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COMMISSION STAFF WORKING DOCUMENT

European Financial Stability and Integration Review, April 2015

Chapter 2: An overview of the European Financial System[1]

1. INTRODUCTION

This chapter provides an overview of the structure of the financial system in the European Union. It complements the information presented in Chapter 1, which focuses more on market developments. In particular, it seeks to quantify the role of the financial system in channelling funding across the economy and answers questions such as who provides credit, who uses it, what form does it take and what are the channels through which financial resources flow. This is particularly relevant in the current context where interest rates are low, prices are losing some of their information value[2] and some voices have expressed concern about the potential for a 'creditless' recovery.[3] This chapter therefore focuses on quantitative issues and should be read as a complement to reports from other sources about financial markets and financial stability which focus more on prices variables[4].

The chapter is intended to provide a background for the on-going work on developing capital markets union (CMU) and for the investment plan for Europe. CMU is a plan of the European Commission that aims at creating deeper and more integrated capital markets in the 28 Member States of the EU. With the CMU, the Commission will explore ways of reducing fragmentation in financial markets, diversifying financing sources, strengthening cross border capital flows and improving access to finance for businesses, particularly SMEs[5]. The investment plan for Europe aims at reversing the drop in investment to fuel the EU's recovery and meeting the long-term needs of the European economy[6].

1.1. The European financial system: an overview

In the EU, there are about 15 000 companies with access to capital markets through the issuance of either bonds or quoted shares. On the other hand, there are over 25 million companies and businesses that finance their activities through other means. Similarly, in the US, there are about 15 000 firms with access to capital markets and 5.7 million firms without.

A variety of funding source are available for financing the economy: the initial funds provided at the inception of a family business and the subsequent resources generated by the company (retained earnings), advances provided by customers or suppliers, intercompany loans, financing obtained from the government (e.g. government loans, but also tax claims not yet paid), bank loans, etc.

The chapter examines how the EU economy is financed by analysing the different sources of funding that are effectively being used by corporates and other economic agents. This includes funding obtained through the financial sector (e.g. bank loans or the issuance of securities in the financial markets) or not (e.g. family equity, intercompany loans or trade credit). The quantitative analysis draws mainly from the flow of funds statistics provided in national accounts.

Mapping the financial structure of the European economy requires an understanding of who is providing financial resources to whom and through which instruments or products. Given its different traditions and historical evolutions, financial markets and financial intermediation are more developed in western Europe (e.g. the UK, France or Germany) than in most eastern European countries. Therefore, an aggregate analysis for the EU or the euro area will be complemented with a country-by-country analysis. Also, with the maturity of financial products ranging from a few hours or days (e.g. interbank lending) to a few decades (e.g. mortgages), stock series need to be complemented with an analysis of flows.

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[1] Authors: Javier Villar Burke, Boris Augustinov and Ana María Sánchez Infante with the support of Raluca Maran and Olli Mononen.
[2] Several reports have been signalling the potential risks of this low yield environment. See, for instance IMF (2013), EIOPA (2014a, 2014b), Joint Committee (2014), EBA (2014a), Tanner (2015), Thompson (2014) and Plender (2015). See also Chapter 1.
[3] See, for instance, Abiad, Dell'Ariccia and Li (2011), Sugawara and Zalduendo (2013) and Claessens, Kose and Terrones (2009).
[4] E.g. the ECB's annual *Financial Integration in Europe* and semi-annual *Financial Stability Review*, and the IMF's semi-annual *Global Financial Stability Review*. Most national central banks and other authorities produce similar reports.
[5] See European Commission (2015a and 2015b).
[6] See European Commission (2014c).

Financial interactions can be approached through six dimensions (from whom, to whom, what, where, how and how much), which imply over 500 000 combinations of individual relations, with their own time dynamics (see Table 1). This chapter tries to disentangle the complexities of this dense network by providing an overview of the main features of the European financial system.

Table 1: **Financial relations** in an economy: **dimensions**

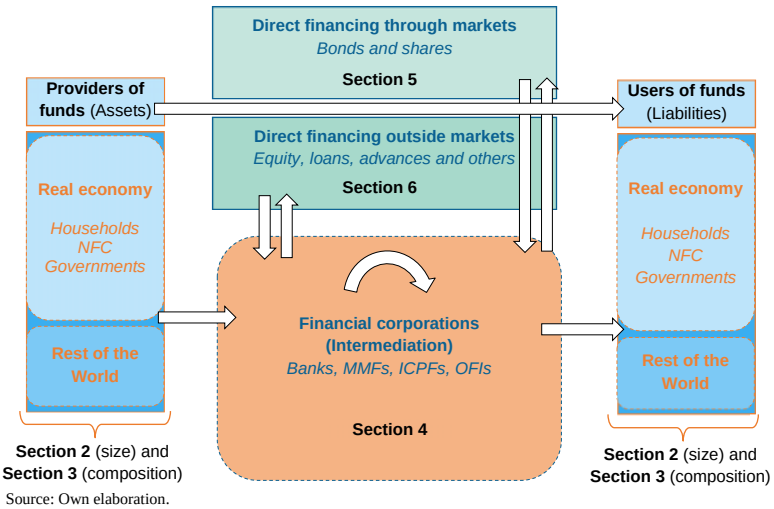
Who? **Institutional sector**	**What?** **Instrument or product**	**Where?** **Geography**	**How much?** **Measurement**
Households	Loans	European Union (EU28)	Absolute terms (Euro)
Non-financial corporations (NFCs)	Bonds	euro area (EA18)	Relative terms
Governments	Quoted shares	Member States (28)	Percentage of GDP
Monetary Financial Institutions (MFIs)	Unquoted shares	International comparisons	Percentage of balance sheet
Central banks	Deposits	United States	Growth rates
Credit institutions	Ins. technical Reserves	Japan	
Money Market Funds (MMFs)	Other assets / liabilities	China	
Insurance Corporations and Pension Funds (ICPFs)		Canada	
Insurance corporations (ICs)		G20	
Pension Funds (PFs)	**How?** **Circulation of funds**	**When?** **Time**	**How much?** **Variable**
Other Financial Institutions (OFIs)	Direct financing	Historical perspective	Stocks (outstanding volumes)
Investment funds (IFs)	Through markets	Annual series	Flows
Financial Vehicle Corporations (FVCs)	Outside markets	Monthly series	Gross issuances
Asset-backed financing	Financial intermediation		Redemptions
'Residual' OFIs			Net issuances
Non-residents (RoW)			

Source: Own elaboration.

The role of the financial sector –either through financial intermediation or through direct financing– can only be understood in the context of the broader economy that it is inserted in and serving to. Therefore, before entering into a detail analysis of the financial sector itself, Sections 2 and 3 focus on analysing the size of the different institutional sectors (e.g. households, governments, financial institutions, etc.) and the different instruments or products they used to formalise their financing relations.

The three subsequent sections cover the three main components of the financial sector as presented in Chart 1: financial intermediation (Section 4), financing through bond and equity markets (Section 5), and direct financing through other sources (Section 6). Finally, Section 7 wraps up the information that has been presented throughout the chapter.

Chart 1: Flow of funds in the economy and structure of the chapter



Source: Own elaboration.

A series of boxes complement the analysis and help better grasp the importance of the different financing channels. Box A discusses the role of non-financial assets and the role that can play the recently presented investment plan for Europe; Box B compares the financing mixed used by EU companies with those used in the US; Box C examines the interlinkages between banks and governments; Box D puts into context the size of financial institutions by comparing them against the size of NFCs; finally, Box E and F provides some additional details about bonds and quoted shares, respectively.

1.2. Financing as inter-temporal transfer of value

Financial relations such as receiving a loan from a bank or investing in a pension fund reflect an inter-temporal transfer of value and the price of time (as reflected in the interest rate). These inter-temporal transfers are critical to the well-functioning of the economy as they allow for an optimal allocation of resources. However, individuals will only be willing to participate in this temporal allocation of resources if they can be confident to be reimbursed in the future. In this context, the legal framework, including the judiciary system, makes sure that (economic) contracts are indeed not breached. Moreover, trust among market participants is critical for the smooth functioning of any economy and reaches far beyond written laws.

In the wake of the financial crisis, trust in general, and the access to finance in particular, significantly eroded: bank wholesale markets and stock exchanges collapsed in late 2008; firms and households struggled to get credit; non-performing loans skyrocketed; people that have been unemployed for two, three years or even longer lose the confidence in themselves and on society; political corruption cases and financial scandals jeopardise the feeling of justice… And all of this is leading to important frictions in our society and to the rise of extremisms.

In this context, the mapping presented in this chapter can be useful for understanding the financial positions among economic sectors and how they might have been affected by the outbreak of the financial crisis, in particular, the emergence of potential frictions that may be negatively affecting the functioning of the economy or jeopardising a robust consolidation of the recovery that will permit the generation of jobs and growth.

2. WHO? PROVIDERS AND USERS OF FINANCING: THE INSTITUTIONAL SECTORS

National accounts divide the economy into seven institutional sectors (see Table 1). *Non-financial corporations* produce the goods and services that *households* consume. The public sector, or *general government*, provides public goods and redistributes rents by collecting taxes and granting subsidies. Financial corporations are in charge of providing financial services such as payment systems, maturity transformation or financial intermediation. They can be further split into *monetary financial institutions*, *insurance corporations and pension funds*, and *other financial institutions*. Finally, any economy interacts with other countries, where the same sectors (households, non-financial corporations, public sector and financial corporations) can also be identified. However, the external sector is usually grouped together in a miscellaneous *rest of the world* category.

2.1. The flow of funds in the economy

The different channels through which sources of funds can ultimately find a need of financing are summarised in Chart 1. In modern economies, any non-financial operation in the economic cycle (e.g. provision of labour, provision of capital, sale of a product or service) is matched with a financial transaction (e.g. payment of salaries, payment of interest or dividends, payment for the purchase). The accumulation of all transactions over time is recorded on the balance sheets of the different institutional sectors which also reflect their financial position in terms of provision (assets) and use (liabilities) of financial resources.

In broad terms, agents with excess of financial resources (savers or investors) will provide funds to other agents with a financing need (borrowers). Two economic agents may directly agree with each other about the terms and conditions of a financial transaction (e.g. an intercompany loan). However, such operations are embedded with several constraints such as negotiation costs or limited liquidity.

Capital markets provide some flexibility both to investors and borrowers. For instance, investors do not need to stick to the overall maturity of the initial contract as they can sell their investment in shares or bonds in the secondary market in case they need liquidity. On the other hand, borrowers can access a wide pool of investors.

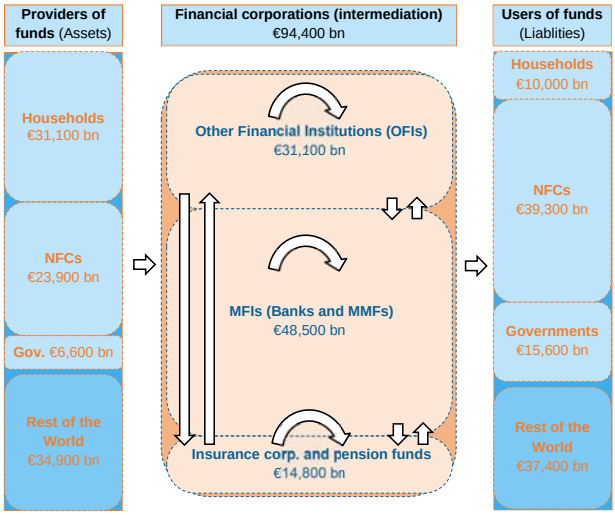
However, not all financing needs and excess funds can be channelled and matched through financial markets. A household willing to buy a house does not have the (financial and technical) capacity to issue securities in the markets. On the other hand, most households and businesses do not have the capacity to assess the creditworthiness of a potential borrower. In this context, financial intermediaries provide additional flexibility in

channelling funds from savers to borrowers by exerting two critical functions: maturity transformation and the assessment of the creditworthiness of potential borrowers. For instance, financial intermediation allows for a deposit placed by a household in a bank to be transformed into a mortgage to another household without direct interaction between the depositor and the mortgage borrower. In this context, financial intermediaries facilitate that all financial resources of the economy are allocated to productive projects and contribute to reduce the amount of idle resources.

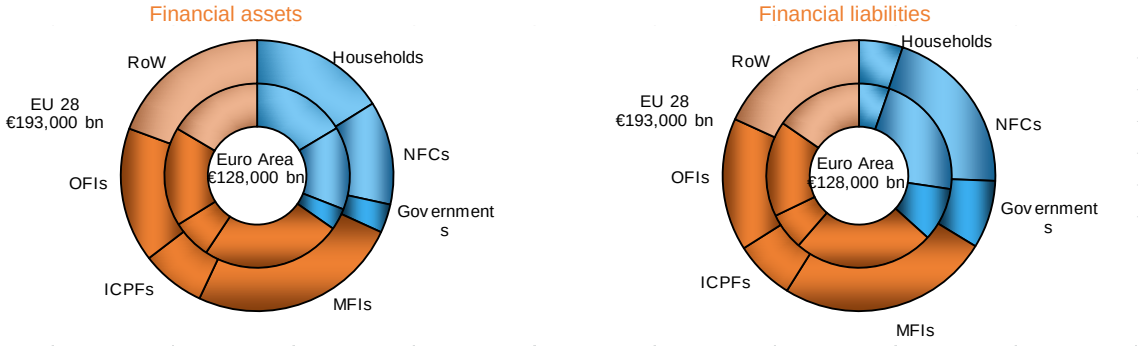
2.2. The size of the institutional sectors: aggregate analysis

In the third quarter of 2014, the EU economy had a total size, in terms of aggregated (financial) balance sheet of the institutional sectors, of about € 190 000 billion or 15 times annual GDP. Financial corporations represent about half of the economy of the euro area while households and NFCs represent about 15 per cent each. The balance sheet of governments is much smaller (Chart 2).

