



**Clara Rita Duarte da
Rocha**

**IMPACTOS ECONÓMICOS DA FINANCIALIZAÇÃO:
EVIDENCIA PARA OS PAÍSES DA OCDE**

**ECONOMIC IMPACTS OF FINANCIALIZATION:
EVIDENCE FOR THE OECD COUNTRIES**



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Dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Economia, realizada sob a orientação científica da Doutora Maria Elisabeth Teixeira Pereira e Rocha, Professora Auxiliar do Departamento de Economia, Gestão, Engenharia Industrial e Turismo da Universidade de Aveiro, e sob a coorientação científica da Doutora Mara Teresa da Silva Madaleno, Professora Auxiliar do Departamento de Economia, Gestão, Engenharia Industrial e Turismo da Universidade de Aveiro.

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palavras-chave

financiarização, crescimento económico, desigualdade de rendimento, desemprego

resumo

A financiarização traduz-se no aumento em termos de dimensão e da importância do setor financeiro de um país em relação à sua economia em geral. A literatura sobre financiarização tem vindo a crescer nas últimas décadas, tendo esse crescimento sido mais acentuado após 2008, constituindo este trabalho uma contribuição para o conhecimento académico e para esse ramo da literatura.

Na presente dissertação são estudados e aferidos os impactos da financiarização no crescimento económico, desigualdade de rendimento e desemprego para os países da OCDE através da aplicação de regressões em painel com efeitos fixos. Adicionalmente, avaliaram-se estes impactos antes e depois da crise de 2007-2009. Os resultados indicam que a financiarização tem um impacto negativo no crescimento e no emprego e observaram-se diferenças antes e depois de 2008, sendo estas mais acentuadas no crescimento económico. A financiarização afeta a macroeconomia e a microeconomia, alterando a forma como os mercados financeiros são estruturados e operados, e influencia o comportamento corporativo e a política económica, sendo evidente um impacto negativo em períodos de crise financeira.

keywords

financialization, economic growth, income inequality, unemployment

abstract

Financialization translates into an increase in size and the importance of a country's financial sector relative to its overall economy. The financialization literature has been growing in the last decades, and this growth has been more pronounced after 2008, and this work contributes to this branch of literature. The impacts of financialization on economic growth, income inequality and unemployment are measured for the OECD countries using fixed-effect panel regressions. In addition, these impacts were assessed before and after the 2007-2009 crisis. The results seem to indicate that financialization has a negative impact on growth and employment, and there were differences before and after 2008, which were more pronounced in economic growth. In fact, financialization affects macroeconomics and microeconomics, changing the way financial markets are structured and operated and influencing corporate behavior and economic policy, with a negative impact in times of financial crisis.

Index

Index of Tables.....	iii
Acronyms list.....	iv
1. Introduction	1
2. Literature Review	3
2.1. Brief historical overview.....	3
2.2. Previous Findings.....	7
3. Data and Methodology	17
3.1. Data.....	17
3.2. Methodology.....	20
4. Results	23
4.1. Financialization and Growth	23
4.2. Financialization and Inequality	24
4.3. Financialization and Unemployment.....	26
5. Conclusion	27
References.....	29

Index of Tables

Table 1 - List of studies regarding financialization.....	15
Table 2 - Summary of Variables.....	18
Table 3 - Descriptive Statistics.....	18
Table 4 - Correlation Coefficients.....	19
Table 5 - Multicollinearity Test - Variance Inflation Factor.....	20
Table 6 - Summary of most relevant previous results.....	20
Table 7 - Expected signs for all variables.....	21
Table 8 - Financialization and Growth.....	24
Table 9 - Financialization and Inequality.....	25
Table 10 - Financialization and Unemployment.....	26

Acronyms list

ACEs - Advanced Capitalist Economies

ECEs - Emerging Capitalist Economies

EU – European Union

FIRE - Finance, Insurance and Real Estate

GDP – Gross Domestic Product

ISIC - International Standard Industrial Classification of All Economic Activities

OECD - Organisation for Economic Co-operation and Development

UK – United Kingdom

US – United States of America

VIF- Variance Inflation Factor

WW II - World War II

1. Introduction

Financialization is a relatively new field of research in Economics and as such a consensual definition or measurement method does not exist. It is being studied by different disciplines within the social sciences spectrum, such as Economics, Sociology and Geography (Zwan, 2014). This might be one of the reasons for the lack of cohesion within this field of research, as pointed by Krippner (2005). Some authors stress out the importance of the conceptualization of financialization, however, this topic still does not appeal to the majority in the scientific community (Engelen, 2008), and the already existing definitions overlap each other, due to the conceptual complexity (Casey, 2011).

More recently, especially after 2008, this thematic has gained growing attention, because it is a concept that is able to relate the thriving of finance in the last decades with the financial crisis that hit the world in 2008 (Lapavitsas, 2011). Research in financialization has increased in the past two decades (Karwowski, Shabani & Stockhammer, 2017), with the number of results for the words “financialization” and “financialisation” increasing from 6630 hits to 18540, between 2011 and 2013¹, on Google Scholar, which can also be explained by the persistence and aftermath of the global economic crisis of 2007-2008 (Aalbers, 2017).

Financialization deserves to be studied once the already existing studies found a “bundle” of negative impacts to the economy. Some of the most commonly referred effects are: inequality (Dore, 2008; Tomaskovic-Devey & Lin, 2014; Treeck, 2009), insecurity (Dore, 2008), diversion of talent (Dore, 2008), trust erosion (Dore, 2008), reduced economic growth (Tomaskovic-Devey, Lin, & Meyers, 2015; Treeck, 2009), investment curtail (Davis, 2017) and economic vulnerability (Deutschmann, 2011; Krippner, 2005; Palley, 2013). Some authors, like Freeman (2010) and Stockhammer (2012), got even more specific and attributed to financialization the responsibility for the Subprime Crisis in the United

¹ Reaching 53400 hits in 27 October 2019.

States (US) and the Great Recession in Europe (Barradas, Lagoa, Leão & Mamede, 2018; Thomson & Dutta, 2015).

