

vs. -0.07). In addition, companies in country with lower FD experienced a stronger negative effect of indebtedness (-0.09 vs. -0.02).

Column 2 of Table 3 shows the results for the same estimation for the period 1995-2007. Even though the sign of the various effects is the same, the positive effect of financial incomes for companies in countries with low FD is higher with respect to the full period (0.123 vs. 0.04). In addition, in the period prior to the crisis, the levels of investment of these companies were slightly benefiting from the positive change in total debt (0.026).

Column 3 of Table 3 presents the results obtained by estimating equation (4). In this exercise, we introduced both our size-dummies and FD-dummies, to test for the differences in the impact of financial incomes with respect to size of the companies in the context of different levels of FD. The signs of the lagged dependent variable and sales are consistent with what discussed before. Operating income had a small positive effect for companies in countries with high FD, whilst its effect is larger for companies in countries with low FD. This can be seen a further confirmation of the highest financial constraint experienced by companies based in an environment with less developed provisions of financial services. Interestingly, when disaggregating by size and level of FD at the same time a) the crowding-out effect of financial incomes on investment is negative in both large and small companies with high FD b) it is positive for both small companies and larger ones, in countries characterized by low FD. However, the Wald test is suggesting that the positive effect for larger companies in countries with low FD is close to zero. With respect to the variable for financial payments, the estimated effect on investment is significant and negative only for larger companies, both in countries with low or high levels of FD. Smaller companies seem not to suffer from the SVO and from the potential negative impact of the cost of capital.

As before, Column 4 of Table 3 presents the results for the estimation of the same specification for the pre-crisis period. The positive effect of financial incomes for larger companies in countries with low FD founded for the full period (1995-2015), is now turning insignificant. This effect is still positive and significant for smaller companies in the same sample group. The insignificant effect of financial payments on smaller companies is confirmed also for the period before the 2007 crisis. Furthermore, given the *p-value* of the Wald test (0.329), in this period the effect of debt over total assets for companies with low FD has been insignificant.

Table 3. Estimation results: Financialization and financial development, EU14, dependent variable (I/K)

| | (1) ^I | (2) ^{II} | (3) ^{III} | (4) ^{IV} |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| $(I/K)_{t-1}$ | 0.304 ^{***} (0.043) | 0.372 ^{***} (0.038) | 0.326 ^{***} (0.040) | 0.328 ^{***} (0.042) |
| $(I/K)_{t-2}$ | -0.054 ^{**} (0.022) | | -0.050 ^{**} (0.021) | |
| $(S/K)_{t-1}$ | 0.238 ^{***} (0.053) | 0.184 ^{***} (0.082) | 0.210 ^{***} (0.049) | 0.218 ^{***} (0.082) |
| $(S/K)_{t-2}$ | 0.176 ^{**} (0.085) | | 0.192 ^{**} (0.080) | 0.096 ^{**} (0.044) |
| $[(\pi - CD)/K]_{t-1}$ | 0.037 ^{**} (0.016) | 0.011 [*] (0.005) | 0.038 ^{***} (0.009) | 0.015 [*] (0.009) |
| $[(\pi - CD)/K]_{t-1} * D_{LFD}$ | 0.556 ^{**} (0.218) | 0.221 [*] (0.118) | 0.451 ^{**} (0.201) | 0.275 ^{**} (0.132) |
| $(\pi_F/K)_{t-1}$ | -0.156 ^{***} (0.038) | -0.132 ^{***} (0.038) | -0.142 ^{***} (0.035) | -0.158 ^{***} (0.042) |
| $(\pi_F/K)_{t-2}$ | -0.111 ^{***} (0.029) | -0.099 ^{***} (0.026) | -0.101 ^{***} (0.027) | -0.083 ^{***} (0.030) |
| $(\pi_F/K)_{t-1} * D_{LFD}$ | 0.180 ^{***} (0.043) | 0.167 ^{***} (0.046) | 0.148 ^{***} (0.037) | 0.162 ^{***} (0.050) |
| $(\pi_F/K)_{t-2} * D_{LFD}$ | 0.163 ^{***} (0.048) | 0.187 ^{***} (0.049) | 0.150 ^{***} (0.045) | 0.140 ^{**} (0.055) |
| $(\pi_F/K)_{t-1} * D_{20}$ | | | 0.081 ^{***} (0.031) | 0.104 ^{**} (0.047) |
| $(F/K)_{t-1}$ | -0.068 ^{***} (0.026) | -0.081 [*] 0.044 | -0.062 ^{***} (0.020) | -0.107 [*] (0.060) |
| $(F/K)_{t-1} * D_{LFD}$ | -0.152 ^{***} (0.054) | -0.050 (0.036) | -0.143 ^{***} (0.052) | -0.079 ^{**} (0.031) |
| $(F/K)_{t-1} * D_{20}$ | | | 0.078 [*] (0.047) | 0.287 (0.204) |
| $\Delta(TD/TA)_{t-1}$ | -0.016 ^{**} (0.007) | -0.030 ^{***} (0.008) | -0.015 ^{**} (0.007) | -0.029 ^{***} (0.009) |
| $\Delta(TD/TA)_{t-1} * D_{LFD}$ | -0.070 ^{***} (0.025) | 0.056 ^{***} (0.021) | -0.072 ^{***} (0.028) | 0.048 ^{**} (0.021) |
| $(Q)_{t-1}$ | 0.182 ^{***} (0.031) | 0.157 ^{**} (0.034) | 0.170 ^{***} (0.031) | 0.113 ^{***} (0.033) |

(Table 3 continued to next page)

Table 3 (continued)

| | (1) ^I | (2) ^{II} | (3) ^{III} | (4) ^{IV} |
|---|------------------|-------------------|--------------------|-------------------|
| <i>Number of Observation</i> | 25726 | 14672 | 25726 | 14672 |
| <i>Number of Firms</i> | 2881 | 2330 | 2881 | 2330 |
| <i>Number of Instruments</i> | 46 | 44 | 48 | 44 |
| <i>p-value Hanses test</i> | 0.281 | 0.494 | 0.237 | 0.378 |
| <i>p-value A-B test (AR 2)</i> | 0.244 | 0.496 | 0.239 | 0.413 |
| <i>Time effects</i> | yes | yes | yes | yes |
| <i>p-value $[(\pi - CD)/K]_{t-1} +$ $[(\pi - CD)/K]_{t-1} * D_{LFD}$</i> | 0.008 | 0.049 | 0.019 | 0.028 |
| <i>p-value $(\pi_F/K) + (\pi_F/K)_{t-1} *$ D_{LFD}</i> | 0.013 | 0.001 | 0.075 | 0.123 |
| <i>p-value $(F/K)_{t-1} + (F/K)_{t-1} *$ D_{LFD}</i> | 0.000 | 0.027 | 0.000 | 0.009 |
| <i>p-value $(TD/TA)_{t-1} +$ $(TD/TA)_{t-1} * D_{LFD}$</i> | 0.001 | 0.182 | 0.003 | 0.329 |
| <i>p-value $(\frac{\pi_F}{K}) + (\pi_F/K)_{t-1} * D_{20}$</i> | | | 0.002 | 0.065 |
| <i>p-value $(\frac{\pi_F}{K}) * D_{20} +$ $(\pi_F/K)_{t-1} * D_{LFD}$</i> | | | 0.000 | 0.000 |
| <i>p-value $(F/K)_{t-1} + (F/K)_{t-1} *$ D_{20}</i> | | | 0.702 | 0.328 |
| <i>p-value $(F/K)_{t-1} * D_{20} +$ $(F/K)_{t-1} * D_{LFD}$</i> | | | 0.293 | 0.302 |

Weighted regression (w=1/total country obs.). I and II specifications based on Equation (3), III and IV specifications based on Equation (4), two-step difference-GMM estimations. Coefficients for the year dummies are not reported. Robust corrected standard error in parenthesis. * significant at 10%, ** significant ant 5%, *** significant at 1%.

6.4 Discussion about robustness tests

We performed several tests to assess the robustness of our different estimations. First, we estimated the different specifications using different measures for the operating income, which appear to be the less robust variable across the results (also at country level). First, we introduced the operating income minus depreciation to take into account the additional potential effect of technological change. Second, we introduced after-tax operating income to avoid potential bias generated by idiosyncratic taxation systems in Europe. Third, we also used earnings before interest and taxes (EBIT) as well as earnings before interest, taxes depreciation and amortization (EBITDA) as alternative variables for companies' revenues. In general, all these alternatives did not add explanatory power/significance to the estimated specifications and, in most of the cases, introduced collinearity bias with respect to the other control variables (especially in the case of 'sales over fixed capital'), which turned insignificant.

As previously discussed, the phenomenon of share buybacks could be another interesting aspect of financialization to be analysed. We also performed an estimation with the inclusion of the value of companies' share buybacks as an additional measure of financialization. Given the reduction in the sample due to a lack of data availability with respect to this variable, the explanatory power of the estimated model was not adequate. More importantly, this variable

resulted statistically insignificant across different specifications. In addition, the decision to buy back share (thus reducing the amount equity outstanding) could be also to modify the capital structure of the company (i.e. the relative proportions of equity and debt) for purposes that differ from a mere search for positive pressure on the share prices.

With respect to the effect of debt, we estimated using only short-term debt, and only long term debt instead of the total debt in the final selected specifications. In addition, when introducing a variable built as total debt (or the two abovementioned portions) over fixed capital, this variable was never significant.

With respect to the selection of the sample itself, the use of a weighted regressions, plus the single countries estimations, have been important steps to check for the overall consistencies of our results based on the full European sample.

6.5 Economic effects of financialization in Europe

This section is devoted to the economic significance of our estimates. We compute the long-run elasticities by dividing each short-run elasticity by one minus the coefficient of the lagged dependent variable. Multiplying the long-run coefficient by the actual cumulative change in each variable for the estimation period, we get the corresponding economic effect. We computed the economic effects based on elasticities estimated for the period 1995-2007, thus excluding the crisis.

First, the economic effect based on estimation of the basic specification (I) will be presented and discussed. Second, the economic effects for specification (4) are presented, which highlight the different patterns arising when disaggregation in terms of size and financial development are introduced.

