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Financialization of Europe: a comparative perspective

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Financialization of Europe: a comparative perspective*

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Abstract

We provide evidence about the process of financialization in Europe in the period 1999-2016. We combine different sources of data (ECB Data Warehouse, BvD Orbis Database, Bank Scope) and we compute different indicators that allow us to grasp different features of the financialization process in the Euro Area and in a group of selected countries. Furthermore, we shed lights on some new aspects of this process by constructing the network of direct and indirect financial exposures in the Euro Area, which provides an overview of the possible channels of propagation of financial risk in the area. Our findings show the presence of a trend towards increased financialization in Europe. At the same time, they also indicate significant cross-country heterogeneity in the characteristics of the process and they show that the increase in financialization has been much milder in countries of continental Europe than in the United Kingdom. Finally, our empirical analysis of the network of financial exposures reveals an overwhelming importance of indirect exposures, that could then serve as important conduits for the transmission of shocks in the area, as well as the increased globalization of the Euro Area financial exposures.

1. Introduction

This report investigates the process of financialization in the Euro Area. First, building on the existing literature, we identify the indicators that capture the process of growth of finance viz. real activities and calculate them for the Euro Area economy. Second, we propose novel indicators, which help to reveal further aspects of the process of financialization, and that shed lights on the financialization of non-financial corporations of the Euro Area. Third, we perform the analysis at different levels of aggregation (Euro-Area and single countries), which helps one to identify possible invariances and differences in financialization patterns within the Euro Area. Fourth, by combing network techniques with the up-to date balance sheet data from we investigate the structure of Euro Area network of financial exposures and discuss its implications for the debate on financialization. More precisely, we map out the financial exposures among the

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institutional sectors of the Euro Area (e.g. non-financial corporations, investment funds, banks, insurance and pension funds, other financial institutions, governments and households). These financial exposures can be regarded as a macro-network or multiplex weighted network (see e.g. Poledna et al. 2015, Boccaletti et al., 2014) in which multiple types of links correspond to different financial instruments: equity holdings (ownership shares), corporate and sovereign bonds (tradable debt obligations) and loans (non-tradable debt obligations).

The foregoing network analysis unveils several interesting properties. First, we find that the majority of financial exposures of the Euro Area institutional sectors are outside of the Euro Area, which hints to the market globalization of the financial activities of the Euro Area economy. Second, our approach allows us not only to identify interdependences between financial sectors and financial assets, but also to investigate patterns of indirect exposures among institutional sectors that can serve as potential pathways for the distress propagation following shocks.

The rest of the report is organized as follows. Section 2 describes the data used. Section 3 describes the indicators used to analyze financialization in the Euro Area. Section 4 presents the results of the analysis, starting with traditional indicators of financialization and then moving to illustrate the results from the analysis of the Euro-Area network of financial exposures. Finally Section 5 concludes.

2. Data

In our analysis, we use data stemming from different sources. Financial data at the sectoral level come the ECB data Warehouse. In addition, we aggregate at sectoral level firm-level data of equity holdings from Bureau Van Dijk Orbis database as well as data on issuance of bonds, equity and loans from the BankScope database. We use the classification of the institutional sectors of the Euro Area provided by the ECB Data Warehouse: non-financial corporations (e.g. NFC, firms), investment funds (IF), monetary financial institutions or banks (MFI), other financial institutions (OFI), insurance and pension funds (I&PF), governments (Gov) and households (HH)[1].

We perform the analysis at two different levels of aggregation: Euro Area (19 countries) and country levels. Because of data availability we perform the second type of analysis only on a limited set of countries in Europe: Austria, Belgium, Germany, United Kingdom, Italy, the Netherlands and France. All time series considered are at quarterly frequency and at current

[1] http://sdw.ecb.europa.eu/

market prices. It is important to stress that the length of time-series of sectoral financial data used for the calculation of financialization indices also display significant variability. Most series start in 1999 (the starting year of our analysis). However, in some cases (e.g. Austria, Netherlands, Italy) series start only in the late 2000s, depending on the variable considered.