The main goal of this research is to assess the impacts of financialization on the economy, most specifically, on the Gross Domestic Product (GDP) growth, income inequality and unemployment. With this purpose, these variables will be studied, for the Organisation for Economic Co-operation and Development (OECD) countries, from 1970-2016, using a fixed effects panel data analysis.

In addition, we will try to investigate if the 2007-2009 crisis caused any disruption on the financialization process. For this purpose, we will also analyze the period before and after 2008.

We concluded that financialization has a negative impact on economic growth and a positive impact on unemployment. Regarding the impact of financialization on inequality, our results were inconclusive. Furthermore, we observed differences on the impacts of financialization on economic growth of the OECD countries, before and after the crisis of 2007-2009, with this being our biggest contribution to the literature.

This work is organized as follows. After this introduction, a second section presents the literature review in which we listed multiple existing definitions of financialization, then we move to the History of financialization to explain its birth and some of the most relevant events in time. Afterwards, some previous results are cited. In section 3 we describe our data and present the methodology used to assess the impacts of financialization. The following section presents the results obtained from our fixed effects panel regression for the studied periods. Lastly, in section 5, we conclude and summarize the limitations of our work, as well as we provide future research suggestions.

2. Literature Review

Financialization has been defined in several different ways by different authors. The concept was born within the Marxist political economy in an attempt to describe the relationship between the thriving of finance and the weak production performance (Lapavitsas, 2011).

According to Epstein (2005, p. 1), “financialization refers to the increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international level. Stockhammer (2004, p. 720) defines financialization as “the increased activity of non-financial businesses on financial markets” and Krippner (2005, p. 174) “as a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production”.

For Hansen (2014) financialization is a cultural process and a way to see the world in a financial perspective. He considers the concept useful to understand the changes in the society and in the financial sector that happened in the last decades, arguing that financialization is a result from neo-liberalism and that its major consequence is financial instability. More recently, Wang (2019) presented a literature review about corporate financialization (at the micro-level), different from the macro perspective of Zou (2018), emphasizing that the different motivations will have a different impact that should guide targeted measures and policies to be undertaken. Palludeto and Filipini (2019) also present an overview of the literature on financialization between 1992 and 2017 using a bibliometric approach, seeking to delineate the state of the art of the existent literature.

2.1. Brief historical overview

Financialization has been analyzed through many different perspectives and disciplines (Aalbers, 2017), which can be summarized in three main categories or lenses: i) the new regime of accumulation, ii) the ascendancy of the

shareholder value and iii) the financialization of the everyday life, as Zwan (2014) describes in her highly cited (647)² state of the art.

Zwan (2014) argues that the “birth” of financialization is not clear. But some authors like Lapavitsas (2011) place the beginning of financialization after the 1970s, as a consequence of the deregulation of financial markets (Palley, 2013), liberalization of capital flows (Palley, 2013), and the collapse of the Bretton Woods System (Dore, 2008; Lapavitsas, 2013). However, other authors just consider that financialization is a result of the post-industrial era, as an escape for capital, since the production was no longer profitable. For Kotz (2010), financialization is linked with neoliberalism, that started in the 1980s, and it is an outcome of the restructuring of capitalism. Foster (2007) adds that this “phenomena” in conjunction with globalization is what has characterized capitalism in the last decades.

Independently of its beginning, financialization is strongly associated with Liberalism (especially with Neoliberalism) and market deregulation (Aalbers, 2017). Between 1850 and 1931, the economic “laissez faire” doctrine became increasingly accepted, and finance and globalization had a great development (Hansen, 2014).

In the 1920s, the financial sector in the US was highly deregulated and the consequence was the Great Depression in 1929. This historical episode had great influence in the regulation of the Financial System after the World War II (WWII), period that was characterized by bigger states (governments), healthy competition between large companies and higher level of market regulation (Kotz, 2010; Pereira, 2019).

After a stable period under the Bretton Woods system (French, Leyshon & Wainwright, 2011), in which there was no financial crisis in the occidental world (Hansen, 2014), developed economies were facing slower growth and high inflation rates (Tomaskovic-Devey & Lin, 2014). This was a dilemma for capital owners, since they had capital and very few investment opportunities, which

² Information verified in 30 June 2019.

banks rapidly answered with new financial instruments (Foster, 2007), backed by floating exchange rates and unregulated capital flows (Thomson & Dutta, 2015).

In the early 1970s, financial activities' profits started growing in comparison with the productive economy (Kotz, 2010). Something that could be related with the international trade expansion and the reallocation of production, which shifted from the occidental economies to east economies, especially to China. But in conjunction with the deregulation of financial markets, by the end of the 70s, the financial sector reached an unprecedented growth (Lapavitsas, 2013) and was able to take rents from the rest of the economy (Tomaskovic-Devey & Lin, 2014). The financial system was not only growing in absolute terms, but also in comparison with the productive sector (Thomson & Dutta, 2015). Freeman (2010) considers that this deregulation is an outcome of the capitalism "laissez faire" experience, based on the assumption of market efficiency.

Financialization first appeared in the United States and United Kingdom (UK) (Kotz, 2010), but quickly was disseminated in a global scale (Dore, 2008). This happened in Ronald Reagan and Margaret Thatcher's governments, who found the support to their measures in academic work, from authors like Milton Friedman and George Stigler (Hansen, 2014). For Deutschmann (2011), financialization (of the American economy) was an outcome of Reagan's policy in the 1980s, to fight economic stagnation. Reagan's measures, high public debt and high interest rates, although seemed effective, just suspended the problem. Neoliberalism became the economic governance model, made possible by the Keynesian contradictions in the post war era (1970's economic stagflation) (Casey, 2011). As for the spreading and contagion from the US to the rest of the world, the power of the US dollar, as a reserve and transaction unit worldwide, played a big role (Thomson & Dutta, 2015).

Parenteau (2001) considered the 1990's economic and financial bubble to be the extreme of financialization, since this crisis was an outcome of several aspects that characterize this phenomenon. Zwan (2014) studies financialization through three different lenses, two of them being what Parenteau (2001) considered to be the culprits of the 90's bubble: Shareholder Value doctrine and Financialization of everyday. Shareholder Value consists in a performance-based

executive compensation (Dore, 2008) and financialization of everyday describes the availability of financial products and services to non-professional investors (Erturk, Froud, Johal, Leaver, & Williams, 2007). These two types of Financialization in conjunction with bad signaling in the financial markets, contributed to the 90's bubble (Parenteau, 2001).