Sales (capacity utilization) have been the main determinant of accumulation in all countries with high FD, with an average economic effect of 0.26. Among countries with high FD, Sweden had the highest contribution of Sales (0.536), whilst Spain had the lowest one (0.04). Given a higher long run coefficient of operating income for countries with low FD (0.37), internal funds have been the main determinant in this group.

The average economic effect of operating income (excluding Greece for which long run coefficient is positive but the actual cumulative change has been negative) is 0.35, with the lowest value in Portugal (0.06) and the highest one in Belgium (0.53).

The comparison of the economic effects of Sales and Operating income in contexts with different levels of FD shows that NFCs' investment are relatively more demand-constrained when FD is high, while relatively more liquidity-constrained in countries with lower level of FD. At the country level, the crowding-out effects of financial incomes on investment (inward financialization), is confirmed for NFCs in countries with high level of FD. With a long run elasticity of -0.37, and an average cumulative change of 1.044 in the period considered, the average

economic effect has been equal to -0.38. Sweden and the UK experienced the two highest negative effects (respectively -0.71 and -0.50), whilst NFCs' investment in Spain and France suffered relatively less from crowding-out (respectively -0.26 and -0.16).

On the contrary, we found that financial incomes provided additional funds for NFCs based in the group of country with relatively low FD. However, this positive effect has been small in most of the countries. This is mainly due to an average cumulative change of 0.34, which is three times lower than the changes in countries with high FD. The average positive economic effect has been equal to 0.07, whilst NFCs' investment in Portugal as the main beneficiaries of financial receipts (0.26). The adverse economic effect of financial payments (outward financialization) is generally consistent in both countries with high and low FD. However, in this case the NFCs in countries with lower level of FD experienced the strongest negative effect of financial payments (interests plus dividends), with an average effect of -0.18. This effect has been low in general in countries with high FD, (-0.17), with again Sweden and UK as the most negatively affected countries (-0.24 and -0.13 respectively).

As it is clear from the last column of Table N, the effect of the change in indebtedness on investment has been zero in countries with low FD (due to an insignificant estimated elasticity and thus long-run coefficient). Also in NFCs experiencing higher level of FD, this effect is not large, though negative in the majority of these countries (the exceptions are Finland and Sweden). This is due to both a small long run coefficient (-0.05) and actual cumulative changes (except from Sweden and the UK)

Table N presents the computation of long run elasticities and economic effects from Table 2 Column 4. Here the economic impacts of our two measures of financialization (and indebtedness) are disaggregated to account for the roles of companies' sizes and of the different levels of financial development.

In line with the previous discussion on economic effects, also in this case sales have been the main determinant of NFCs investment in countries with high level of FD (except Belgium), whilst operating income played a less important role. Differently with the previous model, in countries with lower FD the demand and the internal finance measures had a similar importance for these NFCs' investment. Notwithstanding this, the stronger liquidity constraint experienced by companies in countries with relatively lower FD is confirmed also by this estimation.

Table 4. Economic effects by country, disaggregation by level of FD 1995-2007.

| Country | FD | S/K | | | π/K | | | π_f/K | | | F/K | | | $\Delta TD/TA$ | | |
|-----------------|----|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|
| | | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect |
| Germany | HD | 0,293 | 0,747 | 0,219 | 0,018 | 2,911 | 0,052 | -0,368 | 1,319 | -0,485 | -0,129 | 0,442 | -0,057 | -0,048 | 0,029 | -0,001 |
| Spain | HD | 0,293 | 0,135 | 0,040 | 0,018 | 0,536 | 0,010 | -0,368 | 0,713 | -0,262 | -0,129 | 0,517 | -0,067 | -0,048 | 0,391 | -0,019 |
| Finland | HD | 0,293 | 1,227 | 0,360 | 0,018 | 1,140 | 0,021 | -0,368 | 0,771 | -0,284 | -0,129 | 1,017 | -0,131 | -0,048 | -0,300 | 0,014 |
| France | HD | 0,293 | 0,783 | 0,229 | 0,018 | 1,003 | 0,018 | -0,368 | 0,423 | -0,156 | -0,129 | 0,508 | -0,065 | -0,048 | 0,050 | -0,002 |
| The Netherlands | HD | 0,293 | 0,614 | 0,180 | 0,018 | 0,412 | 0,007 | -0,368 | 0,789 | -0,290 | -0,129 | -0,044 | 0,006 | -0,048 | 0,070 | -0,003 |
| Sweden | HD | 0,293 | 1,830 | 0,536 | 0,018 | 1,391 | 0,025 | -0,368 | 1,927 | -0,709 | -0,129 | 1,866 | -0,241 | -0,048 | -0,051 | 0,002 |
| UK | HD | 0,293 | 0,842 | 0,247 | 0,018 | 1,273 | 0,023 | -0,368 | 1,367 | -0,503 | -0,129 | 1,029 | -0,133 | -0,048 | 0,233 | -0,011 |
| Belgium | LD | 0,293 | 0,509 | 0,149 | 0,369 | 1,428 | 0,527 | 0,196 | 0,387 | 0,076 | -0,209 | 0,727 | -0,152 | 0,000 | 0,042 | 0,000 |
| Denmark | LD | 0,293 | 0,714 | 0,209 | 0,369 | 0,675 | 0,249 | 0,196 | 0,183 | 0,036 | -0,209 | 1,226 | -0,256 | 0,000 | 0,108 | 0,000 |
| Greece | LD | 0,293 | -0,211 | -0,062 | 0,369 | -0,284 | -0,105 | 0,196 | 0,099 | 0,019 | -0,209 | -0,301 | 0,063 | 0,000 | 0,289 | 0,000 |
| Ireland | LD | 0,293 | 1,315 | 0,385 | 0,369 | 1,333 | 0,492 | 0,196 | -0,015 | -0,003 | -0,209 | 0,910 | -0,190 | 0,000 | -0,049 | 0,000 |
| Italy | LD | 0,293 | 0,861 | 0,252 | 0,369 | 1,050 | 0,387 | 0,196 | 0,276 | 0,054 | -0,209 | 0,575 | -0,120 | 0,000 | -0,012 | 0,000 |
| Austria | LD | 0,293 | 0,067 | 0,020 | 0,369 | 1,004 | 0,370 | 0,196 | 0,168 | 0,033 | -0,209 | 1,273 | -0,266 | 0,000 | 0,055 | 0,000 |
| Portugal | LD | 0,293 | 0,749 | 0,219 | 0,369 | 0,165 | 0,061 | 0,196 | 1,300 | 0,255 | -0,209 | 0,514 | -0,107 | 0,000 | 0,455 | 0,000 |

The economic effects are based on estimated elasticities in Table 1, Column 2.

Table 5. Economic effects by country, disaggregation by size and by level of FD, 1995-2007.

| Country | FD | SIZE | S/K | | | π/K | | | π_r/K | | | F/K | | | $\Delta TD/TA$ | | |
|-----------------|----|-------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|----------------------|--------------------------|-----------------|
| | | | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect | Long-run Coefficient | Actual cumulative Change | Economic Effect |
| Germany | HD | LARGE | 0,467 | 0,747 | 0,349 | 0,022 | 2,911 | 0,064 | -0,359 | 1,093 | -0,392 | -0,159 | 0,358 | -0,057 | -0,043 | 0,029 | -0,001 |
| | | SMALL | | | | | | | -0,204 | 1,755 | -0,358 | 0,000 | 0,466 | 0,000 | | | |
| Spain | HD | LARGE | 0,467 | 0,135 | 0,063 | 0,022 | 0,536 | 0,012 | -0,359 | 0,588 | -0,211 | -0,159 | 0,569 | -0,091 | -0,043 | 0,391 | -0,017 |
| | | SMALL | | | | | | | -0,204 | 1,444 | -0,294 | 0,000 | 0,287 | 0,000 | | | |
| Finland | HD | LARGE | 0,467 | 1,227 | 0,573 | 0,022 | 1,140 | 0,025 | -0,359 | 0,720 | -0,258 | -0,159 | 1,261 | -0,201 | -0,043 | -0,300 | 0,013 |
| | | SMALL | | | | | | | -0,204 | 1,193 | -0,243 | 0,000 | 0,891 | 0,000 | | | |
| France | HD | LARGE | 0,467 | 0,783 | 0,366 | 0,022 | 1,003 | 0,022 | -0,359 | 0,449 | -0,161 | -0,159 | 0,412 | -0,066 | -0,043 | 0,050 | -0,002 |
| | | SMALL | | | | | | | -0,204 | 1,760 | -0,359 | 0,000 | 0,933 | 0,000 | | | |
| The Netherlands | HD | LARGE | 0,467 | 0,614 | 0,287 | 0,022 | 0,412 | 0,009 | -0,359 | 0,684 | -0,245 | -0,159 | 0,189 | -0,030 | -0,043 | 0,070 | -0,003 |
| | | SMALL | | | | | | | -0,204 | 1,070 | -0,218 | 0,000 | -0,745 | 0,000 | | | |
| Sweden | HD | LARGE | 0,467 | 1,830 | 0,854 | 0,022 | 1,390 | 0,031 | -0,359 | 1,310 | -0,470 | -0,159 | 1,670 | -0,266 | -0,043 | -0,051 | 0,002 |
| | | SMALL | | | | | | | -0,204 | 2,417 | -0,493 | 0,000 | 2,129 | 0,000 | | | |
| UK | HD | LARGE | 0,467 | 0,842 | 0,393 | 0,022 | 1,273 | 0,028 | -0,359 | 1,154 | -0,414 | -0,159 | 1,004 | -0,160 | -0,043 | 0,233 | -0,010 |
| | | SMALL | | | | | | | -0,204 | 1,715 | -0,350 | 0,000 | 1,381 | 0,000 | | | |
| Belgium | LD | LARGE | 0,467 | 0,509 | 0,238 | 0,432 | 1,428 | 0,616 | 0,000 | 0,394 | 0,000 | -0,277 | 2,232 | -0,618 | 0,000 | 0,042 | 0,000 |
| | | SMALL | | | | | | | 0,604 | 1,849 | 1,117 | 0,000 | 1,885 | 0,000 | | | |
| Denmark | LD | LARGE | 0,467 | 0,714 | 0,333 | 0,432 | 0,675 | 0,291 | 0,000 | -0,724 | 0,000 | -0,277 | 1,209 | -0,335 | 0,000 | 0,108 | 0,000 |
| | | SMALL | | | | | | | 0,604 | 0,325 | 0,196 | 0,000 | 1,284 | 0,000 | | | |
| Greece | LD | LARGE | 0,467 | -0,211 | -0,099 | 0,432 | -0,284 | -0,123 | 0,000 | 0,052 | 0,000 | -0,277 | -0,279 | 0,077 | 0,000 | 0,289 | 0,000 |
| | | SMALL | | | | | | | 0,604 | 0,926 | 0,560 | 0,000 | -0,264 | 0,000 | | | |
| Ireland | LD | LARGE | 0,467 | 1,315 | 0,614 | 0,432 | 1,333 | 0,575 | 0,000 | 0,578 | 0,000 | -0,277 | 0,518 | -0,143 | 0,000 | -0,049 | 0,000 |
| | | SMALL | | | | | | | 0,604 | 3,674 | 2,219 | 0,000 | 1,727 | 0,000 | | | |
| Italy | LD | LARGE | 0,467 | 0,861 | 0,402 | 0,432 | 1,050 | 0,453 | 0,000 | -0,048 | 0,000 | -0,277 | 0,475 | -0,131 | 0,000 | -0,012 | 0,000 |
| | | SMALL | | | | | | | 0,604 | 0,990 | 0,598 | 0,000 | 1,503 | 0,000 | | | |
| Austria | LD | LARGE | 0,467 | 0,067 | 0,031 | 0,432 | 1,004 | 0,433 | 0,000 | 0,210 | 0,000 | -0,277 | 1,064 | -0,294 | 0,000 | 0,055 | 0,000 |
| | | SMALL | | | | | | | 0,604 | -0,681 | -0,411 | 0,000 | 2,205 | 0,000 | | | |
| Portugal | LD | LARGE | 0,467 | 0,749 | 0,350 | 0,432 | 0,165 | 0,071 | 0,000 | 1,261 | 0,000 | -0,277 | 0,555 | -0,153 | 0,000 | 0,455 | 0,000 |
| | | SMALL | | | | | | | 0,604 | -0,205 | -0,124 | 0,000 | 0,179 | 0,000 | | | |