Data on financial exposures among institutional sectors (often referred to as "who-to-whom" data) were obtained from the ECB Data Warehouse. These datasets contain information on financial exposures among the institutional sectors of the Euro Area (19 countries) and so-called "Rest-of-the-world", without specification of the institutional sector. Exposures are presented for the three major financial instruments: equity, bonds and loans. The longest in time (1999Q1-2016Q3) and more detailed information is collected for loans and include short-term loans (with maturity of one year), long-term loans (with maturity of more than a year) and deposits. In case of bonds exposures, the data set contains information for short-term bonds (maturity up to one year) and long-term bonds (maturity more than one year). These data sets cover a shorter time period: 2013Q4-2016Q3. For equity holdings, the information is available for listed equity shares and for investment fund shares, covering the time period 2013Q4-2016Q3. Since the data on exposures between the institutional sectors of the Euro Area is not available for unlisted companies, and as unlisted companies represent a significant portion of assets of some of the institutional sectors (see Figure 6), we reconstructed these data by assuming that exposures of institutional sectors through unlisted companies are proportional to their exposure via listed companies.

While there is a lack of available bonds and loans data sets at the micro-firm level, we were able to obtain the data on equity holding through the Bureau Van Dijk Orbis database. We collected a sample covering all Euro Area shareholders with a global portfolio of listed companies for the last available year - 2014. As a result of a search we found all active companies worldwide with operating revenue more than 1000 thousand USD and with at least one shareholder in EA with shares from 0.01% to 100%, characterized by 4 digit NACE codes. Characteristics of companies in the search include: operating revenue, direct percentage of share, or total percentage share (when direct was not available, total was used[2]). The result of the search described above is 687 840 companies. For the mapping of the 4-digit NACE code into climate-relevant sectors we used classification proposed in Battiston et al. (2017).[3]

[2] It is not always possible to determine the direct share of a shareholder. In order to overcome this obstacle we used information on the total share provided by the Bureau Van Dijk Orbis database.

[3]See in particular the supplementary information section in Battiston et al. (2017).

For the case of unlisted companies, investment fund shares, bonds and loans we made the assumption that shareholders invest similarly in terms of climate-sensitive exposure within the instruments they use. The usage of the micro-data allows us to shed the light on the globalization of the Euro Area economy by uncovering strong links between the Euro Area financial institutions and non-EU non-financial corporations.

3. Methodology

The term financialization is usually used to describe the increased importance of financial activities, incomes, and profits in one economy (see Krippner 2005, Assa 2016). In order to capture the financialization of the Euro Area economy we looked at one of the standard indicators of financialization [Assa 2012, Kedrosky and Stangler, 2011]: the ratio between the total financial assets over GDP.[4] Such an indicator provides an overall measurement of the increasing role of finance into an economy. However, in order to understand the financialization process is also useful to look at index computed at the level of institutional sectors, focusing on non-financial corporations (NFC) and on financial corporations (FC) . This is because, first, a high degree of financialization is also revealed by the share of total value added produced by the financial sector of activity. Second because, as it is e.g. argued in Mazzucato (2013) financialization is a multifaceted phenomenon, that for example relates also to the increasing amount of finance-related investments and activities operated by firms in non-financial sectors. On these grounds, in this study we also compute and analyze the evolution of financialization indices at the level of institutional sectors (FC and NFC). First, we compute *the ratio of the gross value added (GVA) to total gross value added* for both NFC and FC. Such an index provides an indication of the overall importance of financial firms in the determination of the GDP of a country or the Euro-Area. Second, for non-financial corporations we compute *the ratio of the property income receivable (from the ownership of financial or tangible non-produced assets) to total income (the sum of property income receivable and entrepreneurial income)*. Notice that the first indicator measures precisely the share of financial incomes over the total income produced by firms in real sectors of activity. A high value of the ratio thus reveals the presence of a high degree of financialization of non-financial firms. A similar indication stems from the

[4] Another interesting and representative measure of financialization of the EA economy is the ratio of the total financial assets over the total assets. However, unfortunately, there are no existing data for the total assets (including non-financial) at both EA level and national level. Accordingly, this measure cannot be used at the moment due to the lack of data.

computation of *the ratio of total financial assets of NFC to fixed assets of NFC*, which measures the importance of financial assets viz. real ones in non-financial firms. Finally, we also compute is *the percentage of total loans provided to either financial or non-financial corporations*. Such an indicator is important because it provides hints on the amount of the financial intermediation activity that is directed to finance real production and investment rather than to sustain the financial sector itself.