In the years prior to the Great-Depression, the world economy, but especially the US economy, was experiencing major changes and the economic actors were no longer behaving in accordance to their traditional roles. After the financial market deregulation, big non-financial corporations were able to financialize themselves in the markets without bank intermediation. This caused the banks to also shift their businesses, investment banks were now focused on big fusions and acquisitions and the commercial banks started to act like the previous but, targeting the households (Lapavitsas, 2011). This phenomenon was accompanied by the growth of imbalances in the world economy. Eastern Asian economies were now increasing their savings in US dollar, that flooded the American economy causing excess liquidity, that in turn, decreased interest rates and made credit acquisition easy (Lucarelli, 2012). This credit had high demand from the households, that faced wage stagnation and saw the credit as a way of maintaining their consumption levels (Thomson & Dutta, 2015).

These events, that are commonly used to describe financialization, were some of the main drivers for the real estate bubble in the US. This crisis was not conscribed to the US because of globalization, more specifically, financial globalization and market deregulation. The power of the US dollar also increased the contagion effect, as it is the main reserve and exchange currency. Meaning that all its fluctuations had a major impact on its holders, i.e. the whole world (Lucarelli, 2012).

2.2. Previous Findings

Krippner (2005) focused her research on the US Economy, between 1950 and 2001, with the main goal to understand if the US Economy became financialized during this period. To do so, this author carries out a graphical analysis of key variables: relative industry shares of employment, relative shares of current-dollar GDP, and relative industry shares of corporate profits. The study includes the three biggest industries, manufacturing, FIRE (Finance, Insurance and Real Estate) and services, which also suffered the biggest sectoral changes. The author found that, in the US, the financial channels are contributing more and more to the accumulation process, and this is more evident on a profit perspective opposed to an employment view. Krippner goes even further, arguing that financialization became the most critical aspect of the economy and it represents a new phase of capitalism.

With his paper, Palley (2013), intends to explain what financialization is and its importance. He does so by studying the built of financialization in the US Economy, where it is most developed. He analyzes the evolution of debt (public and private, in the financial sector and in the non-financial sector), contribution of the FIRE sector to the total output, FIRE employment as share of total employment, per capita income growth rates, gross investment spending as share of GDP, relationship between productivity and wages, capital share, industry profit (financial vs non-financial), among others. The author main conclusions are that FIRE contribution to GDP, as well as FIRE employment, is increasing, while GDP is growing very slowly. With these, the sharper is the increase in profits coming from the financial sector. All these changes are accompanied by an increase in the levels of debt and a change in corporate behavior, where companies are strongly influenced by the financial markets (Sirignano & Cont, 2019). From 1973 to 2005, it is possible to observe an increasing dominance of finance in several aspects of the economy, which translates into financialization growth.

Assa (2012) studied the impact of financialization on economic growth, income inequality and unemployment; and the increase of financialization levels in OECD countries. To do so, the author undertakes a panel data analysis on 33 OECD countries for a period of 38 years (1970-2008), using value added in finance and employment in finance as proxies for financialization. Three models were estimated using fixed-effects panel regressions with Gini index, unemployment rate and GDP growth as dependent variables and GDP growth per capita as control variable. The author concluded that financialization has negative effects on economic growth, employment and equality. And, this phenomenon is common to all OECD countries.

To assess if financialization reduces economic growth, Tomaskovic-Devey, Lin and Meyers (2015), conducted a study using industry level data for the United States, from 1970 to 2008, where they estimated a single equation error-correction model. They found that the overall economic growth is negatively impacted by the increasing financialization of the non-financial sector. Since the diversion of investment from the non-financial companies to finance, contributes to lower value added. This negative impact was found only on a macroeconomic level, financialization is shown to favor capital in detriment of labor and the state.

To examine the effect of financialization on inequality, Gołębiowski, Szczepankowski and Wiśniewska (2017) run a panel data analysis on seven European countries (from the G7 and Central and Eastern Europe), from 2004 until 2013. Also, with the purpose of understanding if these different groups of countries experience financialization in the same way, or if there are country/region specific effects. To find if there are country specific factors, the authors chose to use fixed effects estimators in their research. Using the Gini coefficient as dependent variable, to measure inequality; Value Added in Finance as a Percentage of Value Added, Market Capitalization as share of GDP, Employment in Finance as a Share of Total Employment, and Private Debt as a Share of GDP, as independent variables that represent financialization; and Unemployment Rate, GDP Growth Rate, Female Unemployment Rate, Average Wage Growth Rate, Social Expenditure as Share of GDP, Current Account Balance and Personal Remittances as a Share of GDP, as control variables. The

authors also built a synthetic index of financialization using the average of all explanatory variables. However, the study did not confirm the initial hypothesis. They found a negative effect of financialization on the Gini Coefficient, meaning that financialization reduces inequality. This result, as the authors highlighted, is different as compared to that obtained by various other authors.

Stolbova, Battiston, Napoletano and Roventini (2017) analyzed data from 1999 to 2016, to find symptoms of financialization in the European Union (EU) members. They looked into the following indicators of financialization: ratio of total financial assets to GDP, on a sector level (financial corporations and non-financial corporations); ratio of gross value added to the total gross value added, again for financial and non-financial corporations; ratio of property income receivable to total income, for non-financial corporation and; percentage of total loans to both financial and non-financial firms. The authors found evidence of aggravation of financialization in the EU, that only had a slow down with the 2008 financial crisis. This process is more significant in the United Kingdom while comparing to the other EU economies.