The economic effects are based on estimated elasticities in Table 2, Column 4.

At the aggregate level, we found that smaller NFCs benefited from financial payments as an additional source of funding for their investment (see results in Table 1, Column 3). With a first disaggregation, we found that the negative effect has been particularly strong for NFCs in countries with high level of FD. With the additional introduction of a size interaction dummy, the overall positive effect of financial incomes on smaller NFCs investment is not confirmed. Interestingly, we found that, in countries with high level of FD the crowding-out impact on investment has been effective for both large and small companies. Even though the negative long run elasticities are higher for larger companies (-0.36 vs. -0.20), on average, the negative effect in smaller companies has been similar to the effect in larger ones (-0.33 vs. -0.31). As it can be seen in the column for the relative actual cumulative change, this is due to the very high increases in small companies' financial incomes. The highest negative effects in larger companies had been the one in Sweden and in the UK (respectively -0.47 and -0.41), whilst the lowest resulted to be the ones in France and Spain (respectively -0.16 and -0.21). In countries with a low level of FD, the effect of financial incomes on larger companies' investment is insignificant. However, small companies' investment benefited from increasing financial profits, with Ireland and Belgium at the top. In Austria and Portugal, given an actual reduction in financial incomes (respectively -0.68 and -0.21), the economic effect of non-operating incomes has been negative for these smaller companies.

6.6 Summary

In this chapter, we presented and discussed the results from our estimations about the effects of financialization on investment for a panel dataset composed by European NFCs' balance sheet. Overall, financialization had a negative impact on NFCs' accumulation in Europe. Whilst the effect of financial payments has been similarly negative for almost all the countries analysed, the impacts of financial incomes are more varied. In fact, in the economic systems in which financial markets and intermediaries are highly developed, the increasing NFCs engagements in financial investment had an adverse effect on their accumulation of fixed capital.

As discussed in chapter 3 (and particularly in section 3.2.3), the microeconomic evidence about the effects of financialization on investment is reducible to few contributions. In what follows we try to compare our findings with the existing evidence.

First, this work extend the analysis of the impacts of financialization for the UK's NFCs in Tori and Onaran (2015), and provide a deeper discussion of the contribution of financialization to the low rates of accumulation with respect to what done in Tori and Onaran (2016). Using a different measure for financial incomes, we find an overall negative effect of financialization on investment in European NFCs similar to what found by Orhangazi (2008b) for the USA. The positive effect of financial incomes on accumulation found in the case of the USA is confirmed only in part. In fact, as we have seen, when including the level of financial development as an

additional macroeconomic control variable, the effect of these non-operating incomes is negative also for relatively smaller companies in country with highly developed financial systems.

The results from the estimation with the inclusion of financial development as a variable to capture different levels of financialization are, to the best of our knowledge, another novelty. In terms of comparison with previous studies, we can relate our evidence with the broad conventional literature about finance and investment (see in particular King and Levine, 1993; Gilchrist and Himmelberg, 1995; Beck et al., 2000; Love, 2003; Beck and Levine, 2004; Levine, 2005; Love and Zicchino 2006). The inclusion of the potential effect of FD in our estimations allows us to test an additional aspect of the ‘race to short-termism’ that financialization might have induced. Even though also from our estimation we find that a more developed financial system is easing NFCs’ financial constraints on investment (see the estimated elasticities for the variable for operating income), the inclusion of what we labelled as ‘financialization variable’ allowed us to make explicit another effect that remains hidden in the conventional literature. In fact, a more developed financial system is at the same time enabling NFCs to engage with financial investment (thus receiving incomes from interest and dividend), which are crowding-out their core business, namely the accumulation of physical assets. Although not fully comparable, our results confirm previous findings at the microeconomic level for the USA (Orhangazi, 2008b; Davis, 2016), as well as at the macroeconomic level for the USA and European countries (see in particular Stockhammer, 2004; van Treeck, 2008).

Overall, in Europe the rate of investment by the NFCs would have been 27% higher without the rise in interest and dividend payments in 2007 compared to 1995, and 10% higher without the crowding-out effect of increasing financial incomes (see Table 3). Looking at some country cases, in the UK, in large NFCs, investment rate would have been 16% higher without the rise in financial payments, and 41% higher without the increasing financial incomes, and in the small NFCs, investment would have been 35% higher without the rise in financial incomes. In Germany, aggregate financial payments had a downward pressure on NFCs’ investment only in the case of large ones (-5.7%); in addition, investment in both large and small NFCs suffered from the crowding-out effect (-40% and -36% respectively). In the case of France, the crowding-out effect has been larger for small NFCs (-36%) but still negative also for the bigger companies (-16%). In this case, financial payments reduced investment by 6.6% only in larger companies. Sweden present the strongest negative effect of financialization on investment. In fact, increasing financial payments caused a reduction in the rate of investment by -47% in larger NFCs and -49.3% in smaller ones. Again, the economic effect of financial payments has been negative only in larger firms (-26.6%). In contrast to what found for these core economies, in Italy the rate of investment of smaller NFCs benefited from increasing financial incomes (59.8%), and this effect has been non-significant for larger companies. Financial payments negatively affected only the rate of

investment of larger firms (-13%). In Ireland and Denmark, in large NFCs, investment rate would have been 14% and 33% higher without the rise in financial payments; in these countries there is a positive impact of financial incomes only on the small NFCs.

To summarize, overall, financialization had a negative impact on NFCs' accumulation in Europe. Whilst the effect of financial payments has been similarly negative for almost all the countries analysed, the impacts of financial incomes are more varied. In fact, in countries in which financial markets and intermediaries are highly developed, the increasing NFCs engagements in financial investment had an adverse effect on their accumulation of fixed capital.

There are several economic intuitions that could be drawn from our results. First, our results suggest that, in Europe, NFCs' investment had been relatively more sensible (constrained by) to demand than to profitability. This is an important result both for economic theory and for the structuring of industrial and economic policies. However, we also find that profitability (liquidity) constraint is important in the case of NFCs based in economic environments with less developed financial systems.

Second, it is clear how a 'one fits all' approach to the effects of financialization on investment, and thus to the determinants of the rate of accumulation in NFCs, would be misleading. In fact, at least in the case of European publicly listed NFCs, in the period from 1995 until the 2007 crisis, the apparently homogeneous negative effect of financialization for the aggregate European sample is composed by heterogeneous dynamics, both in terms of the overall macroeconomic (also institutional) environment and in terms of the dimension of the companies.

The next and last chapter presents the conclusion of this Thesis.

CHAPTER 7. Conclusions

In this last chapter, we discuss the conclusion of our analysis. In section one, we review the main findings from both the theoretical and empirical analyses carried out in previous chapters. In section two, we discuss some policy implications of our empirical findings about the overall negative effect of financialization on NFCs' accumulation. In section three, we briefly discuss the limitations of our analysis, as well as some potential developments of our work.

7.1 Final remarks

In the second chapter of this thesis, we analysed the evolution of the concept of 'rent' within different theoretical frameworks and historical periods. In doing this, we also discussed the ways in which various scholars have defined the recipient of this 'unearned income'. Then, the primary focus of this chapter has been the effects of various types of rent on the accumulation of capital. We thus arrived to the contemporary views by Marxian and (post) Keynesian schools of thoughts, taking a dialectical view about the effect of finance from the former, and the empirically testable relationship between rent and economic growth from the latter. We presented a broad definition of 'financialized capitalism' saying that it can be seen as an ongoing and self-reinforcing economic and social process that manifests itself in the growing prominence and influence of behaviours derived from the financial sector. The long-term development of economic systems gravitates more around the financial sector and less around the real productive sector. Instead of being a catalyst for production plans, the financial side of the economies has grown in disproportion with respect to the extension of real investments.

What the contemporary Marxian and Post-Keynesian literature calls 'financialization' can be partially described as the process of financial liberalization advocated by the 'new classical', 'mainstream', or 'conventional' literature. For the latter, lowering the barriers to the expansion of financial markets will certainly have only positive effects on investment and growth. The term 'financialization' is employed to identify a general increase in the role of behaviours encouraged by finance in the context of more and more powerful financial actors. With respect to the sphere of real production, it can be also defined as the change from a conceptualization of the enterprise as a means to realize returns on productive investment, towards a vision of it as any other kind of 'asset' whose shares are traded to obtain financial gains.