As we mentioned in the introduction, one of the novel contribution of this report to the debate of financialization is the analysis of cross-sectoral financial exposures by using a network perspective. In this approach, financial exposures of financial actors among themselves and to the real sectors of the economy are regarded as a multi-layer network (see e.g. Poledna et al. 2015, Boccaletti et al., 2014) in which multiple types of links correspond to different types of financial instruments (equity holdings, bonds and loans). We use the above-mentioned approach to analyze the macro-network of institutional sectors in the Euro Area. Such an analysis provides hints on the possible indirect channels financial dependence of sectors of activity in an economy, and relatedly, on the channels of propagation of financial risk following shocks to single sectors of activity.

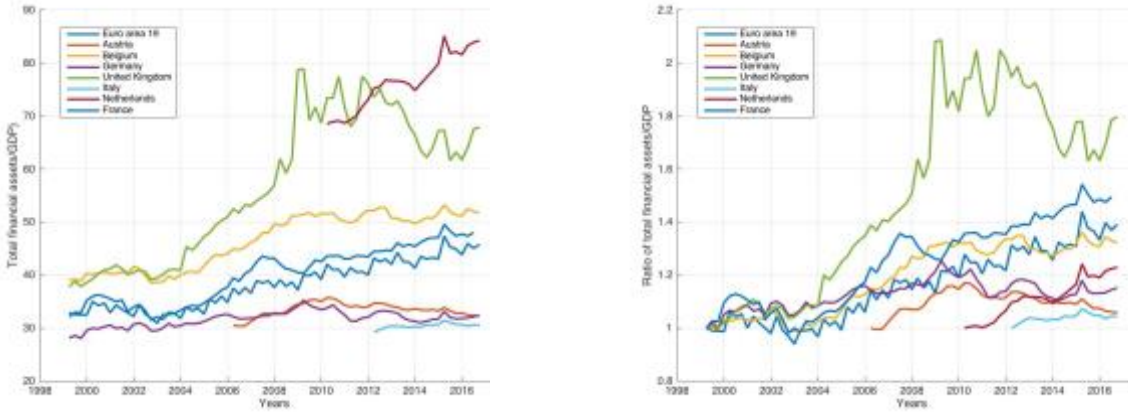
4. Results

In this section, we present the results of the comparative analysis of patterns of financialization in Europe. We begin by discussing results using financialization indices concerning the overall economy as well as institutional sectors. Next, we discuss the results from the analysis of the network of cross-sectoral exposures in the Euro Area, also with a special focus on climate-related exposures.

4.1 Financialization indices in a comparative perspective

Let us begin with the analysis of the global index of financialization (Financial assets/GDP). Figure 1 shows an overall trend of increasing financialization in the Euro Area as well as in single countries over the period considered (see Figure 1b). Interestingly, the financial crisis of 2008 has only a mild effect (or not effect at all) on this overall trend. If we take the area as whole, for instance, the ratio of financial assets on GDP in 2017 is 40% higher than it was at beginning of the sample. However, despite such an increase the level of financialization in the area is still much far from the very high levels observed in the United Kingdom. Indeed, even

after the decrease following the 2008 crisis, the value of the stock of financial assets is more than 60 times greater than in GDP in UK, while it is below 50 times in the Euro Area (see Figure 1a).