Schwan (2017) builds his research on regional levels of financialization within 18 European countries, translating in 274 regions. His main goal was to understand what contributes to an uneven level of financialization among different regions, and for that the author builds an OLS regression model, taking financialization (finance and insurance activities as percentage of GDP) as dependent variable and, the different types of debt as independent variables, as well as variables that represent the Financial Market, Economic sectors and Politics and Demographics, as control variables. His main conclusion is that of all types of debt, household debt is the biggest contributor to regional financialization. In addition, it was possible to see that the most financialized regions are the ones with more financial tradition, but there are also emerging new financialization islands, as they are financialized regions ringed by non-financialized ones. The Schwan (2017) interprets this to be a new way of development divergence within European countries.

In his paper, Epstein (2018) investigates the effects that financial institutions, as well as financial relations have on wealth and economic development, in the US Economy. For that, he analyzes variables like Financial Rents, Financial Profits, Allocation of Resources to Finance (more specifically misallocation) and the Costs of Finance. He states that the power of Finance has been growing since Thatcher and Raegan's mandates, only to be temporarily halted by the Great Financial Crisis in 2008. This system is characterized by what the author labels as "roaring banking" (financial institutions with speculative activities) and financialization. Epstein finds this system to be very inefficient, for the costs it incurs in the society (US\$ 23 trillion) which are extremely high compared with the gains for the financial sector (US\$ 4.2 trillion). Other consequences are, instability, inequality and misallocation of resources. Altogether, translates to what he calls the "social inefficiency of finance".

Barradas, Lagoa, Leão and Mamede (2018) centered their research in Portugal. They analyze indicators like Total Loans growth rate, Household debt as percentage of GDP, Corporative Debt as percentage of GDP, the Importance of the Financial Sector as a percentage of Gross Value Added, Financial Assets of the Economy as percentage of GDP, among others. They try to explain how financialization differs in the southern economies, compared to more developed countries and how financialization leads to crisis. They found that financialization is clearly present in Portugal, since it is possible to observe a growing contribution of the financial sector to the GDP and the development of other aspects that characterize financialization, like participation of non-financial firms in the financial sector, or the emanation of new financial institutions. They also argue that financialization played a major role when it comes to the global financial crisis in Portugal, as it left the economy very debilitated, especially through high levels of indebtedness of households, which also emphasizes the distinction of the Portuguese financialization, as it occurred by the dependence on banks for financing, opposite to the growth of capital markets in the more developed countries.

Battiston, Guerini, Napoletano and Stolbova (2018) summarize the signs of financialization found in the European Union (EU) economies over the last 20

years, analyze its consequences and propose some policy measures. To analyze the presence of financialization in the EU, the authors use the following indicators: the ratio of Total Financial Assets to the GDP of an economy; the ratio of Property Receivable to Gross Entrepreneurial Income of non-financial corporations; percentage of total loans granted to non-financial corporations in the Euro area and; cumulative growth rates of loans granted to non-financial corporations versus financial corporations. They found evidence that financialization affects the EU countries and that the phenomenon had a steady growth in the last twenty years and only slowed down temporarily after the Great Recession, to recover its growth quickly after. The United Kingdom experienced an even quicker increase in the levels of financialization after the crisis. On the other hand, Germany is the less financialized country and unlike the other countries, managed to increase considerably their production output after the crisis. The authors argue that the high levels of financialization are a barrier to some of the EU 2030 objectives and therefore should be managed. Their policy suggestions for that are: encouraging the demand on the real economy; state intervention, by championing other (innovative) industries; the discouragement of profit short-termism and; the setting of a rule for the ratio of loans granted by banks to the financial and non-financial companies.

In their study, Stockhammer and Kohler (2019) studied household financialization in developed economies and how the different levels of financialization led to distinct demand regimes, that they then classify using a Post Keynesian approach. The selected countries were grouped as follows: i) Northern Europe: Germany, Austria and The Netherlands; ii) Southern Europe: Greece, Ireland, Italy, Portugal and Spain; iii) Anglo-Saxons: US and UK; and iv) Eastern Europe: Poland, Czech Republic, Slovakia, Hungary and Slovenia. Northern Europe is classified as an export led regime with moderate levels of financialization. Southern Europe and Anglo-Saxon countries are considered to have debt-driven demand regimes and are highly financialized. Finally, Eastern European countries had a catching-up development process supported by foreign direct investment with a limited level of financialization.

To measure financialization Stockhammer and Kohler (2019) use the debt-to-net disposable income ratio for households and by real property prices. They also analyze the current account-to-GDP ratio, as they affirm that the debt-driven demand and the export-driven demand are closely connected, and this ratio allows to identify the export-driven economies. The link between the two demand regimes is what keeps them working, provided the export driven economies rely on the imports and consumption levels from the debt-led countries. This contributes to surpluses on the Northern Economies that are then transferred to the Southern and Eastern economies as loans and foreign direct investment, respectively. As the debt-driven model is prone to debt crisis and bubbles on property prices, and the export-driven model depends on the former, this tends to cause macroeconomic instability. The authors also conclude that there is no significant change before and after the Great Recession, but they point a difference between the more financialized groups, as Southern European countries diminished their deficits, the Anglo-Saxon countries maintained them.

Bonizzi, Kaltenbrunner and Powell (2019) study the not so explored field of the financialization literature: financialization of the emerging capitalist economies (ECEs). Through the analysis of previous works, they explain how financialization experienced in these countries differs from the advanced capitalist economies (ACEs), how these different types of financialization interact and what the consequences for the emerging economies are. They state that the ECEs have a subordinate type of financialization and this affects production, circulation and finance, intensifying their already subordinate position in the global economy while exacerbating the hegemonic position of the ACEs, above all the US. On the production side, ECEs deepen their subordinate role as their main contributions to the supply chain are cheap labor and raw/intermediate materials, which allows them to capture only a small fraction of the total value added. On circulation, the authors recognize that these economies have an export-led growth model that provides them with a big influx of foreign currency, allowing them to engage in foreign exchange markets, causing instability and volatility of their own currency. In regard to Finance, ECEs receive capital inflow and investment but majorly short-term, as investors seek for quick profit instead

of long-term investment and growth, this leads again to volatility and vulnerability of these economies. Table1 highlights and summarizes some of the empirical studies regarding financialization.