Since the beginning of the 1980s, advanced capitalist systems have experienced a generalized strengthening of the decoupling between the rates of accumulation of capital and the profit rates. The explanation given to this 'investment-profit puzzle' is the emergence of a new accumulation pattern in which profits are realized through finance rather than the traditional sphere of real production and trade. The new address of corporate governance within companies has been defined 'shareholder value orientation', a model in which the objectives of production are

gradually being biased in favour of the holders of companies' shares. In a financialized system, even companies that could have prospect for investment are more willing to distribute dividends than investing in physical assets. This argument is based on the post-Keynesian theory of the enterprise, for which there is a 'growth-profit trade-off' within the decisional process of business management. The novelty is that financialization is fictitiously loosening this trade-off. In this new configuration characterized by 'relaxed finance constraints', managers can now choose between more growth in the long-term and more profit (also from financial investments) in the short-term.

Within our literature review on the theoretical and empirical evidence about the effects of financialization on accumulation (both at macro and micro levels) we mainly highlighted two gaps: a) the lack of formalization of financial variables in the conventional literature and b) the general lack of evidence about the effect of inward and outward financialization at the micro level, especially for Europe.

We thus tried to fill these gaps by providing novel econometric evidence on the effects of financialization on firm-level investment in the publicly listed NFCs in Europe. In particular, we focused on three aspects. Firstly, even though higher gains from financial investment can relax NFCs' cash-flow constraint, they can adversely affect accumulation by crowding-out physical investments. Secondly, increasing financial payments for external finance and to favour the shareholders (interest and dividends) may reduce the NFCs funds, and thus accumulation. Thirdly, even though financial development (the growth of stock markets and financial intermediaries) may allow efficient allocation of investment resources, it can also push NFCs' management to 'financialize' their companies' investment strategy.

Our findings for the EU14, provide at least two key insights on the relationship between financialization and NFCs' accumulation.

First, at the aggregate level, we show that financialization, depicted as the increasing orientation towards external financing, shareholder value orientation and the internal substitution of fixed investment by financial activity, had a fundamental role in suppressing investment in the NFCs. The lower availability of internal funds constrains the investment decision. On the one hand, the increase in financial payments for external finance and to favour the shareholders (interest and dividends) reduce the NFCs internal funds, and thus accumulation. On the other hand, the negative crowding-out effects of financial investment on accumulation more than offset the gains from relaxing the cash-flow constraint. Financial incomes have a positive effect on investment only for the smaller companies, but a significant negative effect in the large companies. It has to be noted that larger companies create the vast majority of capital, and the crowding-out of physical investment of these companies by financial activity is a substantial drag on the investment performance and productivity of the European countries.

Second, when financial variables are consistently taken into account, financial development has a negative effect on NFCs' accumulation, by increasing the negative effects of both inward and outward financialization. Our results suggest that, even though low levels of financial development have a positive effect on investment through enhanced resource allocation, in countries with high levels of financial development a perverse effect dominates. A growth of the financial markets and intermediaries delinked from the financing requirements of NFCs is incentivizing the latter to heavily engage in non-operating (non-productive) activities, ultimately leading to stagnant levels of accumulation. We presented robust evidence of a negative effect between financial development (as measured by the FD index) and NFCs' capital accumulation via an amplified crowding-out effect of financial incomes. When companies' financial (non-operating) activities are taken into account, the virtuous cycle between FD and investment described in Love and Zicchino (2006) is not confirmed. On the contrary, our results suggest that higher level of FD may induce NFCs to accumulate more financial assets, receive non-operational incomes, and use this liquidity to buy additional financial assets as opposed to physical assets related to their core business. As already said, some authors belonging to the conventional literature put forward reservations about the positive effect of a growing financial sector (see also Arcand et al., 2015). At the macroeconomic level, if exceeding a threshold (e.g. 100% of the GDP) financial depth has a negative effect on growth. Our finding at the microeconomic level highlight a further mechanism through which FD negatively affects investment behaviour.

These results provide support to the theoretical arguments regarding the negative effects of financialization and confirm previous empirical findings at the macro and microeconomic levels in the literature. The increasing interrelations between the financial markets and the NFCs are progressively reducing fixed capital accumulation, and thus growth. These results contrast with the conventional arguments regarding the beneficial effects of financial liberalization and financial deepening.

7.2 Policy implications

The financialization of the European economic and social system has been favoured by a political processes aimed at the deregulation (liberalization) of financial markets and at the reduction of tax rates for corporations (Bieling, 2013). As we have seen, financialization had a fundamental role in depressing NFCs' rate of accumulation in Europe. To reach a stable and vigorous dynamic of investment, a de-financialization of the non-financial sector is desirable. This would require an extended regulation of companies' non-operating financial activities along with financial regulation. In addition, the robust connection between past and present levels of accumulation (i.e. the 'hysteresis' of the investment processes signalled by a positive value of the lagged level of investment) increases the potential effectiveness of de-financialization economic policies.

In this paragraph, we will discuss some policies that could help reversing this process and allow a return to more stable and higher levels of accumulation. In light of our results, we will organize our arguments in two levels. First, we will discuss possible general policies to contrast the negative consequences of financialization at the aggregate level. Second, we will discuss better tailored policies when taking into account the roles of different stages of financial development as well as the dimension of the NFCs.

Our results for the simple aggregate estimation (Table 4) show a negative effect of outward financialization (the sum of interest and dividends payment) that is common to all countries. This is confirmed also by further disaggregation in terms of size, even though this adverse effect has not been relevant for smaller companies (see Table 5). Given that from the 1980s there has been an overall reduction in the interest rates, and a tendency of banking activities to move from NFCs funding to household services, the primary channel to focus on is the one of distributed dividends. Managers' behaviours and decisions exclusively aimed at pleasing the shareholders should be disincentivized. More than a particular fiscal or monetary policy, what is needed is the provision of an institutional setting for NFCs that encourage management orientation towards growth and, more in general, towards 'stakeholder value'. Our analysis shows that this should be addressed in particular in the case of larger corporations. In addition, shareholders themselves could see the long-term availability and stability of the corporation as their main goal, and willing to accept a reduction in their benefits as a pledge for the long-term availability of the productive assets, and thus of the consequent claim on the stream of income generated.

With respect to what we labelled as 'inward financialization', at the aggregate level we found a strong negative effect on investment for NFCs in countries with high levels of FD (see again Table 4), whilst this impact is slightly positive (overall negligible) for NFCs in countries with low FD. Introducing the size aspect (Table 5), the positive effect is becoming considerable for smaller NFCs, but only in countries with low FD. On the contrary, we found that financial investment are crowding-out physical accumulation in all NFCs within an environment of high FD, irrespective of the size. These findings can be informative to design accurate de-financialization policies. In fact, especially the crowding-out effect of financialization has not been addressed carefully, also because of the strength of the conventional idea that 'every additional fund is good'. Furthermore, in countries with high FD we found a weak (and relatively not robust) explanatory power of operating income. Therefore, it will be ineffective to further reduce NFCs income taxation, hoping for a recovery in the investment rate. The focus should rather be on funds destination. The corporation today is an institution composed by different layers of productive and non-operating activities. A better policy would be the one aimed at favouring a productive destination of NFCs' internal funds, i.e. the reduction of taxation on re-invested profits.

Given the negative effect of excessive financial development on NFCs' investment, the policy recommendation for countries with low levels would be to not intensify the de-regulation of financial markets and/or intermediaries, to avoid the negative effect associated with high levels of FD. In addition, a wider of fiscal policy can be effective in reversing the financialization-led investment depletion. Apart from the re-regulation of the financial side of our economies (both at the macro and at the micro levels), the reform of a financialized productive system needs coordinated public investments. In fact, the public sector can act as the catalyst and driver of a new phase in which NFCs investment are essentially brought back to productive and stable accumulation.

Along with the various regulation proposed above, another line of action seems to be necessary to reverse the process of financialization and the negative effect on investment, growth, as well as on long-term productivity. The main reason behind the missing link between profits and accumulation can be traced back to the consistent rise in the financialization-inequality mix (Stockhammer, 2015). The various waves of liberalization and privatisation of large part of the economics systems fostered the emergence of behaviours detached from the objectives of equality and prosperity. The evidence speaks in favour of a vast programme of public investment that can sustain and provide a sustainable direction to the private initiative (Onaran, 2016).

Notwithstanding the above considerations, at the (broader) level of analysis of the political projects guiding the recent development of European financial capitalism, an issue of critical reassessment of the process of European (financial) integration remains (Bieling 2003, 2013). The project of European economic integration has been informed by a set of concepts about the functioning of economic systems for which 'the market' should be the driver of growth, prosperity, and even stability.

Although this belief has proven to be too optimistic, especially after the 2007-8 financial meltdown, and the consequences on European economies, supporters of this view are still strong. Reversing financialization of the socio-economic system in general, and of NFCs accumulation in particular, would require an extensive socio-political 'de-financialization reform package', which goes beyond the mere fiscal and/or monetary policies.

7.3 Limitations of the study and areas for further research

First, one limitation of this analysis is coming from the potential reduced comparability between companies based in different countries. In fact, companies adopt different accounting standards even within the same country. However, we argue that the robustness of the expected positive signs for the effects of lagged level of investment, sales, and operating income partially downsized this issue.

Second, to determine the precise geographical location of a listed company in the era of multinationals is not an easy task. In this study we relied on companies' country of operation as

provided in the database. The study could be improved by taking into account some ‘geographical ratios’ such as the one between production in country ‘*a*’ over total production, or sales in country ‘*a*’ over total sales. To some extent this possibility has been explored but we found that few companies report information about their activities at such a disaggregate level.

Third, results may suffer from sample selection bias. In fact, not all the companies report the information used in this study as ‘financialization variable’. For this reason, it is possible that important information have not been taken into account.

Fourth, the exclusive focus on publicly listed companies left out the interesting case of private equity firms, which could also have been affected by the process of financialization. However, this decision has been informed by a practical reason. In fact, publicly listed companies are supposed to provide more reliable and frequent data, since they are required to do so by regulation authorities.

It goes without saying that our analysis does not exhaust the need for a better understanding of the effects of rent incomes on physical accumulation in capitalist economies. Here we briefly sketch out some possible ways to further develop our research.