Chart 2: **Financing of the economy: size of institutional sectors**, 2014 Q3
EU 28, € billion



EU 28 and euro area, distribution across sectors



Notes: The height of each box is proportional to the actual size of the sector. Assets and liabilities of the real economy and RoW include funds channelled both through intermediation and direct financing.
Source: ECB, Eurostat and own calculations.

Households are the main net providers of funding in the economy while non-financial corporations and governments are net borrowers (Chart 2)[7]. Non-financial corporations can obtain credit because, on the one hand, they have large amounts of equity (see Section 3 for further details) and, on the other hand, they have significant amounts of tangible assets such as buildings, machinery and others that are not accounted for in the financial accounts (see Box A for further details). Governments borrow against their future collection of tax revenues.

[7] Net positions are calculated as financial assets minus financial liabilities.

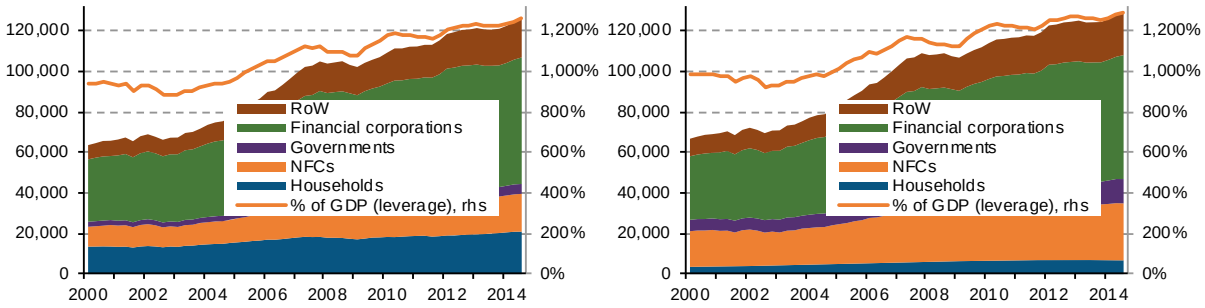
Financial corporations have specific characteristics. Although financial corporations hold half of financial assets and liabilities of the economy, they do not generate or absorb net financing to the rest of the economy (i.e. their net financial worth is almost nil). This is explained by two factors. On the one hand, the intermediation role of the financial sector means that they channel financial resources between net lenders and net borrowers in the economy. On the other hand, the bulk of the balance sheet of financial corporations is just financial assets and liabilities and, therefore, tangible assets (non-financial assets) are insignificant.

Balance sheet evolution

Between 2000 and 2014, the size of the euro area economy in terms of financial assets and liabilities doubled (Chart 3) while nominal GDP only grew by 40 per cent[8]. As a consequence, the overall leverage of the euro area economy increased, particularly after 2005. In the last years, leverage growth has moderated, but there is no indication that leverage is declining. The last *Geneva report on the World Economy*[9] indeed highlights that, despite the length and the depth of the crisis, the world has not yet begun to deleverage; global debt-to-GDP is still growing, breaking new heights (page 1). The Geneva report also indicates that deleveraging interacts in a vicious loop with slow nominal growth as the latter makes the deleveraging process harder and the former exacerbates the economic slowdown (page 2)[10].

Financial corporations represent about half of the financial assets of the economy and its relative size has slightly increased since 2000. Concerns have been raised about a potential excessive size of the banking system in Europe[11]. In this context, a slight decline in the relative size of the financial sector is observed in the last few quarters. This is mainly explained by the process of deleveraging undertaken by banks in Europe (see Chapter 1 and Section 4 below).

Chart 3: **Balance sheet of the institutional sectors**, outstanding amounts, euro area, € billion



Notes: RoW: Rest of the world; NFCs: Non-financial corporations. Non-financial assets (such as buildings, machinery, land, etc.) are not reported.
Source: ECB, Eurostat and own calculations.

Households and non-financial corporations represent about 15 per cent each. Their joint relative size has significantly declined from representing almost 40 per cent of the euro area economy in the early 2000s to only 30 per cent in 2012. The financial balance sheet of the public sector is much smaller. Finally, non-euro area residents contribute to the euro area economy by providing (or absorbing) about 15 per cent of financial assets (those are mainly financial corporations from the UK, US and other financial centres).

Net financial worth

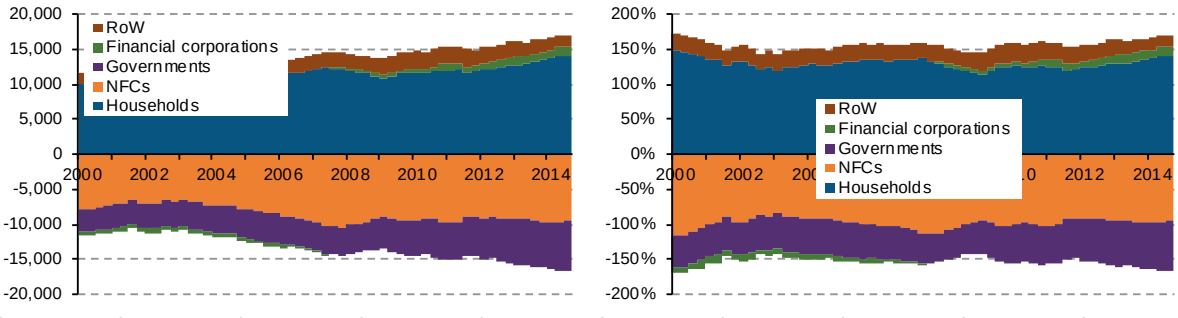
The difference between financial assets and financial liabilities, or net financial worth, indicates the (cumulative) net contribution to the financing of the economy provided by each financial sector. When a sector has a positive net financial worth, it provides financing to other sectors; when net financing worth is negative, the sector is

[8] The analysis at aggregate level should ideally be done for the EU as a whole. However, data for the euro area are often more complete and with longer time series. Therefore, most of the aggregate charts refer to the euro area. Nevertheless, trends and relative importance of the different sectors can be extrapolated for the EU as a whole. Data for individual countries within and beyond the euro area are also analysed throughout the chapter.
[9] See Buttiglione et al. (2014).
[10] For further details about the evolution of leverage and the problem of debt overhang, see Chapter 3.
[11] See, for instance, Pagano et al. (2014).

absorbing financing, in other words, it has a financing need to be covered by borrowing from other sectors. In this context, households are the main provider of funding to the economy (Chart 4). Indeed, household net savings represented more than 140 per cent of GDP in 2014 and ensured that other sectors obtained the financial resources they needed. The main net users of financial resources were NFCs and governments.

The balance sheet of the financial sector represents about half of the aggregated balance sheet of the economy (Chart 3). However, given their intermediation function, the net contribution of financial corporations to the financing of the economy is only incidental. The financing of the economy is completed by resources provided by the external sector (about 20 per cent of GDP).

Chart 4: **Net financial worth of the institutional sectors**, outstanding amounts, euro area



Notes: RoW: Rest of the World; NFCs: Non-financial corporations. Net financial worth is computed as financial assets minus financial liabilities.
Source: ECB, Eurostat and own calculations.

The financial and economic crisis triggered important financing needs in the public sector. Government net financial negative worth (net public debt) increased from € 4 000 billion in 2008 to over € 7 000 billion in 2014. This is explained by its function of automatic stabiliser (e.g. provision of social benefits) but also for the need of the public sector to step in to support financial institutions under stress. The household sector originated most of the financing created in the euro area economy: its net financial worth increased from € 11 000 billion in 2008 to almost € 14 000 billion in 2014. Financing ultimately coming from households also had to be used for compensating the withdrawal of funding resources by foreign investors, whose net positions significantly declined throughout the same period.

Net financial worth of NFCs remained rather stable throughout the crisis, except for the last few quarters when an increase in the use of resources is observed. Financial corporations have also slightly contributed to the financing of the economy during the financial crisis as their net financial worth moved from being marginally negative to marginally positive.

While the bulk of financial resources has always stemmed from households, there area two main factors that are eroding the capacity of households to continuously provide financing to the rest of the economy. In the short run, unacceptably high levels of unemployment entail a net absorption of financial resources. In the long run, demographic developments, including longer lives and reduced fertility rates, imply a shrinking share of working population with respect to the people already in retirement[12].

The external sector

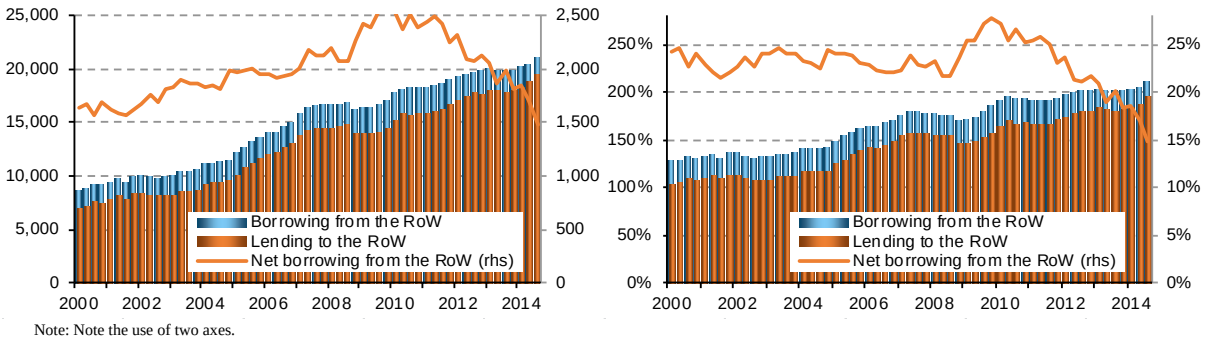
The external position requires a special analysis as it can be affected by various factors such as the evolution of exchange rates or geopolitical developments. The relatively small net borrowing position of the euro area should be interpreted with caution as the risk stemming from exchange rate developments affect gross positions, which are much larger (Chart 5).

Exchange rate risks affect foreign positions (assets or liabilities) when they are denominated in foreign currency. Indeed, exchange rate fluctuations have a direct impact in the value of foreign currency denominated assets and liabilities of residents and, therefore, in their net worth. On top of that, euro denominated positions vis-à-vis non-

[12] See also Chapter 4.

residents are also affected by exchange rate risks, particularly when the counterpart's income is generated in foreign currency. Increases in the value of the liabilities of non-residents due to a Euro appreciation deteriorate the capacity of foreign borrowers to repay their debts. Similarly, actual or potential depreciation of the euro may raise concerns on the erosion of the value of Euro assets and reduce the willingness of foreign investors to provide lending in euro.

Chart 5: **Positions of the euro area vis-à-vis the rest of the world**



Note: Note the use of two axes.
Source: ECB and own elaboration.

Similar analysis can be extended to countries outside the euro area which depend, to a certain extent, on external financing or which have significant positions in foreign currencies. The decision of the Swiss National Bank in early 2015 to discontinue the peg with the euro could be perceived as a materialisation of such risks. The appreciation of the Swiss franc of almost 30 per cent translated in an immediate increase of the debts of households that have taken mortgages in Swiss francs in countries like Poland, Croatia or Hungary. Austrian banks are also being affected, mainly through some of their subsidiaries.

In the current context, pressures on exchange rates can come from the growing growth differential between the US on the one hand and the EU and euro area on the other hand. On top of that, different monetary policies in the two sides of the Atlantic, in particular with respect to the purchase of assets (quantitative easing), may also potentially impact exchange rates. This seems to have been the case throughout February and March 2015[13]. Foreign exchange volatility could have destabilizing effects on the funding of the European economy at a juncture where European sectors have not finished repairing their balance sheets.

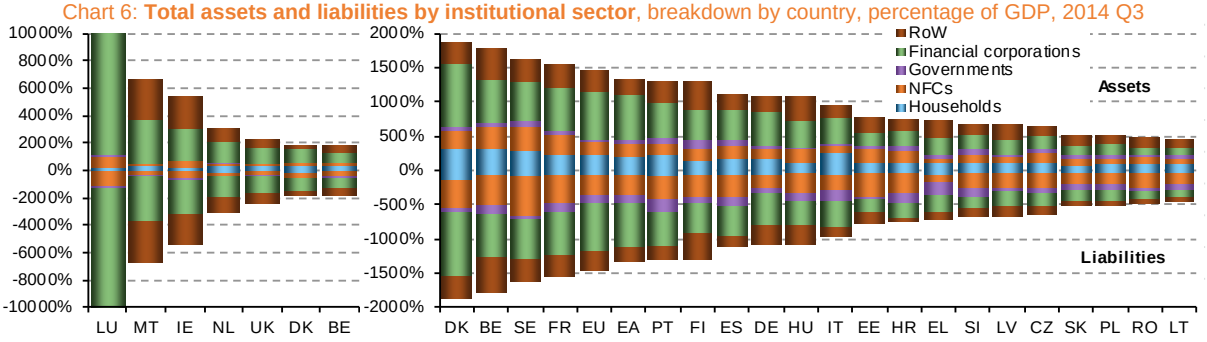
These factors, and the crisis having been more severe in the EU than in the US, may explain to a large extent the decline in the net foreign funding positions of the euro area as a whole between 2009 and 2014 to reach very low levels (Chart 5)[14].