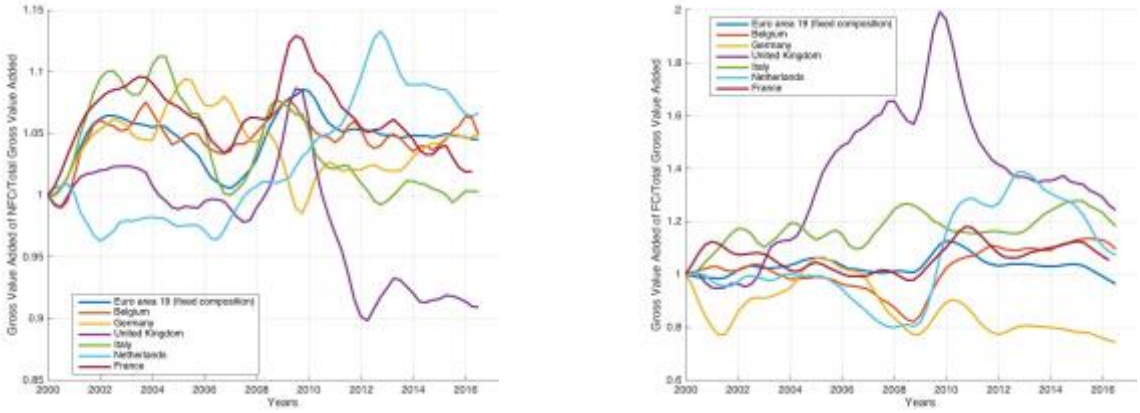


(a) **(b)**

Figure 1. *Global measure of financialization of the economy of the Euro Area and EU countries (Total Financial assets/GDP): a) Levels, b) Cumulative growth rates since* 1999Q1.

Furthermore, the plots in Figure 1 reveal the presence of a good deal of heterogeneity across countries within the Euro Area. On the one hand, countries like the Netherlands have financialization levels that are even higher than the one of UK (at the end of the sample the financial asset to GDP ratio is more than 80). On the other hand, countries such as Germany have financialization levels that are lower than the Euro-Area average. In addition, Germany has only experienced a weak growth in financialization. The degree of financialization even decreased following the financial crisis of 2008.

Let us now dig deeper into the possible drivers of the above trends in financialization. Figure 2 below shows the cumulative growth rates of the shares in total value added for, respectively, non-financial (NFC) and financial corporations (FC). First, the United Kingdom experienced an enormous growth in the importance of the financial industry until 2010: at the end of 2010 the share of total value added produced by financial corporations was indeed twice the value it had in 2000 (see Figure 2, plot b). The enormous growth of the financial industry was associated with a stagnant dynamics of the share of value added of non-financial corporations: this share fluctuated around the same value as in 2000 for about a decade and it



(a) **(b)**

Figure 2. *(a) Cumulative growth rates (since 1999Q1) of the share of value added of NFC in total value added for FC; (b) Cumulative growth rates since (1999Q1) of the share of value added of FC in total value added.*

displayed a mild increase only in the period 2008-2010 (see Figure 2, plot a). The Great Recession that started in 2008 has provoked a marked change of the above trends observed in the UK. Since 2010, the share of total value added of the financial industry has shrunk considerably (by 80 percentage points at the end of the sample period). However, and interestingly, this has not corresponded to a recovery of the value added in the non-financial sector, which has instead fallen to a value 10% lower the one in 2000.

The dynamics of value added shares in the rest of Europe has been quite different from the one in UK (see again Figure 2). In the Euro-Area the value-added shares of financial and non-financial corporations have been fluctuating around a stable value close to the one of 2000. The same consideration can be made for most countries in the area. Two worthy exceptions are The Netherlands and Germany. The first country seems to have been characterized by a trend in the financial industry like the one of the UK, but of much milder magnitude.[5] In Germany, the share of the value added of the financial industry declined instead: in 2016 it is roughly 20% lower the value it had in 2000). In addition, the loss in importance of the financial industry coincided with a recovery of the share of real sector value added.

[5] Interestingly however, the valued added share of NFC increased after the financial crisis (instead of shrinking as in the UK).

The plots in Figure 2 provide and overview of the financialization process over the extensive margin, i.e. because of the process of reallocation of value added between the non-financial and financial industry. Let us now turn to analyze growth via the intensive margin, that is to investigate whether the intensity of financialization has increased or decreased in the institutional sectors considered. To this, Figure 3 tracks the evolution of the ratio between financial and fixed assets across institutional sectors. Due to data availability only values for the Euro Area are reported. Remarkably, the figure shows that the growth of the value of financial assets of NFC was comparable to the one of financial corporations until 2008, and for some years (from 1999 until 2003) was even higher. The plot also reveals that the crisis of 2008 has mapped only into a temporary fall of the importance of financial assets in the balance sheet of non-financial corporations. Indeed, the ratio of financial to non-financial assets has recovered since 2009. At the end of the sample (2016) the ratio is 40% higher than the value it had in third quarter of 1999.