First, our analysis will be improved by using a more comprehensive variable for financial (non/operating) incomes. As we discussed, our variable for inward financialization does not include capital gains. However, capital gains are very volatile and some companies report when these are effectively realized. The availability of these information is needed to better characterize the changing behaviour of NFCs. A partial solution to the lack of actual variable in the available data sources could be to indirectly retrieve the information from a better scrutiny of the NFCs’ balance sheet composition.

Second, another interesting venue of research would be the investigation of the determinants of NFCs’ ‘financial accumulation’, as well as the sources of business’ financial assets. In this respect, the biunivocal relationship between the tendency through internationalization and the national dimension of is another interesting field that could provide interesting implications for the findings presented in this work.

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Appendix

Table 6. Variables definition and codes.

| <i>Symbol</i> | <i>Variable</i> | <i>Definition</i> | <i>Worldscope Code</i> |
|---------------------------|-----------------------------------|--|------------------------------------|
| <i>I</i> | Investment | Addition to fixed assets | WC04601 |
| <i>K</i> | Capital stock | Net fixed capital stock | WC02501 |
| <i>S</i> | Sales | Net sales | WC01001 |
| π | Net profit rate | Operating income-depreciation | WC01250- WC04051 |
| <i>F</i> | Financial Payments | Interest + cash dividends paid | WC01251+ WC04551 |
| π_F | Non-operating profit | Non-operating profit from interest and dividends | WC01266+ WC01268 |
| <i>FA</i> | Financial assets | Cash, other investment, short- term investment | WC02003+ WC02250+ WC02008 |
| <i>Q</i> | Average Tobin's Q ⁹⁸ | (Market share price*common share outstanding + total liabilities)/total assets | $\frac{WC08001 + WC0351}{WC02999}$ |
| <i>TD</i> | Total debt | sum of long-term and short-term debt | WC03255 |
| <i>FD</i> | Financial Development | Standardized average of Stock market and financial intermediaries development over GDP | Index1 + Findex1 |

A more detailed guide about variables is available at the link:

http://lipas.uwasa.fi/~jaty/thomson/worldscope_def.pdf (last accessed 21/08/2016)

⁹⁸ This is a proxy for average firms' market evaluation (Chung and Pruitt, 1994) based on the work of Lindenberg and Ross (1981).

Table 7. Estimation results, minor single countries, 1995-2015, dependent variable $(I/K)_t$

| | AUT | DNK | FNL | BLG | PRT | IRL | GRE | NTH |
|---|---------------------|---------------------|----------------------|--------------------|----------------------|---------------------|--------------------|----------------------|
| $(I/K)_{t-1}$ | 0.378*** (0.092) | 0.191** (0.084) | 0.348*** (0.056) | 0.096 (0.069) | 0.269*** (0.102) | 0.432* (0.251) | 0.382** (0.175) | 0.294*** (0.089) |
| $(S/K)_{t-1}$ | 0.751*** (0.207) | 0.501* (0.287) | 0.534*** (0.205) | 0.036 (0.155) | 1.302* (0.792) | 0.732 (0.550) | 0.477 (0.398) | 0.191** (0.088) |
| $[(\pi - CD)/K]_{t-1}$ | 0.045 (0.039) | 0.075** (0.036) | 0.010 (0.052) | 0.068** (0.025) | -0.067 (0.064) | 0.024 (0.095) | -0.025 (0.045) | 0.011 (0.027) |
| $(F/K)_{t-1}$ | 0.024 (0.092) | -0.249** (0.098) | -0.238*** (0.091) | 0.034 (0.074) | -0.435*** (0.158) | -0.528* (0.269) | 0.254 (0.164) | -0.097*** (0.037) |
| $(\pi_F/K)_{t-1}$ | -0.214** (0.084) | 0.081 (0.071) | 0.033 (0.035) | 0.049* (0.030) | -0.050 (0.075) | -0.147** (0.058) | -0.032 (0.051) | -0.076** (0.034) |
| $(Q)_{t-1}$ | 0.151* (0.092) | 0.245** (0.119) | | | | | | -0.252*** (0.064) |
| <i>Number of Observations</i> | 470 | 708 | 561 | 684 | 314 | 536 | 580 | 904 |
| <i>Number of Firms</i> | 76 | 89 | 84 | 82 | 54 | 55 | 92 | 94 |
| <i>Number of Instruments</i> | 34 | 34 | 32 | 32 | 32 | 32 | 32 | 34 |
| <i>p-value Hansen test</i> | 0.735 | 0.485 | 0.468 | 0.445 | 0.085 | 0.097 | 0.599 | 0.410 |
| <i>p-value A-B test (AR 2)</i> | 0.242 | 0.727 | 0.022 | 0.696 | 0.427 | 0.909 | 0.622 | 0.001 |
| <i>Time effects</i> | yes | yes | yes | Yes | yes | yes | yes | yes |
| <i>p-value Wald test for time effects</i> | 0.003 | 0.000 | 0.000 | 0.000 | 0.001 | 0.005 | 0.002 | 0.011 |

All specification based on Equation (1), two-step difference-GMM estimations. Coefficients for the year dummies are not reported. Robust corrected standard error in parenthesis * significant at 10%, ** significant ant 5%, *** significant at 1%

Table 8. Summary statistic for the EU14 pool

| Variable | | Mean | Std. Dev. | | |
|---------------------|---------|-------------|------------------|---------|-------|
| Observations | | | | | |
| I/K | overall | 0.25 | 0.20 | N = | 25726 |
| | between | 0.16 | 1.10 | n = | 2881 |
| | within | 0.14 | -0.442 | T-bar = | 15.9 |
| S/K | overall | 13.49 | 28.98 | N = | 25726 |
| | between | 33.92 | 0.062 | n = | 2881 |
| | within | 15.60 | -281.82 | T-bar = | 15.6 |
| $(\pi - CD)/K$ | overall | 0.66 | 2.50 | N = | 25726 |
| | between | 2.10 | -17.98 | n = | 2881 |
| | within | 1.93 | -74.66 | T-bar = | 15.1 |
| π_F/K | overall | 0.032 | 0.12 | N = | 25726 |
| | between | 0.056 | 0.89 | n = | 2881 |
| | within | 0.10 | -.86 | T-bar = | 15.8 |
| F/K | overall | 0.46 | 3.41 | N = | 25726 |
| | between | 2.79 | 85.69 | n = | 2881 |
| | within | 2.59 | -85.19 | T-bar = | 15.1 |
| I/π | overall | 0.38 | 0.26 | N = | 25726 |
| | between | 0.22 | 0.97 | n = | 2881 |
| | within | 0.18 | -0.25 | T-bar = | 15.2 |
| FA/K | overall | 2.44 | 13.77 | N = | 25726 |
| | between | 9.86 | 0.10 | n = | 2881 |
| | within | 10.48 | -317.04 | T-bar = | 15.6 |
| Q | overall | 1.54 | 0.99 | N = | 25329 |
| | between | 0.71 | 0.34 | n = | 2864 |
| | within | 0.73 | -3.43 | T-bar = | 15.7 |

Source: authors' calculation based on Worldscope data

N = number of total observations, n = number of groups, T -bar = average time period

Table 9. Sample coverage across countries, and by size

| Country | (a) Number of observations | (b) Share of total observations | (c) Number of firms | (d) Share of total firms | (e) Firms with avg. Ta < 20pTa (%) | (f) Firms with avg. Ta >80pTa (%) | Difference (f-e) |
|----------------|-----------------------------------|--|----------------------------|---------------------------------|--|---|-------------------------|
| Austria | 470 | 0,02 | 76 | 0,03 | 12 (15,79) | 18 (23,68) | 7,89 |
| Belgium | 684 | 0,03 | 82 | 0,03 | 21 (25,61) | 28 (34,15) | 8,54 |
| Denmark | 708 | 0,03 | 89 | 0,03 | 18 (20,22) | 32 (35,96) | 15,73 |
| Finland | 561 | 0,02 | 84 | 0,03 | 24 (28,57) | 36 (42,86) | 14,29 |
| France | 3557 | 0,14 | 417 | 0,14 | 109(26,14) | 132(31,65) | 5,52 |
| Germany | 3438 | 0,13 | 400 | 0,14 | 85 (21,25) | 119(29,75) | 8,50 |
| Greece | 580 | 0,02 | 92 | 0,03 | 38 (41,30) | 49 (53,26) | 11,96 |
| Ireland | 536 | 0,02 | 55 | 0,02 | 6 (10,91) | 11 (20,00) | 9,09 |
| Italy | 1456 | 0,06 | 176 | 0,06 | 36 (20,45) | 56 (31,82) | 11,36 |
| Netherlands | 904 | 0,04 | 94 | 0,03 | 19 (20,21) | 34 (36,21) | 15,96 |
| Portugal | 314 | 0,01 | 54 | 0,02 | 7 (12,96) | 11 (20,37) | 7,41 |
| Spain | 1039 | 0,04 | 116 | 0,04 | 35 (30,17) | 60 (51,72) | 21,55 |
| Sweden | 1998 | 0,08 | 231 | 0,08 | 55 (23,81) | 68 (29,44) | 5,63 |
| United Kingdom | 9481 | 0,37 | 915 | 0,32 | 180(19,67) | 276(30,16) | 10,49 |
| EU14 | 25726 | 1,00 | 2881 | 1,00 | 645(22,39) | 930(32,28) | 9,89 |

Table 10. Summary statistics for selected countries

| <i>Variable</i> | | | | | | | | | | | | | | |
|-----------------|-------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|
| | <i>I/K</i> | | <i>S/K</i> | | $(\pi - CD)/K$ | | π_F/K | | <i>F/K</i> | | <i>I/\pi</i> | | <i>FA/K</i> | |
| <i>Country</i> | <i>mean</i> | <i>s.d.</i> | <i>mean</i> | <i>s.d.</i> | <i>mean</i> | <i>s.d.</i> | <i>mean</i> | <i>s.d.</i> | <i>mean</i> | <i>s.d.</i> | <i>mean</i> | <i>s.d.</i> | <i>mean</i> | <i>s.d.</i> |
| France | 0.31 | 0.24 | 5.29 | 2.80 | 0.74 | 1.55 | 0.03 | 0.06 | 0.32 | 0.54 | 0.38 | 0.26 | 2.03 | 4.01 |
| Germany | 0.28 | 0.21 | 4.50 | 1.26 | 0.55 | 1.76 | 0.04 | 0.10 | 0.30 | 0.68 | 0.40 | 0.27 | 2.34 | 6.71 |
| Italy | 0.21 | 0.15 | 7.35 | 0.86 | 0.38 | 0.86 | 0.02 | 0.05 | 0.27 | 0.56 | 0.42 | 0.26 | 1.49 | 3.41 |
| Spain | 0.18 | 0.15 | 4.97 | 7.39 | 0.27 | 0.50 | 0.02 | 0.05 | 0.30 | 0.64 | 0.43 | 0.26 | 1.09 | 2.48 |
| Sweden | 0.29 | 0.21 | 7.24 | 3.26 | 1.00 | 1.25 | 0.06 | 0.17 | 0.75 | 1.76 | 0.33 | 0.25 | 2.95 | 6.84 |
| United Kingdom | 0.25 | 0.19 | 5.07 | 7.65 | 0.83 | 1.34 | 0.03 | 0.09 | 0.43 | 0.92 | 0.35 | 0.26 | 2.67 | 6.53 |