2.3. Institutional sectors: country analysis

European aggregates can conceal important divergences across countries. Indeed, the total size of the institutional sectors in the economy in terms of financial assets and liabilities ranges from less than 500 per cent of annual GDP in countries like Poland, Lithuania or Romania to more than 30 000 per cent of annual GDP in Luxembourg (Chart 6). The large size of Luxembourg is mainly explained by its financial sector. With total assets of € 7 900 billion in the third quarter of 2014, Luxembourgish financial corporations had a total size similar to financial corporations in Spain (€ 4 600 billion), Italy (€ 6 000 billion) or the Netherlands (€ 9 400 billion).

[13] While the ECB started its assets purchase programme in March, the US Fed is starting to discuss the possibility to raise interest rates.
[14] For further discussion about the risks facing the European economy in the current juncture, see Chapter 1.

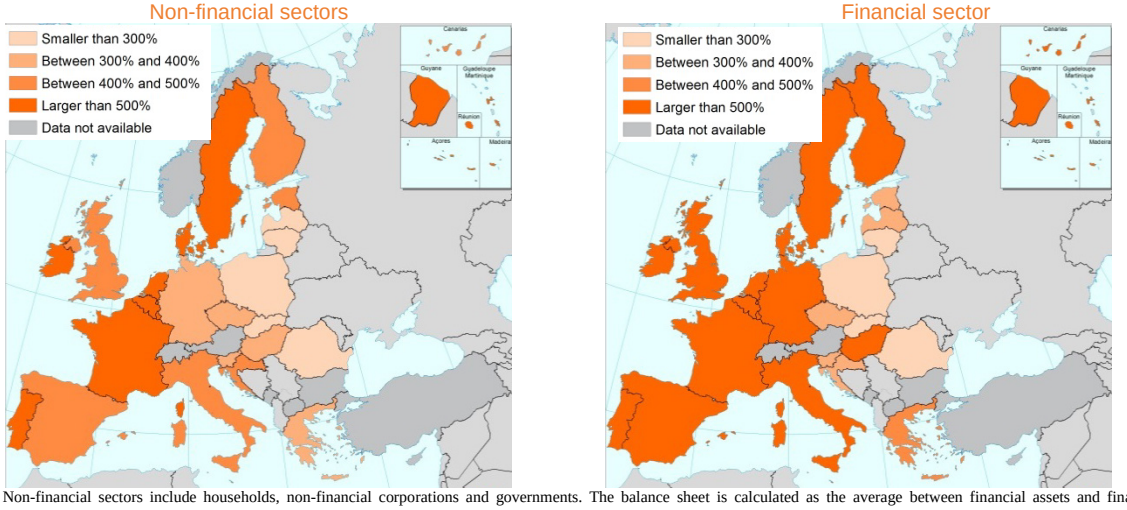
Chart 6: **Total assets and liabilities by institutional sector**, breakdown by country, percentage of GDP, 2014 Q3



Notes: Data for Bulgaria, Cyprus and Austria are not available. LU: financial assets and liabilities of financial corporations = 19 000 per cent of GDP; financial assets and liabilities of RoW = 17 000 per cent of GDP; Total balance sheet = 37 000 per cent of GDP.
Source: ECB, Eurostat and own elaboration.

Institutional sectors in Malta and Ireland, followed by the Netherlands and the UK, also have very large sizes (in relation to their respective GDPs), mainly explained by the size of their financial sector (see Chart 6)[15]. In general, western countries present larger sizes in terms of financial assets than eastern countries. This is partly explained by the longer tradition of financial intermediation in western countries, while eastern countries only developed it after their transition from communism. Also linked to that is the international expansion of banks headquartered in western countries, which manage some of the wholesale and other group operations from the parent company (see last year's review: European Commission, 2014a).

Chart 7: **Balance sheet of institutional sectors**, percentage of GDP, 2014 Q3



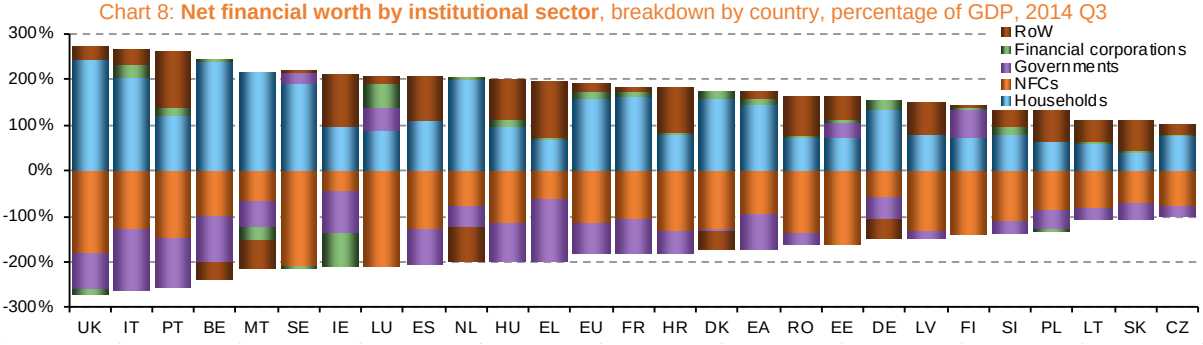
Notes: Non-financial sectors include households, non-financial corporations and governments. The balance sheet is calculated as the average between financial assets and financial liabilities.
Source: ECB, Eurostat and own elaboration.

Data on net financial worth by country provides also important insights (Chart 8). Households are confirmed as the main ultimate originator of financing in the economy and non-financial corporations as the main users, but relative sizes vary across countries. Households in Belgium, the UK, Malta and Italy are the ones who contribute the most to the financing of their economies in relative terms (over 200 per cent annual GDP) while the lowest net saving rates of households appear in Romania, Greece, Poland, Lithuania and Slovakia (less than 70 per cent annual GDP). The largest net users of financing, in relative terms, are NFCs in Luxembourg and Sweden and the lowest ones, NFCs in Germany, Ireland or Greece.

Net financial worth for all other sectors shows a mix picture. The public sector is, in general, a net user of financing (with the highest relative size in Belgium, Portugal, Greece and Italy, where the net borrowing position of the public sector represents over 100 per cent of GDP). Exceptions to those would be Sweden, Estonia, Luxembourg and Finland, where financial assets of the public sector are significantly larger than their financial liabilities.

[15] For a detailed analysis of the financial sector, see Section 5.

Chart 8: **Net financial worth by institutional sector**, breakdown by country, percentage of GDP, 2014 Q3

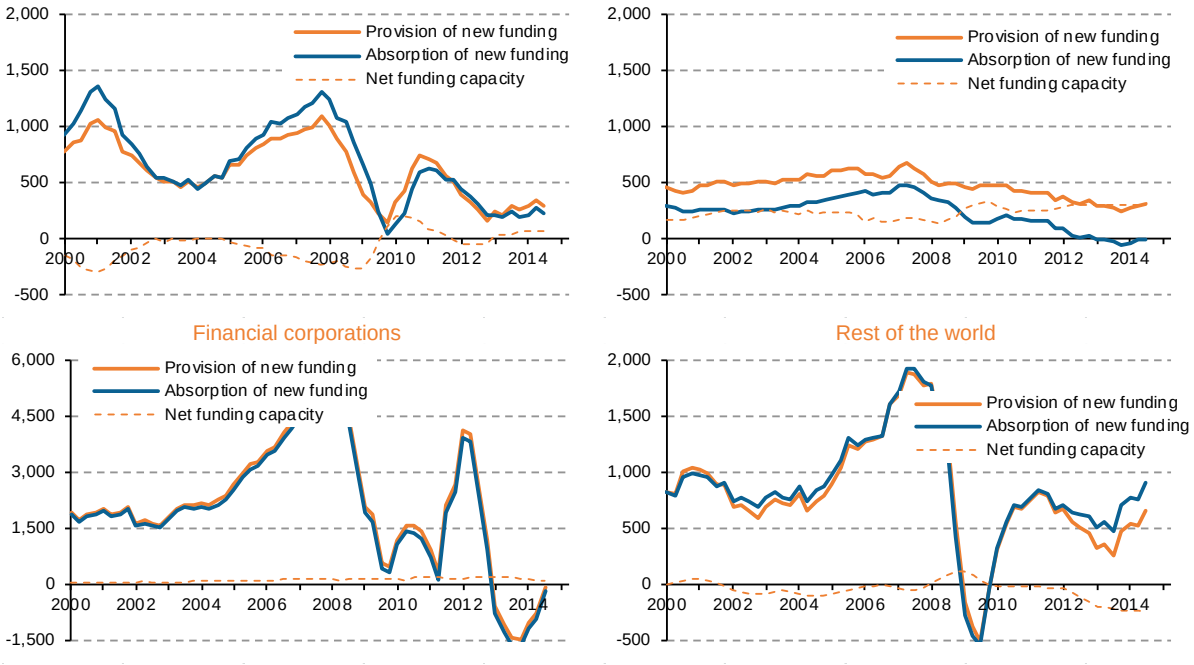


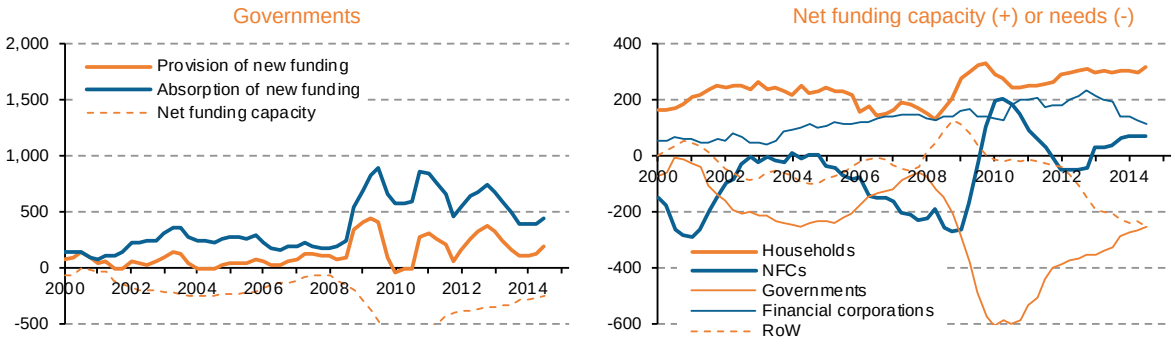
Notes: Data for BG, CY and AT are not available.
Source: ECB, Eurostat and own elaboration.

The external sector provides net financing to the economy in a majority of countries (particularly in Greece, Portugal, Ireland, Spain and Croatia, where the cumulated net financing provided by the external sector was about 100 per cent annual GDP or larger), but in a number of cases, Member States are net savers with respect to the rest of the world (particularly in the Netherlands and Malta, which have all accumulated savings representing more than 50 per cent annual GDP).

As it has been shown for the euro area aggregate, despite the large size of the financial sector in terms of financial assets and liabilities, its net contribution to the financing of the economy is incidental in virtually all countries. As an extreme example, the balance sheet of the financial sector in Luxembourg represents 19 000 per cent of its GDP but the financial sector only contributes to the net financing of the economy by an amount equivalent to 50 per cent of GDP.

Chart 9: **Generation and use of new funding**, net annual transactions (flows), euro area, € billion





Note: Note that the scale for financial corporations is three times larger than for the other sectors.
Source: ECB and own elaboration.

2.4. Institutional sectors' dynamics

Until now, we have analysed the balance sheet of the different institutional sectors, which provides the stock or the financing positions accumulated over the years. An analysis of flows reveals a complementary view by focusing on the new assets and liabilities which are incurred over a given period.[16,17]

Flows in NFCs' balance sheets are highly pro-cyclical: they follow very closely the economic cycle, although with a short lag (Chart 9, top left panel). Indeed, after the dotcom bubble of the early 2000s, net transactions of NFCs' liabilities tracked the expansion of the mid 2000s, the burst of the bubble in the late 2000s, the short recovery of 2009-2010 and the second dip of 2012. However, a decoupling is observed since late 2013. Indeed, the improvement in the macroeconomic situation did not impact NFCs' net transactions, which continued to fall throughout 2014. Moreover, the peak of 2008 was similar to the peak of 2000-2001. However, the trough of 2009-2010 was much deeper than the one of 2003-2004. Thereafter, the series for NFCs have remained below the flows that would have been expected from the evolution of GDP[18]. Demand effects and demographic dynamics may be playing an important role in explaining this evolution[19].