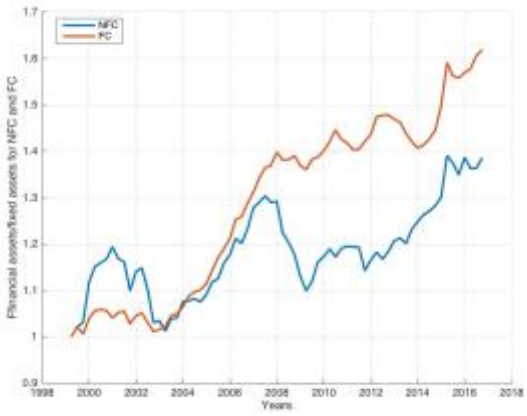


Figure 3. *Cumulative growth rates (since 1991Q1) of the ratio between financial assets and fixed assets for non-financial (NFC) and financial corporations (FC) in the Euro Area.*

The above analysis thus seems to point to an increase in the intensity of financialization in the real sector of the economy. Additional clues in this respect may come from the analysis of the share of property income receivable over total income produced by non-financial corporations. An increase of this ratio indicates that a larger proportion of non-financial assets stems from the ownership of assets (including financial assets) rather than from operating activities. Figure 4 below show the dynamics of this ratio over the period considered, for the whole Euro Area as well as for the selected countries. The figure reveals some interesting facts. First, the importance of property income has increased in the Euro-Area as well as in the selected countries until 2008, and it has shrunk since then. Second, there is a marked heterogeneity across countries in the dynamics. Germany has been characterized by a growth in the importance of

property income which is way larger than in other countries. In Germany, even after the readjustment triggered by the 2008 crisis, the ratio of property income receivable over total income is more than 50% higher than the value it had in 2000. In the other countries in 2016 the value of the same ratio has either returned at the same value as in 2000 (e.g. the Netherlands), or it is much lower (e.g. in Italy it has halved).

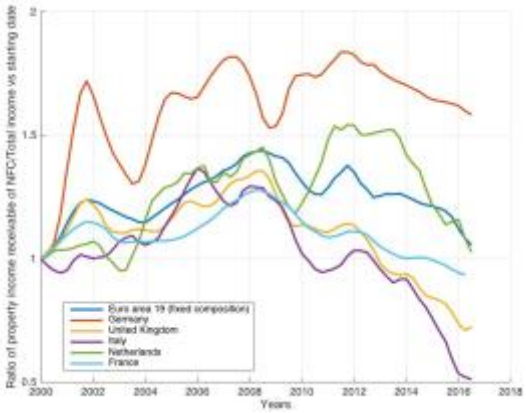


Figure 4. *Cumulative growth rates (since 1991Q1) of the share of property income receivable over total income produced by non-financial corporations.*

Finally, another fact highlighting the increase of financialization concerns the loans granted to non-financial corporations versus loans granted to financial corporations. The plot in Figure 5 shows that between 1991 and 2010 the shares of total loans granted to NFC and to FC in the Euro Area were pretty stable around values of 70% and 30% respectively. This situation changed with the financial crisis of 2008. Since then the share of total loans granted to financial corporations has steadily increased, while the opposite occurred for the loans provided to the real sector of the economy.

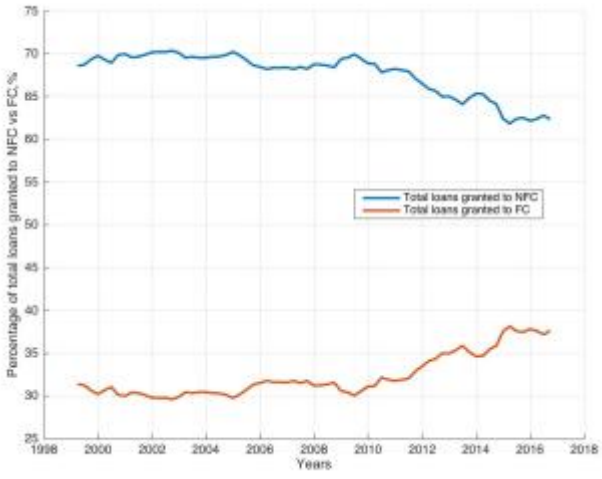


Figure 5. *Percentage of loans granted to non-financial corporations (NFC) and financial corporations (FC) in the Euro Area.*