Figure 12. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, The Netherlands

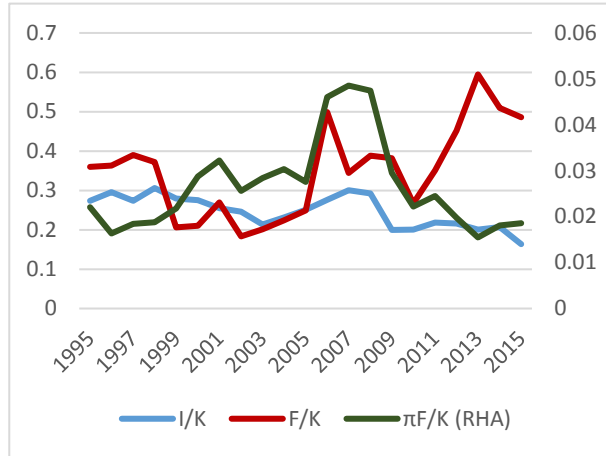


Figure 13. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Ireland

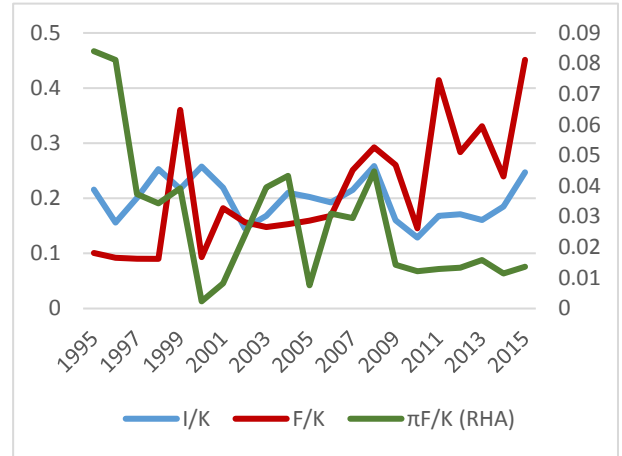


Figure 14. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Finland

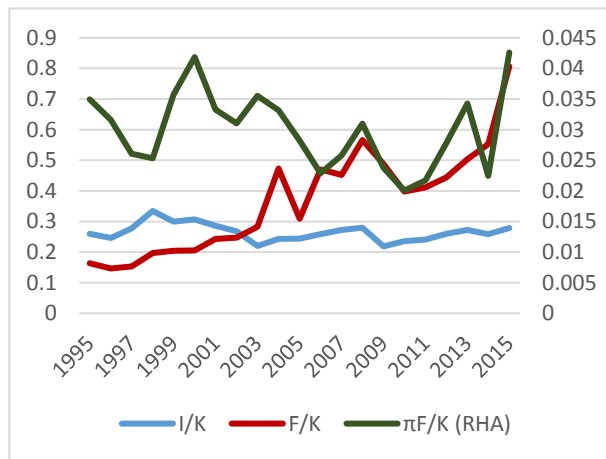


Figure 15. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Greece

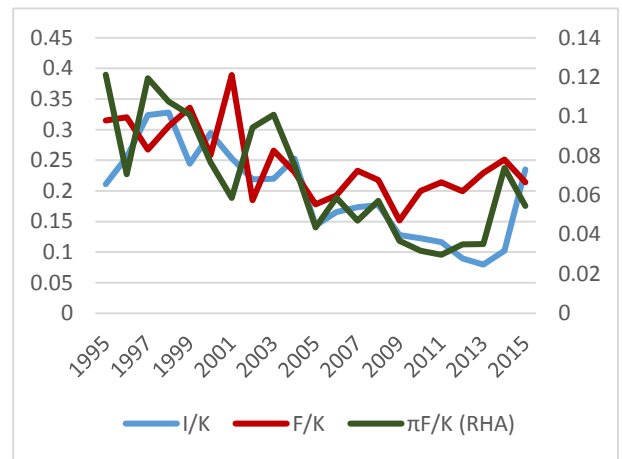


Figure 16. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Denmark

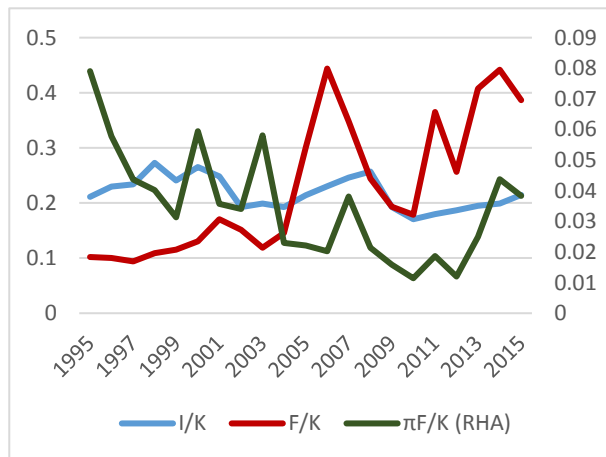


Figure 17. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Portugal

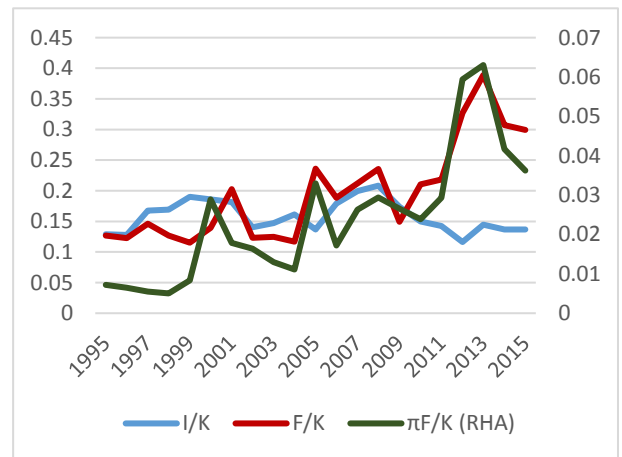


Figure 18. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Belgium

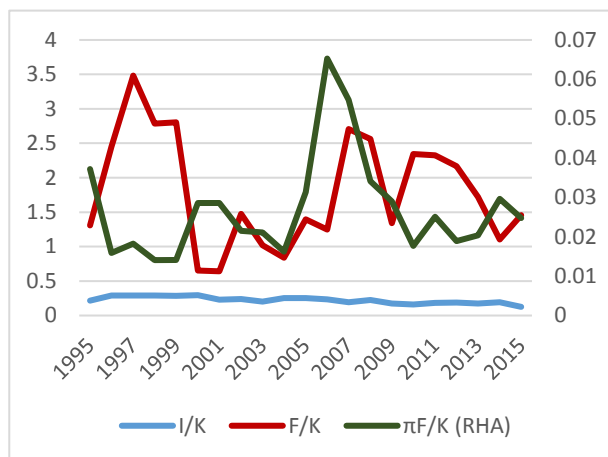


Figure 19. Additions to fixed assets/Fixed Assets (I/K), total payments (F/K), and total financial profits ($\pi F/K$), NFCs, Austria

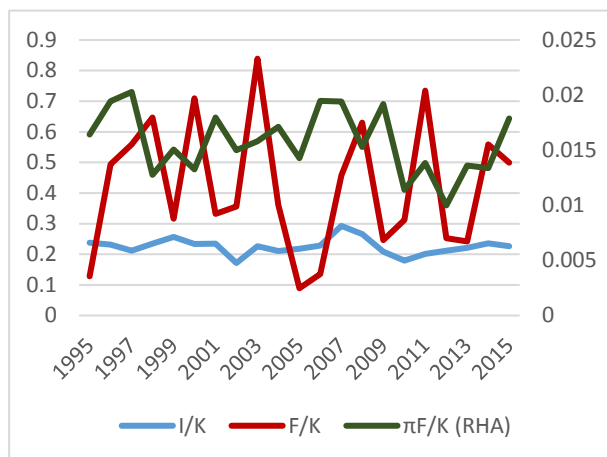


Table 11 Disaggregated measure of financial development by country, period 1995-2007