Since the outbreak of the crisis, households have been providing increasing amounts of net funding to the rest of the economy. Data show how net transactions in liabilities (use of funds) have declined more significantly than net transactions in assets (provision of funds) (Chart 9, top-right panel). The decline in the absorption of new funding by households, which became zero or eventually negative in 2012 and 2013, is rather surprising given the huge size of their non-financial assets (see Box A).

These dynamics may be linked to the increasing concentration of income in the highest quantiles. It is widely acknowledged that high income individuals tend to save more than lower income individuals, who use most of it for consumption. Following the work of Piketty (2014), but also discussions within the IMF or the OECD, among others, it has been argued that the increasing level of inequality can negatively affect economic growth[20].

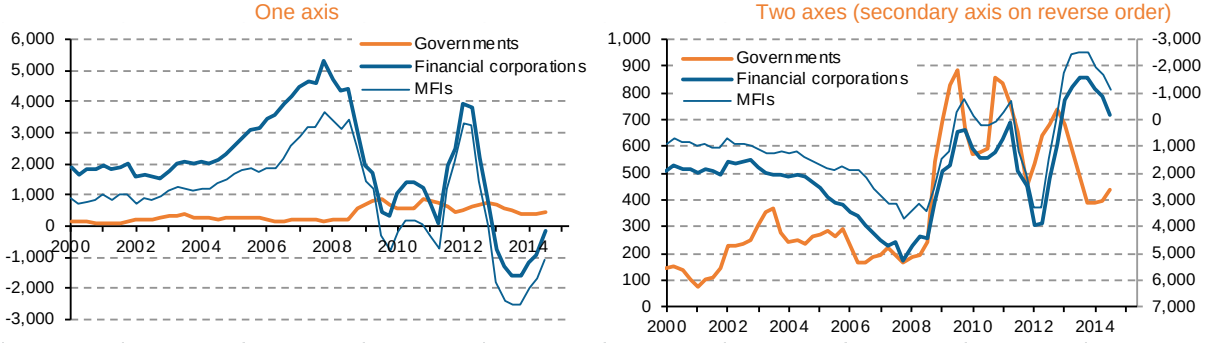
Therefore, the very low levels of transactions in liabilities observed throughout the crisis may be explained, to a large extent, by the high levels of unemployment and the difficulties to obtain credit by large parts of the population. This is also reflected in the increasing level of non-performing loans (see Chapter 1, Section 3.4).

Two features stand out from the series on net transactions for financial intermediaries. Firstly, they triple the size of NFCs or households. Secondly, financial corporations' transactions are highly volatile with quick and large swings. Note that MFIs' transactions are the main drivers of the profile of the overall financial sector.

[16] Flows or transactions are expressed in net terms, that is, actual new assets (or liabilities) minus redemption over the period. It should not be confused with "net" as in net financial worth, which refers to assets minus liabilities in a given moment in time.
[17] Note that the change in the balance sheet depends not only on transactions but also on valuation changes (e.g. as a result of foreign exchange fluctuations) and other changes.
[18] For the evolution of GDP, see Chapter 1, Chart 1.
[19] A debate about *secular stagnation* is currently on-going (see for instance, Teulings and Baldwin, 2014; Wolf, 2014; or Piketty, 2014). For details about demographic dynamics and their impact on the economy, see Chapter 4.
[20] See, for instance, Ostry and Berg (2011), Ostry et al. (2014), IMF (2014), Cingano (2014) or OECD (2014).

These high levels of volatility can have important consequences for stability, not only within the financial sector, but also for the larger economy. The interconnection between the banking sector and public accounts throughout the crisis has widely been acknowledged. This is indeed reflected on the series of net transactions of the government, which are highly influenced by the transactions observed in the financial sector (Chart 10). Having said that, it cannot be discarded that the movements in the series for financial corporations may also influence the funding positions and flows of other sectors in the economy, in particular, households and non-financial corporations.

Chart 10: **Interconnections between the financial sector and the public sector**
Net annual transactions of liabilities (absorption of funding), euro area, € billion



Source: ECB and own elaboration.

The link between the financial sector and governments is explained by the large amounts of capital injected by public authorities in the early stages of the crisis to support the financial sector. On top of this, the series on governments reflect the automatic stabilisers, i.e. the social benefits provided by the public sector to compensate for the impact of the crisis (e.g. unemployment payments). Public deficit (net funding needs) have declined since 2010, partly explained by the improvement in the economic outlook and partly explained by the more constringent economic governance rules (Chart 9, bottom-left panel).

The volatility observed in the external sector in 2008-2009 is explained by the lower attachment to the economy of foreign investors and the high mobility of capital (Chart 9, middle-right panel). These series reflect the repatriation of funds by foreign investors to withstand the effects of the global financial crisis at home. While the provision and absorption of funding had traditionally evolved in parallel, a decoupling is observed since late 2011 indicating a net withdrawal of funding provided by international investors to the euro area economy (see also Chart 5).

3. WHAT? PRODUCTS AND INSTRUMENTS

The composition of assets within the non-financial sectors of the economy (households, non-financial corporations and governments) provides an indication on how the economy is organised and the possibilities (and potential need) for financial intermediation. If households keep their savings in the form of deposits, banks can intermediate and provide credit through loans. However, if households prefer to directly invest in bonds or equity, there is little room (and maybe even no need) for bank intermediation. In general, the product mix depends on the 'preferences' of economic agents, which are in fact a combination of factors such as the need of liquidity for transactional purposes, the remuneration level of the different instruments, risk aversion or entrepreneurial culture, among others. Transaction costs, informational barriers or bankruptcy regimes may also play a role. The recent debate about a 'capital markets union' can be summarised in an analysis of these factors driving the 'preferences' of investors for some products over the others and in detecting potential frictions that may be creating perverse incentives.[21]

[21] The proposal of a capital markets union (CMU) by European Commission President Jean-Claude Juncker in his hearing in the Parliament has triggered an intense debate in the academia, industry and political spheres. See also the green paper on CMU and the accompanying staff working document presented by the European Commission (2015a and 2015b).

The provision of funding can be formalised through different instruments or products with specific features in terms of liquidity, maturity or legal implications (see Table 1). Among the wide range of sources that are available for firms to finance their activities, a major divide appears between equity instruments (i.e. own resources) and debt instruments. Obtaining funding through equity instruments implies the transfer of property to equity providers and their involvement in decision-making. Consequently, the remuneration of equity depends on the results of the company. Therefore equity instruments constitute the first layer for the absorption of losses, but, in compensation for that, equity holders benefit from potential extraordinary profits. In principle, equity instruments are perpetual, so the holders need to find a buyer in case they want to untie their positions. In this context, *quoted shares* can be more easily liquidated than *other equity instruments* because they are quoted in organised markets. One should take into account that equity includes both fresh injections of capital (either at the inception of the company or at a later stage) and the earnings retained throughout the life of the firm. This applies both to quoted shares and to other equity instruments. The case of *insurance technical reserves* represents a special case of equity (see Sections 3.1 and 3.2 for further details).

On the other hand, debt instruments do not transfer property but usually require a fix (interest) payment[22] and the reimbursement of the principal within a specific time frame. *Bonds* are standardised debt instruments that are traded in organised markets. *Loans* are bilateral contracts, which cannot be traded unless they are 'converted' into bonds through securitisation. Besides borrowing from banks, firms can obtain *loans from other economic agents*. There are four types of such loans. First, loans agreed between two companies belonging to a group of companies (intragroup lending). Second, loans agreed between two companies not belonging to the same group, usually stemming from a supplier-customer relationship but that cannot be classified as trade credit. Third, loans provided by households to entrepreneurs and small firms (e.g. family and friends). Finally, loans provided by the State and public authorities whether subsidised or not (e.g. stemming from a government initiative to promote entrepreneurs and start-ups).

The economic transactions between a company and its suppliers, clients, employees and other stakeholders imply intrinsic financing resources that cannot be provided by capital markets nor by the financial sector. These sources of funding are usually generated by the difference between a 'continuous' accrual of economic value and a 'point-in-time' nature of payments and settlements. Therefore, they are not formalised in the form of a loan contract. These sources of funding can be grouped in the category of *trade credit and advances* (receivable or payable), where trade credit refers to the financing positions within the supplier-customer chain and advances refers to the relations with other stakeholders[23].

Many examples of such funding can be mentioned. When we purchase a plane ticket three months before our actual journey through a webpage, we are providing an advance to the air career. In business-to-business relations it is very common to make the payment up to ninety days after the delivery of goods. The employees of a company generate value on a daily basis but they only receive their wages on a monthly basis. Similarly, utility companies (e.g. electricity, water or internet suppliers) provide their services on a continuous basis but they are only paid at period end (e.g. once a month or once a quarter)…

Taxes due and *tax claims* have similar features to advances. Companies intermediate in the collection of VAT taxes, which are only cleared and settled once a quarter. Income taxes have an analogous nature. Annual income declarations are used to calculate the actual tax due to the State by each household for the precedent year and to settle the difference. The existence of those differences (tax reimbursements or the need to pay additional taxes) implies that households have been financing the State or the other way around.

The label *'derivatives'* include a wide range of instruments with very different features with the only commonality of being somehow linked to the evolution of an underlying asset. *Deposits (and currency)* are the most liquid instruments; they are usually kept for transactional purposes, although their holders may also receive a small remuneration.

[22] Although interest rates can also be linked to some market indices, these variable interest rates do not depend on the performance of the company as it is the case for equity instruments.
[23] The financial sector can in fact play a role on trade credit and advances by providing liquidity through "factoring" and other forms of asset-back lending (see Section 4.4 for details).

In general, long-term sources of funding (e.g. equity, long-term loans or long-term bonds) should be used to finance long-term assets (e.g. buildings or machinery) and short-term source of funding should be used to finance current assets (e.g. inventories or advances to customers).

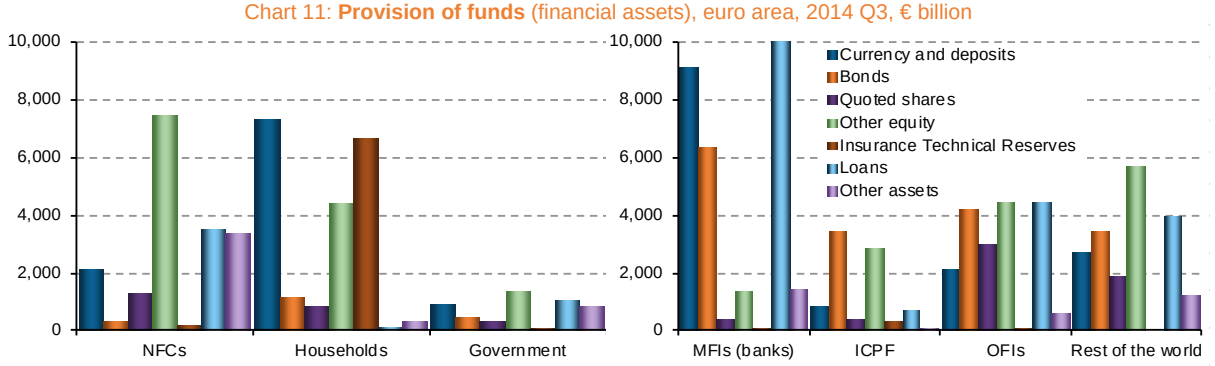
In any financial transaction, there are two counterparties involved: one provides the funds that the other one needs. As a consequence, any instrument is recorded as an asset by one counterpart and as a liability by the other one. The rest of this section analyses the evolution of the mix of instruments used by the different institutional sectors. Besides distinguishing the non-financial sectors of the economy from the financial sector, the provision of funding (assets) is singled out from the use of funding (liabilities).

3.1. Provision of funds: instruments from the assets point of view

The main features of the instruments used by the different euro area sectors for keeping their savings or for providing financing to other agents in the economy are summarised in Chart 11[24]. About a quarter (24 per cent) of the assets of the non-financial sectors of the economy are held in the form of deposits and currency, mainly due to their function in transactions. A bit more than a quarter (30 per cent) is invested in non-quoted shares. This includes intra-group holdings of non-financial corporations, the holding of public corporations by governments and equity provided by households for family businesses.

Insurance technical reserves (including pensions and standardized guarantee schemes) are very significant for households (32 per cent of their assets) but rather irrelevant for NFCs and governments. NFCs provide (intercompany) loans by up to 18 per cent of their assets. Governments also provide loans to other sectors up to 21 per cent of their assets. Other assets (e.g. trade credit or tax claims) represent over 20 per cent of financial assets for both NFCs and governments.

Chart 11: **Provision of funds** (financial assets), euro area, 2014 Q3, € billion



Note: MFIs loans: € 12 600 bn. MFIs currency and deposits includes mainly interbank lending provided. NFCs: non-financial corporations, MFIs: monetary and financial institutions, ICPF: insurance corporations and pension funds, OFIs: other financial institutions. 'Other equity' includes holdings of investment funds shares, which is particularly significant for ICPF. 'Insurance technical reserves' include pensions and standardized guarantee schemes.
Source: ECB: euro area accounts.

Investment in market instruments (bonds and shares) is rather limited (less than 10 per cent of financial assets). NFCs invest mainly in shares (7 per cent of their financial assets) while households invest slightly more in bonds (5 per cent) than in shares (4 per cent).