To sum up, the above analysis of financialization indices delivers a quite nuanced picture of the process of financialization in Europe. Although all indices considered seem to point to an overall increase in financialization, the speed at which such a process is unfolding is quite different across countries. Indeed, the growth of financialization has been marked in United Kingdom, where financial assets have grown enormously in relation to GDP and where the financial industry is almost replacing the real sector in terms of production of value added. These trends have in general been much milder in the Euro Area. In addition, some countries like Germany have displayed a dynamic of value added shares which is the opposite of the one of the UK. There, the financial sector has shrunk in terms of production of value added over the sample period, whereas the real sector has recovered importance. Despite this, Germany has also displayed a marked trend towards an increased financialization of firms in the real sector. Indeed, the importance of property income in the real sector firms' accounts has reached significantly high values in Germany, whereas it has declined after the crisis in all the other countries considered in this study.

4.2 Financialization and globalization of the Euro Area from a macro-network perspective

The previous section has provided insights about the financialization process in Europe based on the computation of aggregate indices. We now turn to investigate the same phenomenon from a different perspective based on the network of financial exposures across different sectors of economic activity. By combining the balance sheet data, data on mutual exposures and micro-data on the firm level, we provide estimates of the exposures of the institutional sectors among each other in relation to their total assets. As we explained before in this report, this type of analysis can provide novel insights as it contributes to address the problem of estimation of the financial interdependencies between the real economy and the financial sector in the Euro Area and provides a map of the possible channels through distress may propagate following shocks of various nature.

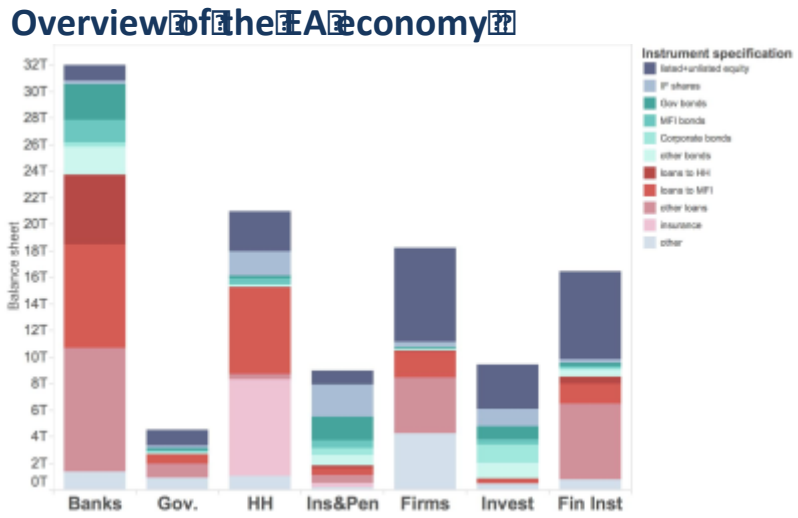
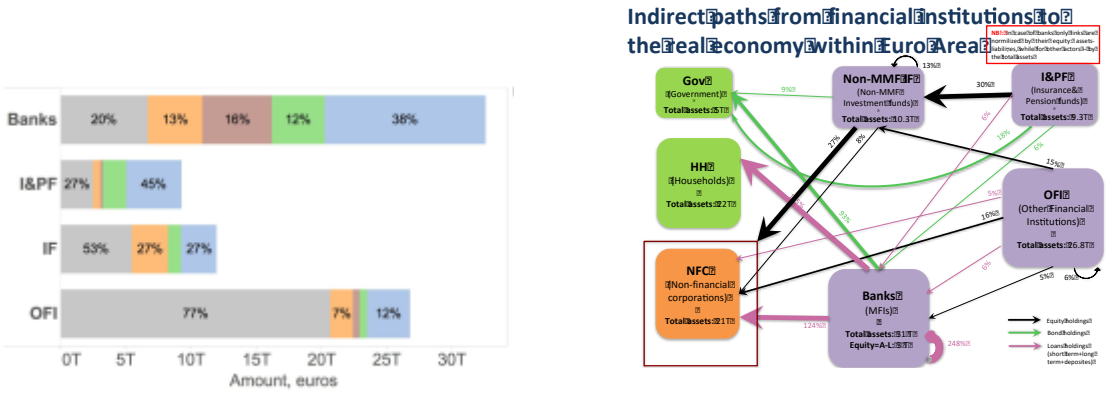