| Country | Indicator Name | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| AUT | Domestic credit to private sector (% of GDP) | 92.66 | 95.67 | 102.35 | 100.85 | 99.34 | 102.62 | 105.07 | 104.58 | 104.81 | 105.97 | 115.63 | 116.37 | 115.44 | 120.29 |
| AUT | Liquid liabilities to GDP (%) | 89.57 | 89.78 | 89.86 | 88.38 | 87.64 | 86.90 | 87.54 | 86.98 | 87.99 | 88.65 | 91.44 | 93.17 | 95.02 | 100.72 |
| AUT | Stock market capitalization to GDP (%) | 14.12 | 13.89 | 15.71 | 16.25 | 15.43 | 15.23 | 14.03 | 13.90 | 18.39 | 25.15 | 34.60 | 48.72 | 58.17 | 38.60 |
| AUT | Stock market total value traded to GDP (%) | 9.35 | 9.66 | 7.23 | 6.92 | 6.71 | 5.08 | 4.29 | 3.24 | 3.50 | 6.10 | 11.44 | 19.35 | 27.63 | 28.47 |
| AUT | Stock market turnover ratio (%) | 76.45 | 62.97 | 37.22 | 50.75 | 35.66 | 32.08 | 26.96 | 20.16 | 23.15 | 32.51 | 43.49 | 50.26 | 55.65 | 65.38 |
| BEL | Domestic credit to private sector (% of GDP) | 72.71 | 74.98 | 75.54 | 78.03 | 80.52 | 77.83 | 75.95 | 74.04 | 73.81 | 71.19 | 73.76 | 82.03 | 90.89 | 93.90 |
| BEL | Liquid liabilities to GDP (%) | 76.66 | 80.79 | 83.24 | 85.60 | 86.79 | 87.97 | 87.83 | 89.62 | 94.12 | 98.11 | 103.05 | 104.38 | 103.74 | 106.88 |
| BEL | Stock market capitalization to GDP (%) | 35.35 | 39.93 | 48.31 | 74.54 | 82.79 | 73.82 | 74.29 | 60.04 | 52.66 | 64.43 | 75.07 | 86.01 | 88.95 | 58.43 |
| BEL | Stock market total value traded to GDP (%) | 5.26 | 7.37 | 10.50 | 16.58 | 22.06 | 19.27 | 16.88 | 15.31 | 13.42 | 17.61 | 27.42 | 36.64 | 47.29 | 48.62 |
| BEL | Stock market turnover ratio (%) | 15.16 | 23.72 | 24.62 | 29.06 | 28.06 | 22.13 | 23.80 | 22.27 | 25.99 | 34.36 | 44.38 | 48.23 | 62.54 | 71.44 |
| DNK | Domestic credit to private sector (% of GDP) | 30.85 | 31.53 | 32.09 | 34.98 | 34.87 | 135.33 | 142.56 | 145.47 | 151.62 | 158.16 | 171.78 | 185.68 | 202.50 | 216.32 |
| DNK | Liquid liabilities to GDP (%) | 54.88 | 56.10 | 57.27 | 58.14 | 56.46 | 51.43 | 49.36 | 49.94 | 51.52 | 53.37 | 57.60 | 61.39 | 65.32 | 70.10 |
| DNK | Stock market capitalization to GDP (%) | 32.52 | 34.22 | 45.96 | 55.38 | 57.68 | 62.21 | 60.23 | 49.33 | 50.48 | 58.42 | 64.19 | 75.21 | 85.02 | 63.45 |
| DNK | Stock market total value traded to GDP (%) | 15.74 | 16.22 | 22.67 | 33.72 | 37.50 | 45.44 | 49.81 | 36.62 | 30.45 | 35.05 | 48.55 | 60.49 | 69.75 | 69.59 |
| DNK | Stock market turnover ratio (%) | 43.84 | 54.93 | 59.85 | 73.33 | 62.08 | 91.94 | 73.02 | 60.13 | 62.42 | 68.17 | 91.93 | 85.61 | 91.46 | 97.55 |
| FIN | Domestic credit to private sector (% of GDP) | 61.86 | 59.42 | 53.12 | 51.96 | 53.31 | 53.15 | 55.92 | 58.34 | 64.18 | 67.60 | 75.05 | 78.80 | 81.52 | 85.98 |
| FIN | Liquid liabilities to GDP (%) | 55.23 | 54.29 | 49.90 | 47.35 | 49.08 | 48.80 | 47.31 | 49.14 | 52.22 | 52.58 | 54.27 | 54.72 | 55.56 | 61.36 |
| FIN | Stock market capitalization to GDP (%) | 34.51 | 41.09 | 52.65 | 86.90 | 190.40 | 246.05 | 192.39 | 125.96 | 102.80 | 98.37 | 100.75 | 114.61 | 134.15 | 103.11 |
| FIN | Stock market total value traded to GDP (%) | 13.35 | 15.85 | 22.88 | 36.83 | 65.64 | 125.12 | 153.42 | 135.36 | 114.53 | 105.95 | 126.40 | 152.05 | 189.79 | 181.66 |
| FIN | Stock market turnover ratio (%) | 42.10 | 42.53 | 56.16 | 53.49 | 45.75 | 68.96 | 74.66 | 103.64 | 96.81 | 118.31 | 138.66 | 149.71 | 164.56 | 139.22 |
| FRA | Domestic credit to private sector (% of GDP) | 86.04 | 82.91 | 82.01 | 81.81 | 81.61 | 85.13 | 87.90 | 85.95 | 88.66 | 90.61 | 92.67 | 98.43 | 105.58 | 108.76 |
| FRA | Liquid liabilities to GDP (%) | 63.33 | 66.23 | 67.65 | 35.19 | 35.28 | 65.28 | 65.46 | 66.92 | 69.96 | 72.43 | 73.67 | 73.89 | 74.38 | 78.87 |
| FRA | Stock market capitalization to GDP (%) | 32.62 | 35.10 | 42.10 | 56.43 | 82.95 | 102.82 | 96.57 | 76.43 | 70.21 | 74.34 | 77.87 | 93.36 | 104.66 | 79.64 |
| FRA | Stock market total value traded to GDP (%) | 22.51 | 20.22 | 22.76 | 33.67 | 46.32 | 66.53 | 79.68 | 71.75 | 62.14 | 64.05 | 69.06 | 89.78 | 118.64 | 123.47 |
| FRA | Stock market turnover ratio (%) | 71.08 | 50.20 | 67.27 | 71.33 | 65.19 | 79.44 | 83.36 | 84.22 | 87.72 | 92.65 | 91.73 | 118.93 | 126.49 | 144.80 |
| DEU | Domestic credit to private sector (% of GDP) | 100.42 | 106.35 | 110.61 | 116.67 | 116.31 | 119.45 | 118.80 | 117.52 | 116.29 | 112.93 | 112.59 | 109.60 | 105.25 | 108.61 |
| DEU | Liquid liabilities to GDP (%) | 64.62 | 67.50 | 69.35 | 70.34 | 85.62 | 98.01 | 96.95 | 98.69 | 101.57 | 103.27 | 105.42 | 106.28 | 108.02 | 115.64 |
| DEU | Stock market capitalization to GDP (%) | 22.05 | 25.09 | 32.77 | 43.82 | 58.16 | 66.35 | 61.38 | 45.37 | 39.27 | 43.65 | 43.65 | 49.32 | 58.37 | 46.73 |
| DEU | Stock market total value traded to GDP (%) | 21.75 | 27.01 | 28.10 | 29.64 | 36.25 | 46.82 | 65.31 | 67.97 | 54.11 | 48.87 | 57.21 | 73.29 | 91.09 | 93.04 |
| DEU | Stock market turnover ratio (%) | 103.09 | 125.74 | 75.78 | 79.82 | 65.73 | 85.42 | 122.96 | 135.43 | 120.51 | 118.15 | 146.01 | 173.70 | 173.33 | 183.39 |
| GRC | Domestic credit to private sector (% of GDP) | 30.28 | 31.28 | 32.43 | 34.38 | 41.70 | 47.40 | 57.41 | 61.00 | 64.77 | 70.79 | 79.59 | 85.24 | 93.91 | 97.41 |
| GRC | Liquid liabilities to GDP (%) | 53.91 | 56.14 | 56.17 | 54.71 | 55.33 | 55.90 | 73.05 | 86.74 | 79.80 | 78.68 | 85.22 | 88.45 | 91.78 | 101.29 |
| GRC | Stock market capitalization to GDP (%) | 12.47 | 14.65 | 20.44 | 41.03 | 103.22 | 115.35 | 74.39 | 54.67 | 48.93 | 53.09 | 56.32 | 67.46 | 80.10 | 55.36 |
| GRC | Stock market total value traded to GDP (%) | 4.37 | 5.11 | 10.38 | 24.38 | 85.93 | 103.73 | 49.94 | 21.99 | 17.69 | 18.80 | 22.60 | 32.94 | 43.70 | 31.15 |
| GRC | Stock market turnover ratio (%) | 37.44 | 40.97 | 76.42 | 84.39 | 137.28 | 66.27 | 38.69 | 31.15 | 40.90 | 35.94 | 48.27 | 60.88 | 61.94 | 25.47 |

Source: Author's elaboration on data from the Global Financial Development Database (GFDD)

Table 11. Disaggregated measure of financial development by country, period 1995-2007 (continued)