In terms of evolution (Chart 12), the crisis eroded the value of the equity investments of the non-financial sectors of the economy (both quoted shares and other equity), both in 2008-2009 and during the second dip of 2011. 'Other equity' recovered pre-crisis values in 2013 while the investments by the non-financial sectors of the economy in quoted shares have not come back to pre-crisis levels yet. For disentangling how much it is due to low performance of these investments and how much is due to reallocation of resources to other types of assets, see Section 3.4, where flows are analysed.

All other assets of the non-financial part of the economy seem to have passed rather unscathed from the crisis as they have continuously expanded. Bonds represent a particular case as they expanded up to early 2011 and, thereafter, they stagnated or slightly declined.

[24] While Sections 3.1 and 3.2 focus of the euro area, the orders of magnitude are similar for the EU as a whole. Country data are discussed in Section 3.3.

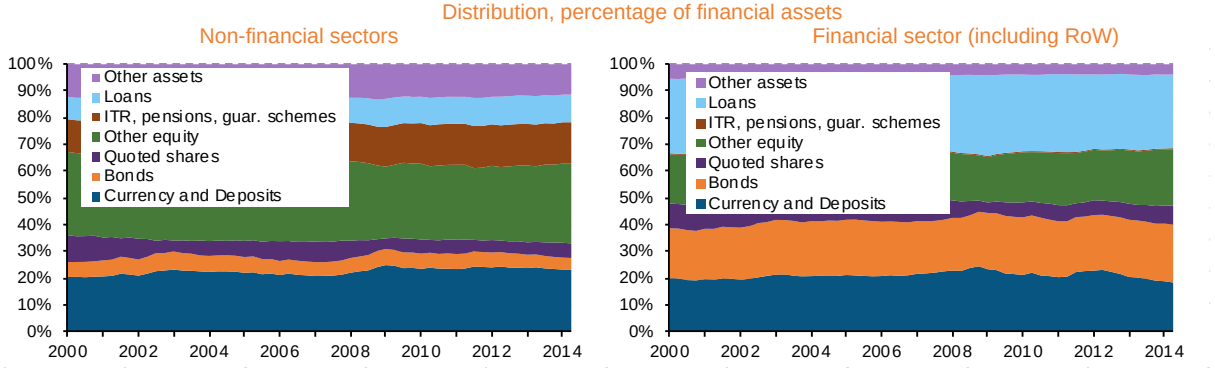
The instruments used by the financial sector are, to a large extent, influenced by the ones used by the non-financial part of economy as they determine its capacity to intermediate. The main financial assets of financial corporations are loans (40 per cent of MFIs' assets and 21 per cent of OFIs' assets). However, one should keep in mind that those loans include both loans to the economy and inter-financial loans. Similarly, the category 'currency and deposits' (20 per cent of the financial assets of the financial sector) corresponds mainly to interbank (or inter-financial) loans. Holdings of equity are an additional indication of the interconnections within the financial sector as it mainly reflects financial groups or holdings of investment fund shares (the latter particularly in the case of ICPFs). Having said that, some of the equity holdings also correspond to capital provided to the economy (see Section 4.3 for further details). Given their role as providers of credit, financial corporations invest a significant share of their assets in bonds: 40 per cent in the case of ICPFs and about 20 per cent in the case of MFIs and OFIs.

The rest of the world provides financing to the euro area through a variety of instruments, including equity (31 per cent of its financial assets), loans (20 per cent) and bonds (18 per cent).

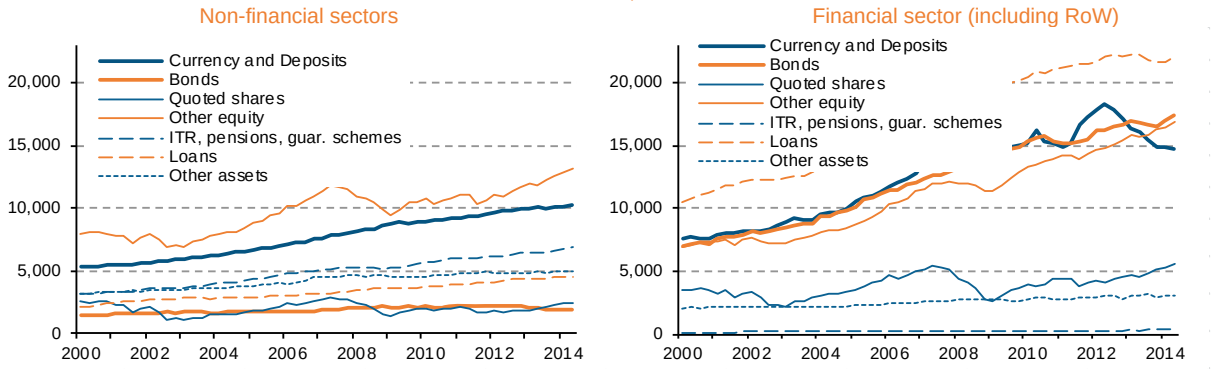
As in the case of the non-financial part of the economy, the investments in equity by the financial sector were significantly hit by the financial crisis. However, they have clearly recovered beyond pre-crisis levels. The provision of loans by the financial sector stagnated in 2008-2009 and again from mid-2012 onwards. This is in part reflecting the process of deleveraging (see Chapter 1 and Section 4.2 below for further details). The holdings of bonds have continuously expanded even in the last years (contrarily to the holdings of bonds by the non-financial sectors of the economy).

The series 'currency and deposits' present a specific profile. This includes interbank loans provided by banks, which were particularly hit by the financial turmoil and the deterioration in confidence. This series has been influenced by the monetary policy of the central bank, particularly the LTROs and the purchase of securities (see Chapter 1).

Chart 12: **Provision of funds** (financial assets), breakdown by instrument, euro area
Distribution, percentage of financial assets



Totals, € billion



Notes: Non-financial sectors include households, NFCs and governments. The financial sector includes MFIs, OFIs and ICPFs. RoW: Rest of the World; NFCs: Non-financial corporations. ITR: Insurance technical reserves (it also includes pensions and standardized guarantee schemes). Non-financial assets (such as buildings, machinery, land, etc.) are not reported. For the financial sector, 'currency and deposits' includes interbank lending provided. Holdings of investment fund shares are included in 'Other equity'.
Source: ECB, Eurostat and own calculations.

Besides the disparate use of instruments across sectors, note the difference in size (see also Section 2 and Chart A1 in the Annex). In particular, the financial sector has a total size of over € 80 000 billion in terms of financial assets (including the RoW), which is about twice as big as the non-financial part of the economy (€ 43 700 billion). In relative terms, the balance sheet of the financial sector represents 830 per cent of euro area annual GDP and financial assets of the non-financial part of the economy economy represent 450 per cent of euro area annual GDP.

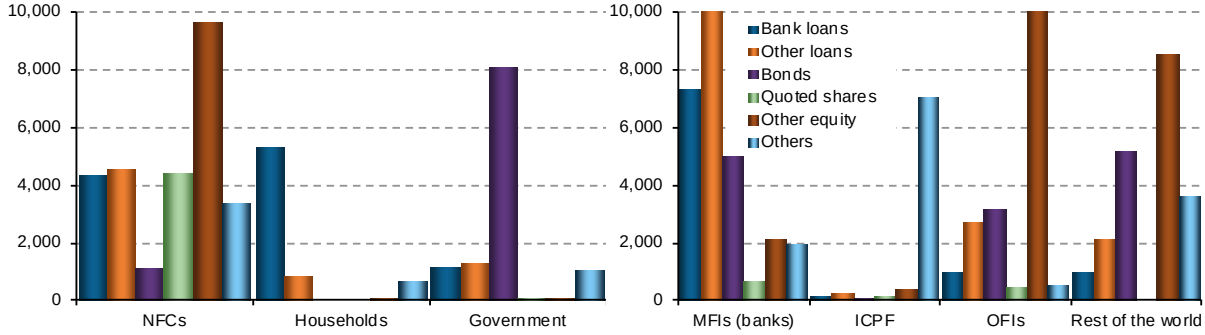
3.2. Sources of financing: instruments from the liabilities point of view

The sources of financing available for the economy are, to a large extent, determined by the type of instruments in which the different economic sectors invest their assets as presented in the previous section. However, given the intermediation function of the financial sector, the correspondence between assets and liabilities can be more complex.

The funding mix differs from one sector to the other (Chart 13). **Non-financial corporations (NFCs)** finance their activities through a variety of sources. More than half of NFCs' activities are financed with own resources (51.4 per cent); the majority of which takes the form of equity other than quoted shares (35.2 per cent total liabilities) and, the rest, the form of quoted shares (16.2 per cent). Given that less than 0.05 per cent of EU companies have listed shares[25], a 16 per cent use of quoted shares points to well-developed equity markets (see Section 5.2 for further details).

Among debt instruments, loans are the most widely used by euro area firms. Bank loans and other loans represent about 15 per cent of total financing sources each. NFCs also recourse widely to trade credit and similar advances for financing their activities (9.0 per cent of liabilities). The issuance of bonds in capital markets is much less used (4.3 per cent). Finally, the remaining funding sources represent 3.2 per cent of the financial resources used by firms. Overall, NFCs finance 36 per cent of their activities through the financial sector (either by borrowing from banks or by issuing bonds or shares). Therefore, NFCs obtain the majority of their financing (64 per cent) from sources outside the financial sector.

Chart 13: **Sources of funding** (financial liabilities), euro area, 2014 Q3, € billion



Note: 'Bank loans' for MFIs correspond to interbank deposits received. 'Other loans' for MFIs correspond to deposit received (other than interbank): € 14 000 billion. 'Other equity' for OFIs: € 12 700 billion. NFCs: non-financial corporations, MFIs: monetary and financial institutions, ICPFs: insurance corporations and pension funds, OFIs: other financial institutions. 'Other financing' for ICPFs corresponds to insurance technical reserves. Investment fund shares and mutual fund shares are included in other equity.
Source: ECB: euro area accounts.

Households use bank loans as their main source of financing (75 per cent of their financial liabilities), while the use of other sources is more limited.

The bulk of **governments'** financial liabilities are bonds (about 70 per cent of their financial liabilities). Bank loans, other loans and 'other sources' (trade credit, pending bills, pending transfers, advanced taxes, etc.) represent about 10 per cent each.

The **financial sector** stands out by the low level of equity issued in the market (2 per cent of its financial liabilities are quoted shares compared to 16 per cent for non-financial corporations). Capitalisation is particularly low for banks (less than 10 per cent of total equity compared to over 50 per cent in non-financial corporations[26]).

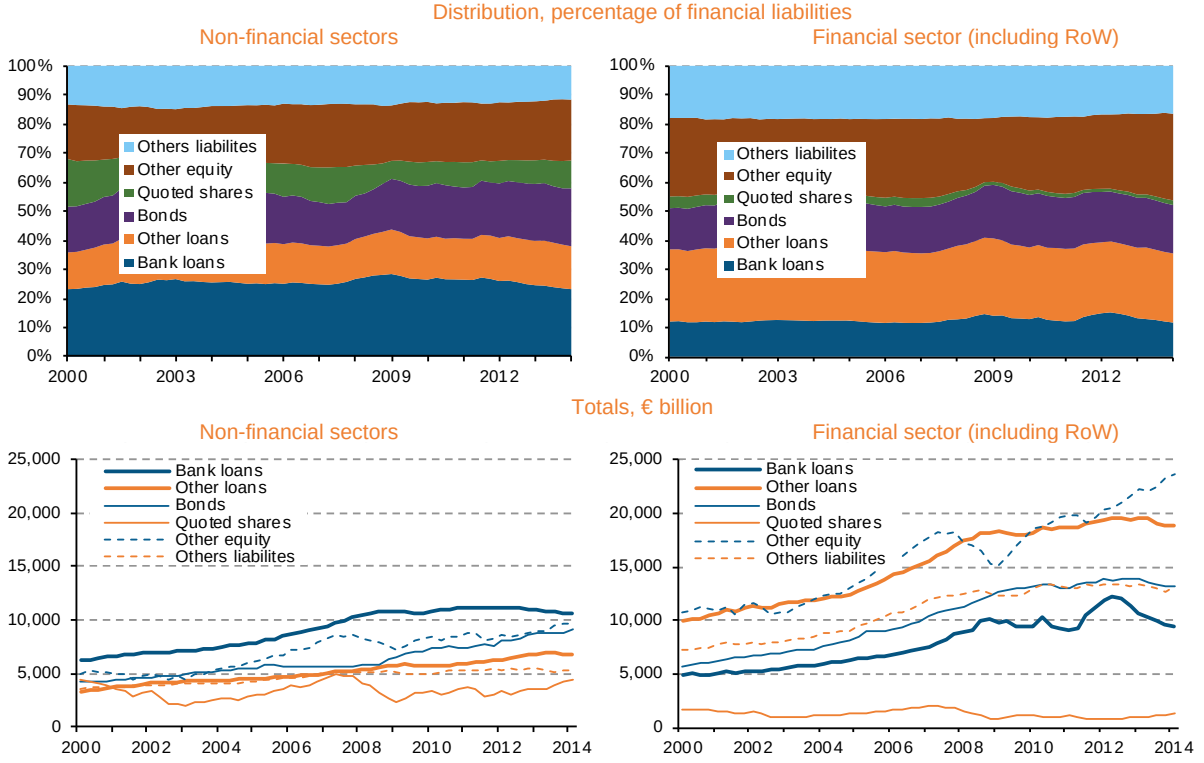
[25] There are over 22 million companies in the EU, but less than 9 thousand of them have listed shares.
[26] See Kuehnhausen and Stieber (2014).