Authors	Countries	Time	Variables	Methodology	Results/Conclusions
Palley (2013n)	US	1973-2005	Debt (public and private, in the financial sector and in the non-financial sector) contribution of the FIRE sector to the total output FIRE employment as share of total employment, per capita income growth rates, gross investment spending as share of GDP relationship between productivity and wages capital share industry profit (financial vs non-financial)	Descriptive and graphical analysis	It is possible to observe an increasing dominance of finance in several aspects of the economy, which translates into the growing of financialization GDP is growing at a much smaller rate than the FIRE employment and FIRE sector output increases. This is accompanied by a sharper increase in the financial sector's profits
Dore (2008)	mainly for the US	Post War Period	Financial and non-financial corporations' profits; speculative activities' profits and evolution; payments to the financial market; the change to the shareholder value orientation; and equity ownership.	Descriptive analysis	(1) An increase in the proportion of the income generated by the industrial/post-industrial economies which accrues to those engaged in the finance industry, as a consequence of three things. (2) The growth in and increasing complexity of intermediating activities, very largely of a speculative kind, between savers and the users of capital in the real economy. (3) The increasingly strident assertion of the property rights of owners as transcending all other forms of social accountability for business corporations. (4) Increasing efforts on the part of government to promote an "equity culture" in the belief that it will enhance the ability of its own nationals to compete internationally.
Assa (2012)	OECD countries	1970-2008	Dependent: GDP Growth, Gini Index, Unemployment Independent: Value added in FIRE as % of total value added, Employment in FIRE as % of total Employment Control: Per capita Income	Fixed Effects Panel Regression	Financialization (Value added in Fire as % of total value added and Employment in FIRE as % of total Employment) have: - negative impact on GDP Growth - positive impact on unemployment and Gini Index The coefficients of the independent variables have the expected sign

Table 1 - List of studies regarding financialization (Source: own elaboration)

Tomaskovic-Devey, Lin and Meyers (2015)	US	1970-2008	Financial investments include loans to shareholders, investment in government securities, investment in tax exempt securities, mortgage and real estate loans, and a residual category "other investments". Value Added	Single equation error-correction model	They found that the overall economic growth is negatively impacted by the increasing financialization of the non-financial sector.
Gołębowski, Szczepankowski and Wiśniewska (2017)	7 European countries (from the G7 and Central and Eastern Europe),	2004-2013	Gini coefficient as dependent variable Value Added in Finance as a Percentage of Value Added, Market Capitalization as share of GDP, Employment in Finance as a Share of Total Employment, and Private Debt as a Share of GDP, as independent variables that represent financialization Unemployment Rate, GDP Growth Rate, Female Unemployment Rate, Average Wage Growth Rate, Social Expenditure as Share of GDP, Current Account Balance and Personal Remittances as a Share of GDP, as control variables	Fixed Effects Panel Regression	The study did not confirm the initial hypothesis. They found a negative effect of financialization on the Gini Coefficient. This result, as the authors highlighted, is different obtained by various other authors.
Schwan (2017)	18 European countries		Finance and insurance activities as percentage of GDP - dependent variable Debt - independent variable Variables that represent the Financial Market, Economic sectors and Politics and Demographics - control variables	Ordinary Least Squares regression model	Household debt is the biggest contributor to regional financialization
Stolbova, Battiston, Napoletano and Roventini (2017)	Euro Area countries	1999-2016	Ratio of total financial assets to GDP, on a sector level (financial corporations and non-financial corporations); Ratio of gross value added to the total gross value added, again for financial and non-financial corporations; Ratio of property income receivable to total income, for non-financial corporation and; Percentage of total loans to both financial and non-financial firms	Descriptive analysis	Evidence of aggravation of financialization in the EU, that only had a slow down with the 2008 financial crisis

Table 1 - (Continued)

Battiston et al. (2018)	EU countries	last 20 years	The ratio of Total Financial Assets to the GDP of an economy; the ratio of Property Receivable to Gross Entrepreneurial Income of non-financial corporations; percentage of total loans granted to non-financial corporations in the Euro area and; cumulative growth rates of loans granted to non-financial corporations versus financial corporations	Graphical analysis and comparison of indicators (and literature review)	They found evidence that financialization affects the EU countries and that the phenomenon had a steady growth in the last twenty years and only slowed down temporarily after the Great Recession, to recover its growth quickly after. The UK experienced an even quicker increase in the levels of financialization after the crisis. On the other hand, Germany is the less financialized country and unlike the other countries, managed to increase considerably their production output after the crisis.
Epstein (2018)	US		Financial Rents, Financial Profits, Allocation of Resources to Finance (more specifically misallocation) and the Costs of Finance.	Descriptive analysis	The power of Finance has been growing since Thatcher and Raegan's mandates, only to be temporarily halted by the Great Financial Crisis in 2008. This system is characterized by what the author labels as "roaring banking" (financial institutions with speculative activities) and financialization. Epstein finds this system to be very inefficient, for the costs it incurs in the society (US\$ 23 trillion) are extremely high compared with the gains for the financial sector (US\$ 4.2 trillion). Other consequences are, instability, inequality and misallocation of resources.
Stockhammer and Kohler (2019)	Northern Europe: Germany, Austria and The Netherlands Southern Europe: Greece, Ireland, Italy, Portugal and Spain Anglo-Saxons: US and UK	2000-2016	Deb-to-net disposable income ratio for households and by real property prices Current account-to-GDP ratio	Descriptive Analysis	The link between the debt-driven demand and the export-driven demand regimes is what keeps them working. As the debt-driven model is prone to debt crisis and bubbles on property prices, and the export-driven model depends on the former, this tends to cause macroeconomic instability. The authors also conclude that there is no significant change before and after the Great Recession.

Table 1 - (Continued)

3. Data and Methodology

The goal of this work is to study the impacts of financialization in the OECD economies, especially on growth, income inequality and unemployment. Assa (2012) is the main influence of this research, but we will follow Krippner's definition of the FIRE³ sector instead, due to data availability constraints. We concentrate in the FIRE sector since most of the previous literature does the same.

3.1. Data

This study will consider three periods of analysis that overlap each other. This happens due to the lack of data for some of the indicators. When we assess the impact of financialization on growth we analyze data from 1970 to 2017, on unemployment from 1990 to 2016 and lastly on inequality from 1987 to 2016, but with some gaps. All the data was collected from the OECD database⁴.