Figure 6. *Breakdown of assets of the balance sheet of Euro Area institutional sectors (Non-financial Corporations, Monetary Financial Institutions, Governments, Households, Non-MMF Investment funds, Insurance and pension funds, Other financial Institutions) by market type (equity shares, short-term and long-term bonds, loans and deposits and all remaining assets (significant part of which is derivatives).*

The results of the network analysis are presented in Figures 6 and 7. From the analysis, several findings emerge. First, most direct exposures of financial actors to the real economy are concentrated on equity holdings for investment funds, pension funds, and other financial institutions, while they are concentrated in loans and bonds for banks (holdings of government debt). A large portion of assets held by financial institutions are in fact securities issued by other financial institutions (see Figure 6). For instance, about 40% of banks' balance sheet in the Euro Area and about 25% of the market capitalization is invested in equity issued by companies in the financial sectors; about 40% of the bond market is represented by outstanding obligations issued by financial institutions (see Figure 5). All these facts combined, point out on the financialization of the Euro Area economy.



a) **b)**

Figure 7. *Exposure of finance to the real economy: a) direct exposures, b) all exposures form a network perspective.*

In addition, to direct exposures, there are also large indirect exposures of financial actors to the real economy (see Figure 7) [6]. Remarkably, pension funds hold an exposure of about 30% of their total assets in equity shares of investment funds, which in turn hold an exposure of about another 27% in equity of non-financial corporation in the EA and US. Pension funds also hold another exposure of 12% of their total assets in bonds and loans to banks, which in turn hold an exposure of about 124% (in respect with their equity) to the real economy. In contrast, the direct exposure of pension funds to non-financial corporations of the Euro Area is only about 8%.[7]

The above findings imply that adverse shocks on the real economy and increased volatility in asset values of the real economy could affect large portions of pension funds assets and this would occur more through indirect exposures than through direct exposures. As a final note, it is worth noticing that the source of shocks impacting on the Euro Area is more likely to be in countries outside the Euro Area. This is because several factors point to the increased globalization of the Euro Area economy from a financial perspective. First, the exposure of the Investment funds of the Euro Area to the non-financial corporations outside of area exceeds 19%. Second, up to 28% of the Euro Area government bonds are held outside of the Euro Area as well.

[6] All the exposures on the figure are normalized by the amount of total assets of the institutional sector from where the links are going from.

[7] Note: only links within the Euro Area are shown on the figure. Links do not sum up to 100%, because the remaining percentages are related to the links to the rest of the world (outside of Euro Area). In the text description, all numbers include the links leading to the rest of the word, which are not shown on the figure. Also, loans include deposits.

Concluding remarks

In this report we have provided fresh evidence about the process of financialization in Europe and of its consequences for the financial vulnerability of institutional sectors. We applied several indices of financialization to data concerning the Euro Area and a group of selected countries in Europe. Moreover, we have used a multiplex network approach to provide an overview of the web of direct and indirect financial exposures across different sectors. Our findings militate in favor of the presence of an overall trend towards increased financialization of European economies, trend that was only temporarily hampered by the financial crisis of 2008. At the same time also indicates the speed the process of financialization is unfolding is quite heterogeneous across countries and it is much milder in continental Europe than in UK. Furthermore, our network analysis highlights the importance of indirect financial exposures in Euro Area, and the fact that an increasing amount of financial shocks could stem from outside the area, due to the increased globalization of the area's financial exposures. Our analysis could be extended in at least two directions. First, in this report we have only considered financial exposures in general, and we have not considered exposures to specific classes of assets that could instead capture specific types of financial vulnerabilities. For instance, we have not considered exposures of sectors to climate sensitive assets, which allow one to capture the sensitivity of sectors to shocks related to climate change and to climate-related policies (see e.g. Battiston et al., 2017). Second, in this report we have conducted the analysis at very high levels of aggregation (countries, sectors). One could instead use micro-data on firms and households in order to unveil possible further micro-heterogeneity in the financialization process.

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