Even when the financial sector is taken as a whole, the capitalisation is rather limited (36 per cent). One should take into consideration the interlinkages within the financial sectors (for instance, the equity of OFIs corresponds mainly to shares of investment funds and mutual funds[27]), which imply a lower loss absorption capacity than what the headline figure of equity may seem to suggest[28]. In the wake of the financial crisis and following both market pressure and regulatory reforms, the financial sector, and banks in particular, have been raising new capital and reinforced its loss absorption capacity[29].

The use of bonds as a source of funding is significant for banks (15 per cent) and for OFIs (18 per cent) and much less so for ICPFs. The most prominent source of funding for banks are deposits and loans provided by other sectors (45 per cent of financial liabilities) and interbank lending (24 per cent). These two categories are also somehow relevant for OFIs (a combined value of 18 per cent). The main source of financing for ICPFs are insurance technical reserves, which are included in the category 'Others'.

In terms of evolution (Chart 14), the crisis has more directly impacted equity (both quoted shares and other equity) as it was already observed from the perspective of assets. However equity recovered pre-crisis values already from mid-2010, particularly for equity other than quoted shares and more strongly for the financial sector. This is in line with the pressure to reduce leverage and increase capital levels. In the case of the non-financial part of the economy, a stagnation or even a decline in the volume of bank loans received is observed since the outbreak of the crisis. This is consistent with the evolution observed from the assets side (see Chart 12). A similar evolution is also observed for other liabilities, consisting mainly on trade credit, which is explained by the context of reduced economic activity and also, to a certain extent, by a certain decline in confidence observed since the outbreak of the crisis.

Chart 14: **Sources of funding** (financial liabilities), breakdown by instrument, euro area



Notes: Real economy includes households, NFCs and governments. The financial sector includes MFIs, OFIs and ICPFs. RoW: Rest of the World; NFCs: Non-financial corporations. Deposits received by banks are included under the category 'Banks loans' (interbank deposits) or 'Other loans' (deposits other than interbank). Investment fund shares and mutual fund shares are included in other equity.
Source: ECB, Eurostat and own calculations.

[27] A number of authors argue that, in the last 10 to 15 years, there has been an increased intra-financial system complexity via the lengthening of intermediation chains (Adrian and Shin, 2010).
[28] In this context, capital requirements legislation includes a correction for intragroup holdings of equity as these have a much lower loss absorption capacity.
[29] For further details, see Section 5.2.

This negative evolution in loans and other liabilities is more than compensated by the expansion in the issuance of bonds, which increased by over 60 per cent between mid-2008 and mid-2014 and loans other than bank loans (intercompany loans, loans from households and loans from governments), which increased by almost 30 per cent during the same period. After the correction of 2008-2009 (and a smaller one in 2011), equity has also expanded, particularly for non-quoted equity.

As a consequence, the total size of funding resources used by the non-financial part of the economy expanded from € 39 500 billion in late 2007 to over € 46,000 billion in mid-2014 (see Chart A2 in the Annex). Although an important part of this expansion is explained by the increase in government debt (from € 7 200 billion to € 11,600 billion in the same period), non-financial corporations also increased their use of funding (from € 26 200 billion to € 27,800 billion), but at a slower pace than in the mid-2000.

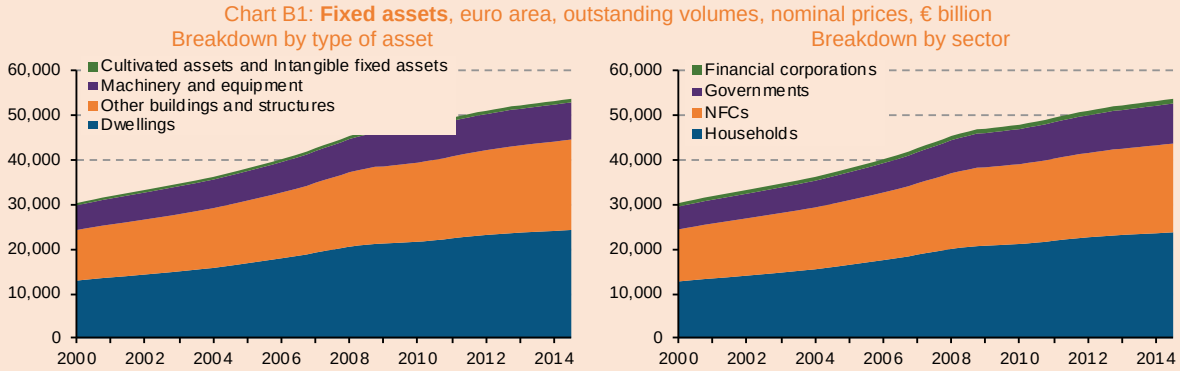
Apart from the significant expansion in 'other equity', which is mainly explained by the expansion of OFIs (particularly investment funds, see Section 4.1.1 for further details), the financial crisis reduced the growth rate in all other sources of financing, which stagnated since early 2012 and even started to decline since 2013, in most cases. As a consequence, the overall size of funding resources used by the financial sector has stagnated around € 80 000 billion since late 2011 (see Chart A2 in the Annex). This is in partly due to the excessive size reached by the financial sector (relative to the € 9 200 billion of the euro area GDP) and the need to deleverage (see also Chapter 1). Having said that, the different subsectors within the financial sector show divergent evolutions. The total size of the banking sector declined from a peak of almost € 35 000 billion in early 2012 to € 31 000 billion in mid-2014 while ICPFs and OFIs kept expanding (for further details, see Chapter 5). The external sector also slightly increased its absorption of funding provided by the euro area economy (see Chart 5).

Box A. **Non-financial assets and the investment plan for Europe**

The wealth of the economy goes beyond the financial assets and liabilities discussed throughout this chapter. Tangible assets such as buildings, machinery or stocks (inventories) are the actual foundations of an economy as they are indispensable to produce goods and services. Moreover, the existence of these non-financial assets explains, to a large extent, the capacity of households and non-financial corporations to borrow and obtain credit.

Sector accounts indicate that the euro area economy had accumulated almost € 55 000 billion, (equivalent to 550 per cent of GDP) of fixed assets[30]. The bulk of it is either residential real estate (45 per cent of the total) or other buildings and structures (38 per cent). Machinery and equipment is also significant (15 per cent), while the value of other assets is much lower (Chart B1, left-hand panel).

Chart B1: **Fixed assets**, euro area, outstanding volumes, nominal prices, € billion



Source: ECB, Eurostat and own calculations.

The majority of this wealth is owned by households (44 per cent of the total) or NFCs (37 per cent), followed by governments (17 per cent). The size of fixed assets owned by financial institutions is much more limited (Chart B1, right-hand panel). However, these numbers need to be qualified, particularly against financial assets and liabilities of the different sectors (see Charts 3). The wealth of households in the form of fixed assets is to be added to their net financial position (see Chart 4), while NFCs have negative net financial assets (see Chart 4). Finally, the valuation of government assets such as

[30] This figure does not include inventories and other current assets.

schools, roads and hospital are subject to a certain level of uncertainty as not many transactions are available to be used as a benchmark[31].

With respect to the evolution, an upwards trend in the value of fixed assets can be observed from the series on outstanding volumes (Chart B1) and that the growth has slowed down since the outbreak of the crisis. However, flow series provide a better overview of the dynamics of fixed assets (Chart B2). Two main points outstand. Firstly, the built up of a real estate bubble starting in the mid-2000s and the subsequent burst is clearly observed for both dwellings and other buildings and both for households and NFCs. A significant part of this swing can be explained by price effects.

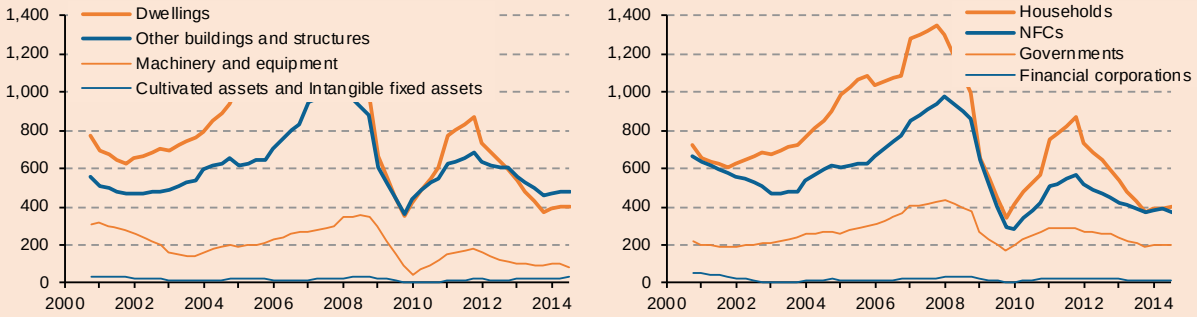
Secondly, in the last few quarters, and after a short recovery, investment flows have decreased again. Although investment in fixed assets remains still positive, it is clearly lower than the levels observed prior to the crisis, particularly for machinery and equipment and for investments by governments[32].

The decline in investment is closely related to the lack of credit and to the phenomenon of secular stagnation. A credit crunch may be constraining investment and economic growth, but also low economy activity may not require new investment nor additional credit. While, the exact causality may be difficult to disentangle, these dynamics represent a vicious circle.

An investment plan for Europe

This vicious circle was identified by the European Commission investment plan for Europe presented in late 2014[33]. In the short-term, weak investment slows economic recovery. In the longer term, the lack of investment hurts growth and competitiveness. Weak investment has a considerable impact on the capital stock, which in turn holds back Europe's growth potential, productivity, employment levels and job creation.

Chart B2: **Fixed assets**, euro area, net annual flows, nominal prices, € billion



Notes: Net indicates that the series correspond to increases on the real value of fixed assets beyond replacing depreciated assets; negative values indicate that depreciation was higher than gross investment.
Source: ECB, Eurostat and own calculations.

The investment plan has been identified as a priority of the Commission aiming at mobilising sources of investment finance to deliver at least € 315 billion of additional investment over the next three years, making sure this extra finance contributes to growth in ways that are adapted to each sector and geography.

The investment plan for Europe has three objectives: to provide additional fuel to the EU's recovery and reverse the drop in investment; to take a decisive step towards meeting the long-term needs of our economy by boosting competitiveness in strategic areas; and to strengthen the European dimension of the existing knowledge, human capital and physical infrastructure, and the interconnections that are vital to the European Single Market.

According to European Commission estimations, the investment plan has the potential to add € 330 to € 410 billion to the EU's GDP and create 1 to 1.3 million new jobs in the coming three years.

3.3. Instruments and products: country analysis

European aggregates may conceal wide differences across countries. Given that households and NFCs are the main providers of funding in the economy and that NFCs are the main net users of financing, the country

[31] For further details, see Piketty (2014).
[32] Even more so, if one would take into account the effect of inflation. As a reference, consumer prices increased by about 30 per cent between 2000 and 2014. Therefore, the value of investments in 2014 should be corrected by about 30 per cent downwards to compare them with the value in the early 2000s. However, the evolution of prices for real estate and fixed assets may have had a slightly different evolution than consumer prices.
[33] See European Commission (2014c).

analysis presented in this section focuses on the composition of households' assets, NFCs' financial assets and NFCs' financial liabilities across countries[34].

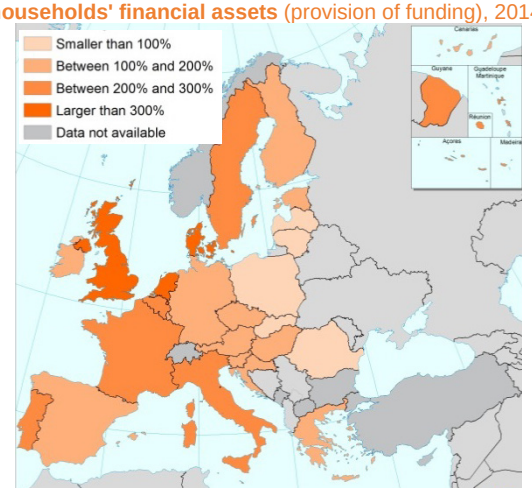
Provision of funding by households: country analysis

The size of households' financial assets as a source of financing for the rest of the economy varies widely from country to country. In relative terms, the households with the largest financial size are found in the Netherlands, Denmark, the UK and Belgium (about 300 per cent annual GDP) Sweden, Italy, Malta and Portugal and next in size. The smallest contributions to funding provided by the households sector relative to GDP appear in Slovakia, Romania, Lithuania, Poland and Latvia (smaller than annual GDP) followed by the Czech Republic, Hungary, Slovenia, Croatia or Estonia (Chart 15).