The countries analyzed in each model also vary. Once more, due to the lack of data for all indicators for the entire time period. To study growth and unemployment, we analyze 33 OECD countries: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom. For inequality all previous countries are analyzed, apart from Hungary and Korea, reducing the sample of countries to 31.

As the goal is to measure the impact of financialization and there is no generally accepted definition, two proxies are used. Following authors like Assa (2012) and Gołębiowski, Szczepankowski and Wiśniewska (2017), we will take employment in FIRE as percentage of total employment and value added in FIRE as a percentage of total value added to quantify financialization.

³ Finance, insurance and real estate activities.

⁴ Organisation for Economic Co-operation and Development. (2019). Annual National Accounts [Data file]. Retrieved from <https://stats.oecd.org/>

Table 2 presents a summary of all the variables used in this study.

Phenomenon	Variable	Abbreviation	Description	Authors
Economic Growth	GDP growth rate	<i>gdp_growth</i>	real annual growth rates of gross domestic product	Assa (2012)
Inequality	Gini index	<i>gini</i>	GINI coefficient for income inequality before taxes	Assa (2012) and Gołębiowski, Szczepankowski and Wiśniewska (2017)
Unemployment	Unemployment rate	<i>unempl</i>	annual rate of unemployment growth	Assa (2012)
Financialization 1	Employment in the FIRE sector	<i>empl_fire</i>	employment in FIRE as percentage of total employment growth	Assa (2012)
Financialization 2	FIRE Value Added	<i>fire_va</i>	value added in FIRE as a percentage of total Value Added growth	Assa (2012) and Gołębiowski, Szczepankowski and Wiśniewska (2017)

Table 2 - Summary of Variables (Source: Own elaboration)

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>gdp_growth</i>	807	0,0259127	0,0303392	-0,14814	0,25557
<i>gini</i>	277	0,3383682	0,0430489	0,26000	0,48100
<i>unempl</i>	681	0,0810103	0,0418338	0,01800	0,27500
<i>empl_fire</i>	807	0,0400019	0,017074	0,01243	0,12588
<i>fire_va</i>	807	0,1568065	0,0461022	0,08123	0,37964

Table 3 - Descriptive Statistics (Source: own elaboration)

In table 3, a summary of descriptive statistics is presented. Starting with ***gdp_growth*** it is possible to observe that the average growth for all the countries is 2.59%, with a standard deviation of 3.03%. The highest decrease in GDP was 1.48% and the maximum growth was 2.56%. Regarding the Gini index, ***gini***

registered an average of 0.34 with a standard deviation of 0.043. The lowest gini value observed was 0.26 and the highest 0.48.

The average unemployment rate is 8.1% with a standard deviation of 4.3%, registering a minimum of 1.8% and a maximum of 27.5%. The **empl_fire** has an average of 4% and a standard deviation of 1.71%. The lowest percentage of employment in the FIRE sector to total employment growth is 1.24%, registered in Lithuania in 2001, and the highest 12.59%, in Luxembourg, in 2008. For **fire_va** an higher average was registered, the Value Added in the FIRE sector as a percentage of total Value Added growth is on average 15.68% with a standard deviation of 4.61%. The minimum of **fire_va** was 8.12%, in Norway in 1997, and the maximum was 37.96% registered in Luxembourg.

	gdp_growth	gini	unempl	empl_fire	fire_va
gdp_growth	1.0000				
gini		1.0000			
unempl			1.0000		
empl_fire	-0.0006	0.1491**	-0.3528***	1.0000	
fire_va	-0.1152***	0.3048***	-0.1125***	0.7373***	1.0000

Table 4 - Correlation Coefficients (Source: own elaboration)

Notes: p-values in (.). Please see table 2 for variables definitions. *, **, *** means statistically significant at 10%, 5% and 1%, respectively.

Missing values were skipped

Table 4 shows the correlation coefficients between all the variables used in this research. As expected, the variables that represent financialization (**empl_fire** and **fire_va**) have a negative correlation with **gdp_growth**, but this relationship is only statistically significant for **fire_va**.

Moreover, **fire_va** and **empl_fire** have a positive and statistically significant correlation with **gini**, as anticipated by Assa (2012). Additionally, **unempl** has a negative correlation with **empl_fire** and **fire_va**.

It's also possible to observe high correlation between **empl_fire** and **fire_va**, which can be translated into multicollinearity issues.

3.2. Methodology

To ensure the non-existence of multicollinearity, the Variance Inflation Factor (VIF) test was performed. According to Kutner, Nachtsheim, Neter and Li (1996, pp. 408–409), VIF “measures how much of the variance of the estimated regression coefficients are inflated as compared to when the predictor variables are not linearly related” and “10 is frequently taken as an indication that multicollinearity may be unduly influencing the least squares estimates”.

Variable	Model 1		Model 2		Model 3	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
<i>empl_fire</i>	2.19	0.456393	1.43	0.700653	2.25	0.445403
<i>fire_va</i>	2.19	0.456393	1.43	0.700653	2.25	0.445403
Mean VIF	2.19		1.43		2.25	

Table 5 - Multicollinearity Test - Variance Inflation Factor (Source: own elaboration)

On table 5, the results show that, although the existence of high correlation between *empl_fire* and *fire_va* was found, there is no multicollinearity between the variables for all the models.

Table 6 presents a summary of previous authors methodologies, dependent variables, independent variables and sign obtained by these authors results after the methodologies application.