| Country | Indicator Name | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| IRL | Domestic credit to private sector (% of GDP) | 68.71 | 73.26 | 82.08 | 87.17 | 101.23 | 104.61 | 109.72 | 108.79 | 113.78 | 133.37 | 159.91 | 181.04 | 200.15 | 221.64 |
| IRL | Liquid liabilities to GDP (%) | 58.43 | 68.81 | 69.75 | 71.90 | 75.74 | 77.97 | 77.50 | 76.20 | 78.08 | 82.39 | 87.61 | 93.95 | 98.21 | 107.23 |
| IRL | Stock market capitalization to GDP (%) | 52.81 | 40.63 | 50.34 | 64.14 | 67.98 | 72.39 | 73.73 | 57.08 | 49.65 | 55.64 | 56.56 | 62.40 | 62.65 | 39.58 |
| IRL | Stock market total value traded to GDP (%) | 13.03 | 16.95 | 17.06 | 32.69 | 46.75 | 30.32 | 17.31 | 22.97 | 26.32 | 24.87 | 26.93 | 32.59 | 43.22 | 35.69 |
| IRL | Stock market turnover ratio (%) | 46.37 | 40.70 | 39.68 | 74.99 | 77.02 | 20.46 | 29.03 | 46.80 | 55.77 | 42.68 | 56.41 | 57.44 | 84.42 | 35.87 |
| ITA | Domestic credit to private sector (% of GDP) | 55.89 | 54.27 | 55.04 | 57.58 | 70.14 | 75.51 | 77.49 | 79.58 | 83.21 | 84.83 | 88.99 | 94.47 | 100.57 | 104.75 |
| ITA | Liquid liabilities to GDP (%) | 60.10 | 57.86 | 54.18 | 50.86 | 53.08 | 55.23 | 55.08 | 56.12 | 56.88 | 56.70 | 58.76 | 61.10 | 67.29 | 76.58 |
| ITA | Stock market capitalization to GDP (%) | 17.22 | 18.98 | 24.17 | 37.02 | 52.74 | 63.23 | 56.98 | 42.53 | 39.44 | 42.25 | 44.55 | 49.12 | 51.56 | 36.50 |
| ITA | Stock market total value traded to GDP (%) | 9.10 | 7.69 | 12.13 | 27.31 | 41.11 | 56.09 | 58.51 | 46.01 | 43.41 | 44.22 | 53.78 | 66.82 | 89.17 | 68.90 |
| ITA | Stock market turnover ratio (%) | 44.59 | 42.57 | 68.42 | 104.96 | 84.19 | 111.51 | 86.23 | 103.60 | 111.03 | 109.71 | 140.13 | 148.49 | 210.92 | 79.43 |
| NLD | Domestic credit to private sector (% of GDP) | 93.23 | 99.22 | 104.59 | 114.97 | 125.36 | 134.20 | 135.30 | 141.16 | 147.99 | 157.83 | 165.04 | 167.19 | 188.06 | 193.16 |
| NLD | Liquid liabilities to GDP (%) | 78.23 | 78.99 | 78.31 | 41.03 | 49.19 | 92.15 | 95.07 | 97.49 | 101.69 | 105.51 | 111.48 | 117.63 | 121.99 | 129.89 |
| NLD | Stock market capitalization to GDP (%) | 81.24 | 86.22 | 103.17 | 132.41 | 155.37 | 161.85 | 136.87 | 102.15 | 90.94 | 88.95 | 89.45 | 102.11 | 116.18 | 82.53 |
| NLD | Stock market total value traded to GDP (%) | 52.96 | 69.09 | 75.12 | 87.09 | 107.53 | 141.83 | 212.67 | 179.94 | 101.68 | 109.88 | 125.14 | 143.72 | 192.59 | 179.32 |
| NLD | Stock market turnover ratio (%) | 73.04 | 94.21 | 71.43 | 78.82 | 74.84 | 108.66 | 188.46 | 103.37 | 108.24 | 137.77 | 146.34 | 158.39 | 198.35 | 159.05 |
| PRT | Domestic credit to private sector (% of GDP) | 63.46 | 70.23 | 77.98 | 89.24 | 109.17 | 126.27 | 133.41 | 135.90 | 135.38 | 135.94 | 140.71 | 151.90 | 162.50 | 173.69 |
| PRT | Liquid liabilities to GDP (%) | 89.47 | 89.98 | 86.52 | 83.28 | 86.40 | 92.11 | 91.68 | 88.85 | 89.38 | 89.21 | 93.15 | 98.11 | 101.42 | 112.26 |
| PRT | Stock market capitalization to GDP (%) | 15.69 | 17.69 | 26.17 | 40.94 | 49.86 | 50.35 | 43.99 | 34.53 | 33.97 | 36.21 | 35.72 | 42.40 | 53.18 | 42.16 |
| PRT | Stock market total value traded to GDP (%) | 4.36 | 4.68 | 11.71 | 27.51 | 33.99 | 38.04 | 33.59 | 18.52 | 14.31 | 16.55 | 20.62 | 27.69 | 47.65 | 47.55 |
| PRT | Stock market turnover ratio (%) | 23.16 | 33.34 | 69.15 | 94.58 | 64.72 | 92.06 | 51.54 | 44.52 | 39.48 | 56.11 | 60.76 | 82.09 | 117.23 | 77.73 |
| ESP | Domestic credit to private sector (% of GDP) | 72.28 | 73.19 | 78.25 | 85.15 | 89.59 | 97.77 | 101.18 | 105.71 | 113.17 | 124.86 | 145.65 | 166.98 | 187.89 | 202.84 |
| ESP | Liquid liabilities to GDP (%) | 72.63 | 71.59 | 68.23 | 67.98 | 75.30 | 84.73 | 86.77 | 86.70 | 86.68 | 90.17 | 100.51 | 116.85 | 131.94 | 149.62 |
| ESP | Stock market capitalization to GDP (%) | 30.69 | 35.25 | 43.58 | 57.11 | 66.09 | 75.51 | 79.04 | 69.88 | 72.42 | 83.17 | 84.01 | 92.64 | 111.96 | 90.76 |
| ESP | Stock market total value traded to GDP (%) | 10.64 | 24.77 | 58.24 | 95.01 | 114.39 | 140.05 | 148.30 | 138.13 | 121.75 | 106.32 | 121.35 | 141.65 | 174.72 | 177.08 |
| ESP | Stock market turnover ratio (%) | 32.64 | 114.37 | 181.54 | 203.71 | 182.28 | 224.98 | 174.25 | 211.42 | 146.11 | 137.50 | 163.93 | 168.56 | 183.54 | 168.74 |
| SWE | Domestic credit to private sector (% of GDP) | 97.24 | 95.87 | 96.88 | 97.37 | 98.11 | 42.32 | 97.87 | 99.11 | 99.82 | 101.33 | 107.86 | 112.81 | 121.47 | 127.64 |
| SWE | Liquid liabilities to GDP (%) | 47.40 | 50.53 | 51.38 | 44.91 | 40.20 | 39.76 | 42.92 | 45.94 | 46.00 | 45.26 | 46.59 | 49.13 | 51.49 | 56.33 |
| SWE | Stock market capitalization to GDP (%) | 63.35 | 79.24 | 96.76 | 105.66 | 123.99 | 134.27 | 116.82 | 86.17 | 80.68 | 96.06 | 104.38 | 123.06 | 133.34 | 91.78 |
| SWE | Stock market total value traded to GDP (%) | 36.82 | 42.84 | 58.51 | 72.91 | 83.98 | 121.96 | 143.26 | 107.87 | 84.13 | 97.01 | 117.18 | 143.66 | 183.50 | 170.22 |
| SWE | Stock market turnover ratio (%) | 57.99 | 62.49 | 71.92 | 75.68 | 74.24 | 117.48 | 113.55 | 101.05 | 103.90 | 118.58 | 119.94 | 137.88 | 157.10 | 143.82 |
| GBR | Domestic credit to private sector (% of GDP) | 111.77 | 115.67 | 116.44 | 115.97 | 118.37 | 129.47 | 134.63 | 139.22 | 143.53 | 151.16 | 158.54 | 170.15 | 186.35 | 211.43 |
| GBR | Liquid liabilities to GDP (%) | 63.60 | 70.08 | 79.34 | 92.32 | 98.16 | 100.63 | 106.04 | 107.86 | 108.67 | 113.24 | 121.01 | 130.49 | 141.28 | 163.20 |
| GBR | Stock market capitalization to GDP (%) | 113.72 | 127.13 | 139.46 | 149.86 | 174.01 | 179.59 | 157.33 | 127.78 | 121.09 | 126.65 | 128.02 | 139.51 | 140.76 | 103.40 |
| GBR | Stock market total value traded to GDP (%) | 42.35 | 43.97 | 52.36 | 68.39 | 83.43 | 105.38 | 122.87 | 119.35 | 115.79 | 140.31 | 171.57 | 171.49 | 262.23 | 305.33 |
| GBR | Stock market turnover ratio (%) | 38.32 | 37.00 | 43.46 | 53.29 | 52.66 | 69.25 | 80.58 | 93.31 | 98.42 | 133.24 | 141.78 | 123.96 | 259.59 | 236.83 |

Source: Author's elaboration on data from the Global Financial Development Database (GFDD)

Table 12 Standardized Financial Development Index by country, period 1995-2007

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | Average |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| INDEXAUT | -0.32 | -0.35 | -0.39 | -0.37 | -0.41 | -0.42 | -0.43 | -0.45 | -0.43 | -0.38 | -0.28 | -0.20 | -0.14 | -0.35 |
| INDEXBEL | -0.50 | -0.45 | -0.41 | -0.30 | -0.26 | -0.30 | -0.31 | -0.35 | -0.36 | -0.29 | -0.20 | -0.11 | -0.02 | -0.30 |
| INDEXDEU | -0.25 | -0.16 | -0.23 | -0.17 | -0.11 | 0.03 | 0.15 | 0.15 | 0.06 | 0.05 | 0.14 | 0.26 | 0.34 | 0.02 |
| INDEXDNK | -0.56 | -0.53 | -0.46 | -0.37 | -0.38 | -0.06 | -0.08 | -0.17 | -0.16 | -0.09 | 0.06 | 0.15 | 0.27 | -0.18 |
| INDEXESP | -0.47 | -0.23 | 0.05 | 0.26 | 0.33 | 0.57 | 0.51 | 0.55 | 0.37 | 0.37 | 0.55 | 0.74 | 1.01 | 0.36 |
| INDEXFIN | -0.50 | -0.48 | -0.42 | -0.31 | 0.02 | 0.40 | 0.38 | 0.23 | 0.11 | 0.13 | 0.27 | 0.42 | 0.63 | 0.07 |
| INDEXFRA | -0.33 | -0.38 | -0.31 | -0.32 | -0.23 | 0.00 | 0.05 | -0.03 | -0.05 | -0.01 | 0.02 | 0.20 | 0.35 | -0.08 |
| INDEXGBR | -0.08 | -0.02 | 0.08 | 0.21 | 0.33 | 0.49 | 0.54 | 0.50 | 0.49 | 0.69 | 0.85 | 0.89 | 1.55 | 0.50 |
| INDEXGRE | -0.67 | -0.64 | -0.53 | -0.42 | 0.07 | 0.01 | -0.25 | -0.36 | -0.38 | -0.37 | -0.28 | -0.17 | -0.08 | -0.31 |
| INDEXIRL | -0.42 | -0.41 | -0.37 | -0.19 | -0.09 | -0.24 | -0.25 | -0.24 | -0.21 | -0.17 | -0.06 | 0.04 | 0.19 | -0.18 |
| INDEXITA | -0.55 | -0.56 | -0.49 | -0.33 | -0.26 | -0.10 | -0.16 | -0.19 | -0.18 | -0.17 | -0.05 | 0.04 | 0.28 | -0.21 |
| INDEXNLD | -0.21 | -0.19 | -0.14 | -0.17 | -0.16 | -0.04 | -0.08 | -0.15 | -0.11 | -0.03 | 0.00 | 0.07 | 0.35 | -0.07 |
| INDEXPRT | -0.52 | -0.48 | -0.34 | -0.18 | -0.15 | -0.02 | -0.13 | -0.22 | -0.24 | -0.19 | -0.15 | -0.02 | 0.18 | -0.19 |
| INDEXSWE | -0.25 | -0.18 | -0.06 | 0.00 | 0.07 | 0.18 | 0.33 | 0.13 | 0.04 | 0.16 | 0.26 | 0.45 | 0.67 | 0.14 |

Source: Author's elaboration on data from the Global Financial Development Database (GFDD)