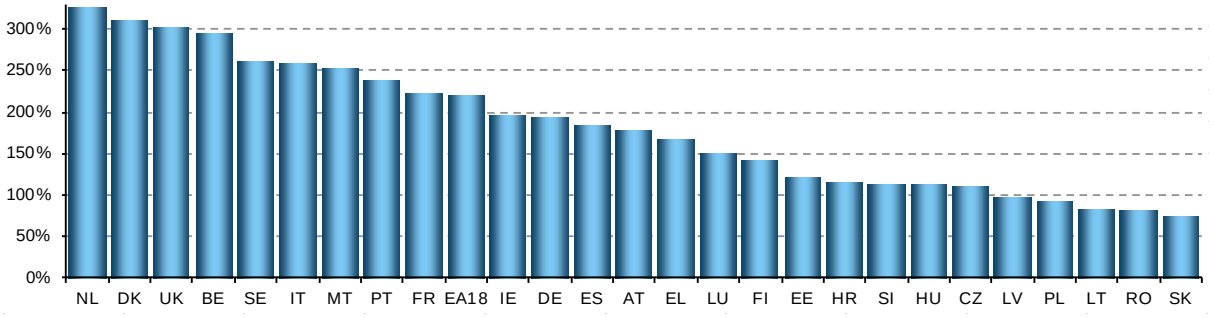
These data seem to depict a cliff between central and eastern European countries on one side and western and northern European countries on the other. The former have a much less developed financing structure in their economy than the latter. The composition of assets (Chart 16) provides further information about potential drivers and consequences of the different size of the household sector observed across countries. The breakdown by instrument seems to point to the divide between the East and the West to be explained, to a large extent, by investment products (e.g. insurance technical reserves and bond holdings).

Households' financial assets can be classified in two groups. Currency, deposits and equity would be used for day-to-day needs[35]. Other investment products are used as a storage of wealth for future needs. Data seem to indicate that only when a minimum level of products for day-to-day needs has been achieved, households can invest in additional products. Countries where households' financial assets have reached about 150 per cent of GDP tend to invest increasing amounts of funds in investment products such as insurance technical reserves, pension funds and bonds (e.g. the UK, the Netherlands, Denmark, Belgium, Sweden, Belgium, Italy, Malta, France, Ireland and Germany). Pension features (pay-as-you-go vs funded plans) and demographic trends (e.g. aging population) may also play a role in the funds allocated to these investment products by households (see Chapter 4 on longevity).

Chart 15: **Total size of households' financial assets** (provision of funding), 2014 Q3, percentage of GDP



[34] For an in-depth analysis of financial intermediaries, see Section 4.
[35] In this context, currency and deposits are needed for transactional purposes; whereas equity, particularly equity other than quoted shares, reflects the entrepreneurial activities of many households as a way to earn their leaving.



Notes: Data for Bulgaria and Cyprus are not available.
Source: ECB, Eurostat and own calculations.

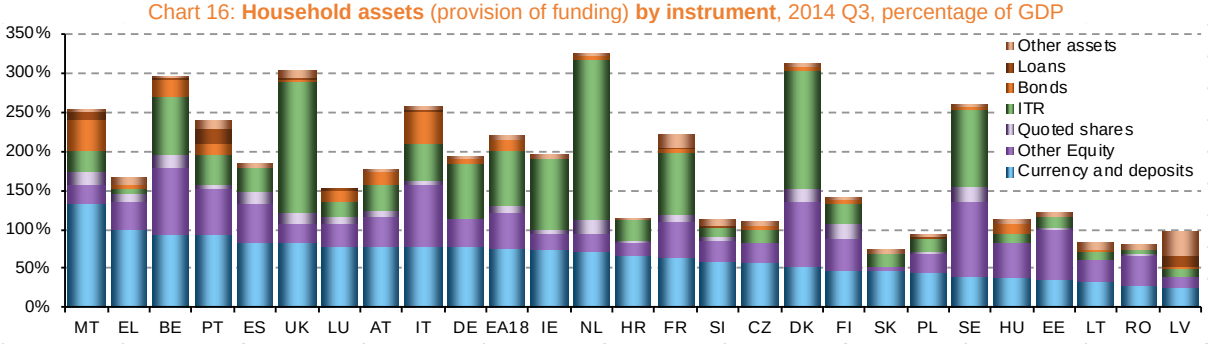
The thesis that a minimum amount of currency, deposits and equity needs to be achieved before households invest in saving products is further reinforced by the proportion of each funding source within the total balance sheet of households. Indeed, countries with a smaller size of households' assets relative to GDP tend to have a larger proportion of their assets in the form of currency and deposits. For instance, in Slovakia, Croatia, the Czech Republic, Slovenia and Poland, currency and deposits represent more than half of households' financial assets[36].

Note that, ultimately, households are the main net providers of financing to the economy and that the capacity of households to generate financial assets and their choices about the exact products used to keep their savings frame the financing system and the role of the financial sector, in particular, the capacity of the banking system to intermediate and provide loans. On the other hand, in countries where households have the capacity to keep their savings in the form of various investment products, other areas of the financial sector can be more developed, particularly insurance corporations and pension funds but also other financial institutions[37].

Provision and use of funding by non-financial corporations: country analysis

The distribution of the size of NFCs across countries is similar to the one of households, particularly for financial liabilities (Chart 17). The difference between assets and liabilities is driven by the significant amount of tangible assets in NFCs' balance sheet, particularly in the industrial sector, and explains why the NFCs sector is the main net user of funding (i.e. it shows a negative net worth position) in the economy (see Box A).

Chart 16: **Household assets** (provision of funding) **by instrument**, 2014 Q3, percentage of GDP



Notes: Data for Bulgaria and Cyprus are not available. ITR: Insurance Technical Reserves (it includes pensions and standardized guarantee schemes). For Germany, 'Other equity' includes also quoted shares.
Source: ECB, Eurostat and own calculations.

The overall size of financial liabilities is quite large in a number of countries, e.g. representing more than 300 per cent annual GDP (even more than 500 per cent in a few cases). An excessive size of financial liabilities can derive in the problems of debt overhang as discussed in Chapter 3. Having said that, one should take into account that own resources (quoted shares and other equity) represent a significant shares of financial liabilities (and those are exempted from the problems of debt overhang).

[36] Greece, and to a certain extent also Portugal, can be seen as a particular case. The intensity of the financial and economic strain that these countreis have suffered may have influenced households' behaviour with respect to the proportion of their assets kept in the form of currency and deposits, e.g. for precautionary reasons.
[37] See Section 4 for further details.

The composition of NFCs' financial assets (Chart 18) provides information about the transactional needs of NFCs (e.g. currency and deposits), about intragroup relationships (e.g. investment in equity or intragroup loans), about relationships with customers (e.g. advances and trade credit) or about idle resources that are temporarily invested (e.g. bonds).

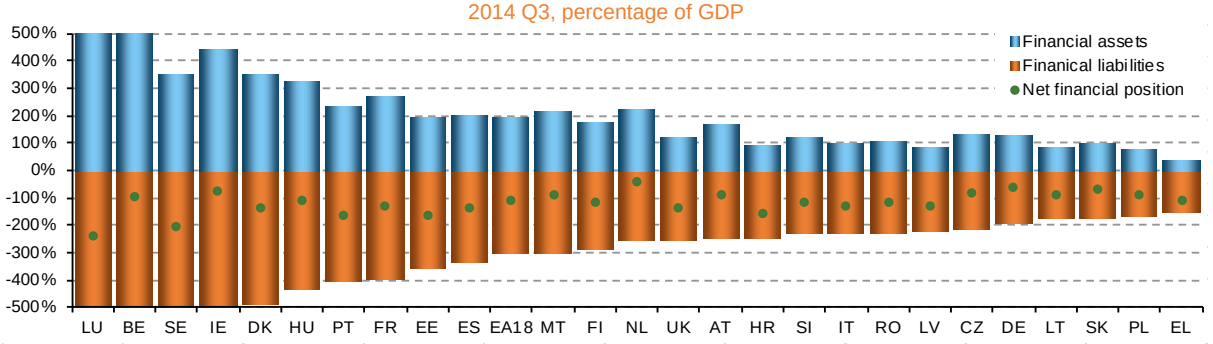
In countries that host large corporations and industrial groups, NFCs tend to have a large amount of assets in the form of equity investments or in the form of company loans, which points to intragroup ownership and lending (e.g. Luxembourg, Denmark, Ireland, Sweden, Belgium and France); Hungary seems to be also part of this group. In countries where the financial sector is less developed, NFCs tend to provide relatively more financing facilities to their customers in the form of trade credit and advances (e.g. in Croatia, Romania, Italy, Czech Republic, Lithuania, Latvia, Poland and Slovakia trade credit represents about a third of the financial assets of NFCs). There are no significant differences in the relative holdings of currency and deposits by NFCs; this indicates that firms are confronted with similar transactional needs across countries.

In the current context where some firms are confronted with difficulties to access financing, it is critical to analyse the composition of their liabilities (Chart 19). The mix of funding sources that NFCs use for financing their activities depends, to a large extent, on the funding conditions and available sources at their country of residence, e.g. how developed financial markets are.

NFCs across countries finance most of their activities with own resources: equity represents, in general, about 50 per cent of firms' liabilities. Western countries are the ones with a larger recourse to markets to obtain that equity (i.e. through the issuance of quoted shares). Indeed, in the UK, the Netherlands, Finland, Ireland, Denmark, Sweden and France[38], companies finance between 15 and 35 per cent of their activities through quoted shares (what represents 70 per cent or more of the respective annual GDP); while, in easter countries, quoted shares represent at most about 5 per cent of total liabilities and at most 20 per cent of annual GDP. Having said that, the use of other forms of equity as a source of funding is significantly larger than quoted shares in the vast majority of countries with the exception of Finland, Ireland, the Netherlands and the UK, where quoted shares have a similar or even larger size than other equity instruments.

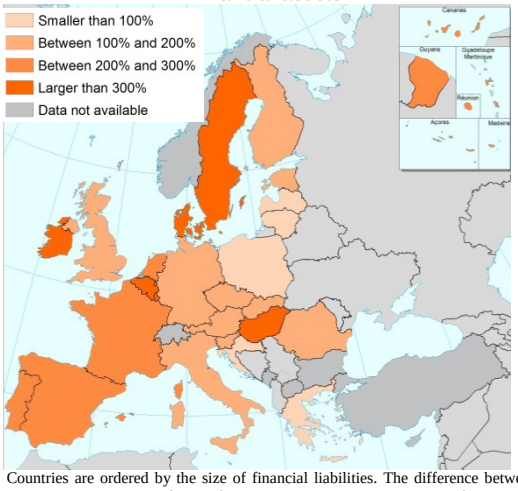
All other sources of financing enter in the category of debt financing. An excessive accumulation of debt is sometimes mentioned as one of the underlying causes of the crisis and one factor dragging the recovery in some countries through the problems stemming from excessive leverage and debt overhang[39]. Given the large recourse to equity as a source of funding, NFCs' debt does not represent, typically, more than 50 per cent of liabilities. However, NFCs' debt can be large in proportion to GDP. This is particularly the case in countries like Luxembourg, Ireland, Belgium, Portugal, Sweden and Malta, where NFCs' debt represents between 200 and 500 per cent of the respective annual GDP; Hungary, Spain, Estonia, France, Denmark and Croatia are next in importance (Chart 19). This may be pointing to an excessive size of the NFCs' sector.

Chart 17: **Provision of funding** (financial assets) **and sources of funding** (financial liabilities) **by non-financial corporations**
2014 Q3, percentage of GDP

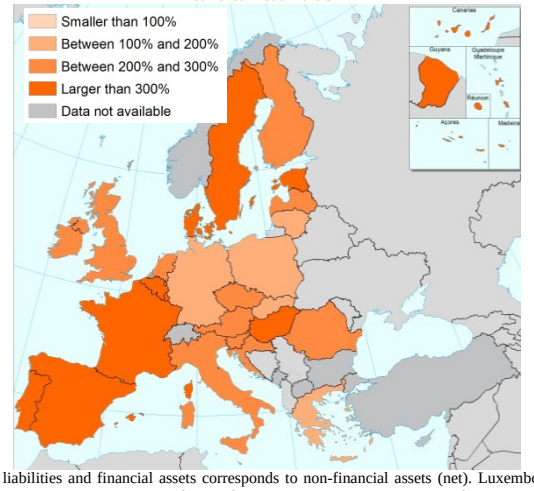


[38] Germany should probably be added to this group; however, the breakdown between quoted shares and other equity is not available for Germany on the statistics on Sector Accounts.
[39] For a further discussion on the problem of debt overhang, see Chapter 3.