Authors	Methodology	Dependent Variables	Independent Variables	Sign
Assa (2012)	Fixed Effects Panel Regression	GDP growth Gini Index Unemployment	Employment in	Negative
			FIRE as % of total	Positive
			Employment	Positive
Tomaskovic-devey, Lin and Meyers (2015)	Single Equation Error-Correction Model	Value Added Income Pool Employment Assets	Financial Assets as percentage of total assets	Negative
			the contribution of the financial sector (FIRE) to total value added	Positive
			the proportion of the employed in the FIRE sector in the total employment	Negative
Gołębowski, Szczepankowski and Wiśniewska (2017)	Fixed Effects Panel Regression	Gini Index	private debt to GDP ratio	Negative
			stock market capitalization to GDP ratio	Negative
			a synthetic indicator of financialization, which is the average of all the above-mentioned indicators that have underwent prior normalization by way of unitarization	Negative

Table 6 - Summary of most relevant previous results (Source: own elaboration)

The estimated models are based in the following regression estimates through the panel fixed effects model which was previously used by other authors (Assa, 2012; Gołębiowski et al., 2017) as an appropriate methodology to test financialization impacts over growth, inequality and unemployment. Additionally, the following models will be estimated until and after 2008, to access the impacts of the 2007-2009 Crisis.

1. Financialization and Growth

$$a. \text{gdp_growth} = \alpha + \beta_1 \text{fire_va} + \beta_2 \text{empl_fire} + \varepsilon$$

2. Financialization and Inequality

$$a. \text{gini} = \alpha + \beta_1 \text{fire_va} + \beta_2 \text{empl_fire} + \varepsilon$$

3. Financialization and Unemployment

$$a. \text{unempl} = \alpha + \beta_1 \text{fire_va} + \beta_2 \text{empl_fire} + \varepsilon$$

Although, (Assa, 2012) used fixed effects panel regression, we tested if this was the most appropriate for our data set, as the analyzed period was different. To test if fixed effects was more adequate than random effects, we performed the Hausman test.

The null hypothesis in the Hausman test is that the estimators for fixed effects and for random effects are not substantially different. And, the rejection of the null hypothesis favors the use of fixed effects instead of random effects (Gujarati, 2004, p. 651). Which was the result for all our three models, that in turn where estimated through fixed effects panel regression.

Dependent Variables	Independent Variables	Expected Sign
<i>gdp_growth</i>	<i>fire_va, empl_fire</i>	Negative
<i>Gini</i>	<i>fire_va, empl_fire</i>	Positive
<i>unempl</i>	<i>fire_va, empl_fire</i>	Positive

Table 7 - Expected signs for all variables (Source: own elaboration)

Table 7 outlines the expected impact of our independent variables on the dependent variables. As previously mentioned, it is expected that the two

measurements of financialization, ***fire_va*** and ***empl_fire***, have a negative impact on ***gdp_growth*** and a positive impact on ***gini*** and ***unempl***.

4. Results

This chapter presents and discusses the panel fixed effect model results implementation regarding equations 1 to 3, which are presented in the previous section.

4.1. Financialization and Economic Growth

Table 8 summarizes the results where the dependent variable is ***gdp_growth***. When analyzing the period, from 1970 until 2017, the model has global statistical significance. The constant and ***fire_va*** are statistically significant for the conventional levels, but ***empl_fire*** is not. These results are somewhat in line with the previous literature (Tomaskovic-Devey et al., 2015; Assa, 2012; Palley, 2013; Treeck, 2009), as one unit increase in the share of FIRE in total value added is followed by a decrease of 0.63 on GDP growth.

When focusing on the period between 1970 and 2007, the model keeps its statistical significance, but loses explanatory power. For this time frame, the model only explains 5% of the changes in GDP growth, compared to 11.88% in the full period. Here, all variables reveal to have statistical significance and the independent variables have the expected sign (see table 7). When ***fire_empl*** grows by one unit, ***gdp_growth*** decreases by 0.9, and a growth of one unit in ***fire_va*** is followed by a reduction of 0.3 on ***gdp_growth***.

For the period after 2008, the model is only globally statistically significant for the significance level of 10%, although its explanatory power increased to 13.83%. ***empl_fire*** is not statistically significant, while the constant and ***fire_va*** are statistically significant for 10 and 5% significance levels. As in the previous periods, the variables have the expected impact on ***gdp_growth***. An increase of one unit in ***fire_va*** translates into a decrease of 1.36 on ***gdp_growth***.

It is possible to observe the negative impact of financialization in the economic growth, as argued by the literature (Assa, 2012; Palley, 2013; Tomaskovic-Devey et al., 2015; Treeck, 2009). The share of employment in the FIRE sector has its bigger, and statistically significant impact from 1970 to 2007.

While the share of FIRE in total Value Added growth has a much higher effect on GDP growth after 2008.

Comparing the results before and after 2008, we can conclude that the impact of financialization had a significant increase after 2008. Stolbova et al. (2017) argued that financialization was temporarily halted by the crisis, only to pick up again shortly after. However, when analyzing the crises' period, we found that the impact of financialization was aggravated.

From 2007 to 2009, both financialization variables have statistical significance at all conventional significance levels (1%, 5% and 10%) and our model has global statistical significance. An increase of one unit on *empl_fire* translates into a decrease of 15,48 units on *gdp_growth*, and an increase of one unit on *fire_va* is followed by a decrease of 4,46 units on *gdp_growth*.

	807	484	323	93
Number of obs				
Number of groups	33	30	33	32
Period	1970-2017	1970-2007	2008-2017	2007-2009
<i>_cons</i>	0,1778417*** (0,000)	0,11558916*** (0,002)	0,23330555** (0,017)	1,372573*** (0,184)
<i>empl_fire</i>	-1,3203272 (0,125)	-0,89609365** (0,000)	-0,05669193 (0,921)	-15,48109*** (4,234)
<i>fire_va</i>	-0,6320751*** (0,000)	-0,3025156*** (0,000)	-1,359804** (0,033)	-4,46362*** (0,848)
R-sq: within	0,1188	0,0524	0,1383	0,5535
Prob > F	0,0004	0,0001	0,0700	0,0000

Table 8 - Financialization and Growth (Source: own elaboration)

Notes: p-values in (.). Please see table 2 for variables definitions. *, **, *** means statistically significant at 10%, 5% and 1%, respectively.

4.2. Financialization and Inequality

Table 9 shows the results for the model where the dependent variable is the Gini Index before taxes and transfers, from 1987. This model only has statistical significance for the period 1987-2007, but although the independent variables have statistical significance, the sign is the opposite of what is mainly defended by the literature. Even so, we find that financialization reduces inequality, as Gołębiowski et al. (2017).

When estimating our model for the crises period, **empl_fire** has statistical significance for 10% significance level, while **fire_va** is not statistically significant and doesn't have the expected sign. Globally, this model has statistical significance and an increase of one unit on **empl_fire** causes an increase of 2,65 on **gini**.

Most of our results diverge from Assa (2012). And, although our models are inspired by his work, there are some differences that can explain the dissimilar results. We use the same variables to represent financialization, but instead of using them separately in different equations, we follow Gołębiowski et al. (2017) approach, of including all the financialization variables in use, in the same equation.

Given the obtained results, we consider that the used model has limitations to explain income inequality. Probably because we need to consider other variables in the model besides these.

Number of obs	277	65	212	53
Number of groups	31	17	31	19
Period	1987-2016	1987-2007	2008-2016	2007-2009
<i>_cons</i>	0,36149071*** (0,000)	0,5312668*** (0,000)	0,32963053*** (0,000)	0,2917244*** (0,041)
<i>empl_fire</i>	-0,3882911 (0,560)	-4,5534924*** (0,000)	0,25870449** (0,043)	2,625765* (0,992)
<i>fire_va</i>	-0,05559513 (0,528)	-0,35448297* (0,084)	0,01223824 (0,876)	-0,3366284 (0,191)
R-sq: within	0,0177	0,6438	0,0115	0,2319
Prob > F	0,7461	0,0000	0,1212	0,0307

Table 9 - Financialization and Inequality (Source: own elaboration)

Notes: p-values in (.). Please see table 2 for variables definitions. *, **, *** means statistically significant at 10%, 5% and 1%, respectively.

4.3. Financialization and Unemployment

In table 10, we analyze the impact of financialization on unemployment. The model is statically significative for all periods described. From 1990 to 2016, only **fire_va** is statistically significant, and an increase of one unit contributes to a 0.82 increase on the unemployment rate growth. When analyzing the periods until and from 2008 separately, **empl_fire** is still not statistically significant but has the expected sign, which translates into a positive impact of the share of employment in the FIRE sector growth on unemployment.

In contrast, the share of FIRE in total Value Added growth has statistical significance for the conventional significance levels. An increase in **fire_va** by one unit, contributes to a raise of 1.49 on **unempl** until 2008, and 1.46 afterwards.

There is no significant difference between the period before and after 2008. The impact of financialization in unemployment slightly decreased after 2008. But here we validate Assa (2012) and Sala and González (2014) findings, that financialization contributes to unemployment.

For the crises period, from 2007 until 2009, both financialization variables have statistical significance and the model has global statistical significance. An increase of one unit on **empl_fire** causes an increase of 6,93 on **unempl**, while an increase of one unit on **fire_va** contributes to an increase of 1,71 on **unempl**.

	681	324	294	93
Number of obs				
Number of groups	33	33	33	32
Period	1990-2016	1990-2007	2008-2016	2007-2009
<i>_cons</i>	-0,0672574 (0,103)	-0,1729183** (0,013)	-0,1605755** (0,037)	-0,5002352*** (0,095)
<i>empl_fire</i>	0,42115289 (0,200)	0,36867737 (0,138)	0,21502517 (0,347)	6,931553** (2,001)
<i>fire_va</i>	0,82326632*** (0,004)	1,4872987*** (0,001)	1,4599972*** (0,003)	1,708996*** (0,378)
R-sq: within	0,1688	0,3136	0,3045	0,5721
Prob > F	0,0018	0,0020	0,0091	0,0000

Table 10 - Financialization and Unemployment (Source: own elaboration)

Notes: p-values in (.). Please see table 2 for variables definitions. *, **, *** means statistically significant at 10%, 5% and 1%, respectively.

5. Conclusion

The main purpose of this study was to understand the impact of financialization in economic growth, income inequality and unemployment. For that, we analyzed the OECD countries, from 1970 to 2017, through an application of a fixed effects panel data regression. The outcome was three different models, that were then analyzed for three different time frames. First, the complete time period was included, then we analyzed separately the time period until 2008 and afterwards to observe if the financial crisis exerts some intermediate effect.

We could not take any conclusion regarding the impact of financialization on inequality, as the models used to study it, lack statistical significance and explanatory power, except when studying the period from 1987 to 2007, where the model shows a negative relationship between the financialization variables and inequality. The results were similar to Gołębiowski et al. (2017), but different from Assa (2012) .

From the two variables chosen to represent financialization, the share of employment in the FIRE sector growth was often not statistically significant, meaning it was not the best financialization variable to explain the changes in economic growth, inequality and unemployment. For economic growth, the present study provided conclusions that are aligned with the literature, in studies like Tomaskovic-Devey et al. (2015), Assa (2012), Palley (2013) and Treeck (2009). We could find a negative impact of financialization in GDP growth, for the OECD economies. The negative impact was aggravated after 2008.

Lastly, it was also possible to draw conclusions of the impact of financialization on unemployment. About this issue, we also found results that corroborate Assa (2012) and Sala and González (2014): an increase in the financialization levels is followed by an increase in unemployment. It is also possible to conclude that the impact of financialization, measured by the share of FIRE in total Value Added growth, has higher magnitude on unemployment, than on economic growth.

When investigating the impacts of financialization during the Subprime Crisis and the Great Recession, it was possible to conclude that these two events aggravated the impacts of financialization on economic growth, income inequality and unemployment.

This study has some limitations, that is the case of the lack of data to construct a homogenous period of analysis throughout all the models, which would bring more robustness to the results comparison. Another data limitation was the change on the International Standard Industrial Classification of All Economic Activities (ISIC) revisions, as industries are grouped differently between them and it is harder to compare results with other authors, like Assa (2012).

For future research it might be useful to include the profit of the FIRE sector as percentage of total profits, as independent variables in these models. As it has been shown that this sector is highly profitable, which causes misdirection of resources and talent, as pointed out by Epstein (2018). Another interesting analysis for future research, would be to apply the models estimated in this research to countries clustered following Stockhammer and Kohler (2019) and Battiston et al. (2018), to quantify the differences of impacts of financialization on the different demand regimes.

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