Financial assets



Financial liabilities



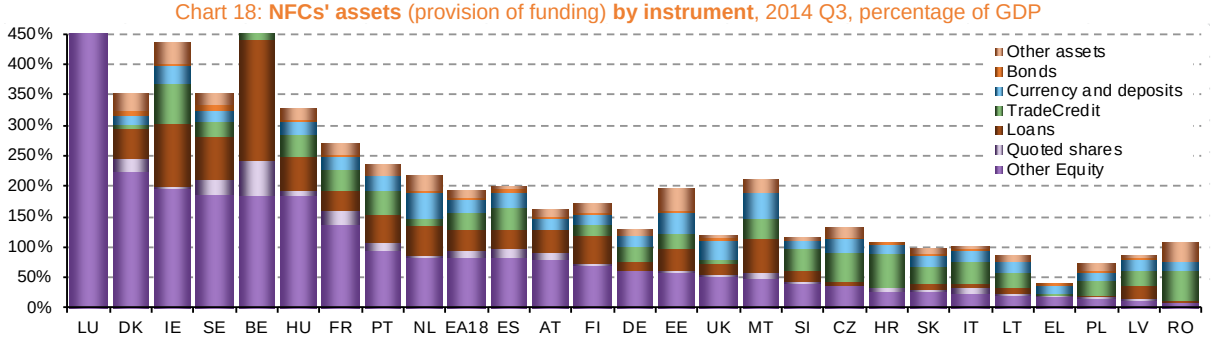
Notes: Countries are ordered by the size of financial liabilities. The difference between financial liabilities and financial assets corresponds to non-financial assets (net). Luxembourg: financial assets = 930 per cent of GDP, financial liabilities = 1,170 per cent of GDP; Belgium: financial assets = 520 per cent of GDP, financial liabilities = 620 per cent of GDP; Sweden: financial liabilities = 560 per cent of GDP. Data for Bulgaria and Cyprus are not available.
Source: ECB, Eurostat and own calculations.

Turning to specific sources of funding, the availability and use of bank loans as a source of funding is constrained by the capacity of the banking sector to intermediate. This depends, in turn, on the availability of deposits in the economy (see Section 3.3.1). In this context, firms in countries with limited availability of households' currency and deposits tend to have a more restricted access to bank loans. Indeed, in Poland, Romania, Slovakia, Lithuania, Czech Republic and Hungary both households' deposits and NFCs' bank loans are not large (they represent about 50 per cent of GDP and less than 25 per cent of GDP, respectively).

NFCs tend to compensate a low recourse to bank loans with other sources of funding, in particular, with trade credit and 'other loans'. For instance, trade credit represents between 15 and 20 per cent of total liabilities in countries like Poland, Romania, Czech Republic, Slovakia and Lithuania, where the recourse to bank loans is limited (bank loans represent less than 25 per cent of annual GDP). As could be expected, trade credit from the perspective of liabilities (trade credit received) tends to mirror trade credit from the perspective of assets (trade credit provided).

Loans other than bank loans, representing between 15 and 25 per cent of liabilities in the majority of countries, are widely used as a source of funding. Some of these loans could be considered as close substitutes for banks loans (e.g. loans from family and friends or loans provided by the government), but some other such loans are rather similar to trade credit (those stemming from a supplier-customer relationship). These loans other than bank loans are used both in eastern and western countries and in countries both with and without a large issuance of quoted shares, e.g. in Ireland, Belgium, Hungary, Croatia, Malta and Finland such loans represent more than 20 per cent of firms' liabilities.

Chart 18: **NFCs' assets** (provision of funding) **by instrument**, 2014 Q3, percentage of GDP



Notes: Trade credit is not available for Austria. For Germany, 'Other equity' includes also quoted shares. Data for Bulgaria and Cyprus are not available. Luxembourg: Other equity = 589%; Quoted shares = 2%; Loans = 220%; Trade credit = 42%; Currency and deposits = 58%; Bonds = 7%; Other assets = 12%. Belgium: Trade credit = 38%; Currency and deposits = 35%; Bonds = 7%; Other assets = 0%.
Source: ECB, Eurostat and own calculations.

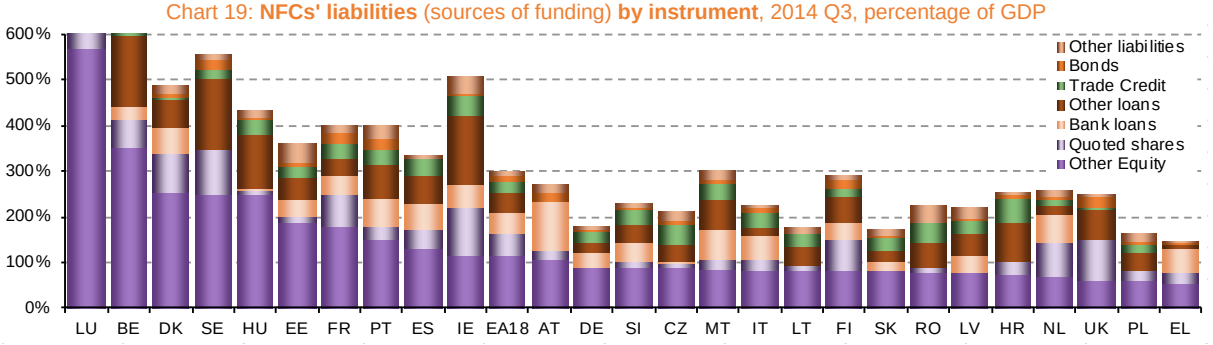
It has also been argued, that some of this intra-company loans may be used by large corporations for tax optimisation. In this context, a subsidiary can be established in a country with a more favourable tax regime

which would make a loan to the company's main business. A similar goal can be reached by placing deposits and asking for a loan in a foreign country with a more favourable tax regime[40]. Although, it is not possible to estimate the exact amount with current statistics; these operations are probably more significant in the countries with a significantly larger size of 'other loans' (both on the assets and the liabilities side) and of currency and deposits than the average case.

The issuance of bonds in the markets, representing on average less than 4 per cent of liabilities, is a marginal source of financing. It is slightly more significant only in the UK and Austria (about 10 per cent of financial liabilities) followed by Portugal, France and Finland (6 per cent).

Finally, 'other liabilities' are, in general, not significantly used as a source of financing except in a few countries (e.g. they represent about 10 per cent of liaiblities in Romania, Estonia, Latvia, Poland, the Czech Republic and Germany). This category includes items such as taxes due, derivatives, factoring, leasing, etc.

Chart 19: **NFCs' liabilities** (sources of funding) **by instrument**, 2014 Q3, percentage of GDP



Notes: Trade credit is not available for Austria. For Germany, 'Other equity' includes also quoted shares. Data for Bulgaria and Cyprus are not available. Luxembourg: Quoted shares = 139%; Bank loans = 113%; Other loans = 239%; Trade credit = 33%; Bonds = 55%; Other liabilities = 23%. Belgium: Trade credit = 34%; Bonds = 12%; Other liabilities = 0%.
Source: ECB, Eurostat and own calculations.

3.4. Products and instruments' dynamics

The analysis presented throughout Sections 3.1 to 3.3 is based on outstanding volumes of assets and liabilities, which provide a good snapshot of the funding provided and used by the different sectors in the economy at a given moment in time. However, volumes may not offer the best insights to analyse the dynamics of financial instruments for two main reasons. On the one hand, given that volumes represent the cumulative position over a long period of time, latest developments impact only marginally total volumes. On the other hand, volumes can be affected by valuation changes, which may blur or distort the actual increases or decreases in the activities of firms (e.g. the recent monetary decision of the Swiss Central Bank led to an appreciation of almost 30 per cent of the Swiss franc. As a consequence, some loan portfolios in countries like Poland, Croatia or Austria increased in value without any additional property being purchased. Large swings in the market prices of quoted shares can generate similar effects).

Therefore, this section focuses on the evolution of the different financial instruments and products in terms of net transactions[41]. The analysis is restricted to households and NFCs because the specific situation of financial corporations and governments is widely discussed in Sections 4 and 5[42].

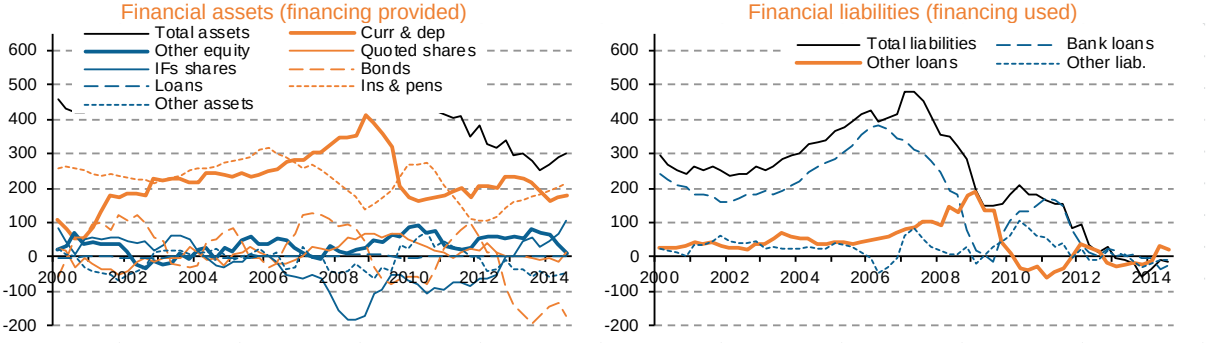
'Fresh' funding provided and used by households

The financial crisis eroded the capacity of households to generate new financing to the rest of the economy. Indeed net annual transactions halved from a peak of € 660 billion in 2007 to about € 320 billion in mid-2012 and mid-2014. Nevertheless, net annual transactions in assets have remained positive through the crisis. This means that households continue to provide a significant amount of financial resources to the rest of the economy (at a path of € 320 billion a year or about 3.5 per cent of euro area GDP).

[40] See, for instance, Bershidsky (2015) and House of Commons (2015).
[41] Net transactions correspond to the difference between increases and decreases in transactions.
[42] Transactions on governments' liabilities are discussed in Section 5 as far as they are mainly constituted by bonds.

In terms of particular instruments (Chart 20, left-hand panel), with the outbreak of the crisis, households have 'liquidated' some of their investment products; this is particularly reflected on the series on 'currency and deposits', 'insurance, pensions and standardized guarantee schemes' and 'investment fund shares'. Indeed, the evolution of the series on currency and deposits somehow mirrors the evolution of the other two series indicating that households may have converted some of their holdings into cash (currency and deposits). The liquidation of investment fund shares reversed only since 2013. On the other hand, while the contributions to insurance, pensions and standardized guarantee schemes have remained positive for the household sector as a whole, it seems that many individual households have withdrawn some of these savings and converted them to cash or, at least, reduce their new contributions in the moments of higher financial turmoil (e.g. around 2008-2009 and in 2012).

Chart 20: **Dynamics in households' balance sheet**, net annual transactions (flows), euro area, € billion



Notes: 'Ins & pens': insurance, pensions and standardized guarantee schemes.
Source: ECB, Eurostat and own calculations.

In this context, the series on bonds (probably mainly sovereign bonds) seems to play a similar role to currency and cash and seems to be seen as a safe investment in moments of financial turmoil (flight to safety effect). Indeed, households hoarded bonds around 2008 and 2011 and sold them during the recovery of 2010 and following the improvement in economic conditions observed since early 2013; at the same time, the series on bonds mirrors the evolution of other investment products (e.g. insurance, pensions and standardized guarantee schemes), which are perceived as more profitable but also riskier.

The importance of these swings in net transactions stands out when they are compared against total volumes in the balance sheets of households (see Chart 11). While the volume of insurance, pensions and standardised guarantee schemes (€ 6 600 billion) are almost six times larger than the holdings of bonds (€ 1 100 billion), net transactions in both series are of the same order of magnitude (e.g. around € 100 billion an year around early 2012). Although this cannot be considered as a panic, it provides an indication of the mobility of financial products and their potential volatility.

Net transactions in 'other equity' have historically been small despite the fact that holdings of equity are one of the main assets of households (€ 4 200 billion or 20 per cent of total assets). This is consistent with the permanent nature of equity. On the other hand, equity is the main source of financing for the majority of firms (see Section 3.3). The increase of net transactions in unquoted equity observed throughout the crisis can be explained as a mean for households to provide financing to their family business when they were confronted with increasing constrains to obtain funding through other means (see below the discussion about NFCs' liabilities). Similarly, households have supported the financing of firms through the purchase of quoted shares throughout 2008-2010 but this trend faded out thereafter.

Turning to the sources of funding used by households as reflected in their financial liabilities (Chart 20, right-hand panel), the financial crisis has triggered a collapse in the access of households to fresh new financing: financial liabilities dropped from a peak of almost € 500 billion net annual transactions in 2007 to zero or even negative net annual transactions[43] from early 2012 onwards. In the initial phases of the crisis, the collapse in bank loans was partly mitigated by the recourse to other types of loans (e.g. loans from family and friends or loans granted by companies); however, they represented only a temporary solution. Since early 2013, the net

[43] Negative net annual transactions indicate that redemptions are larger than gross new funding.

financing obtained by households has been negative. Besides potential problems in lenders, the limited capacity of some households to access additional sources of financing can be connected with their level of indebtedness and the issue of debt overhang[44]. Price dynamics such as the drop in real estate in a number of countries may also be playing a role.

'Fresh' funding provided and used by non-financial corporations

Net annual transactions for firms are markedly driven by the economic cycle. In terms of net annual transactions, the 2007 boom was of a similar size than the one observed before the bust of the dot com bubble; however, the recovery of 2010 was much milder (see Chart 9). The positive economic developments observed since early 2013 have not translated into an expansion of firms' net annual transaction yet.

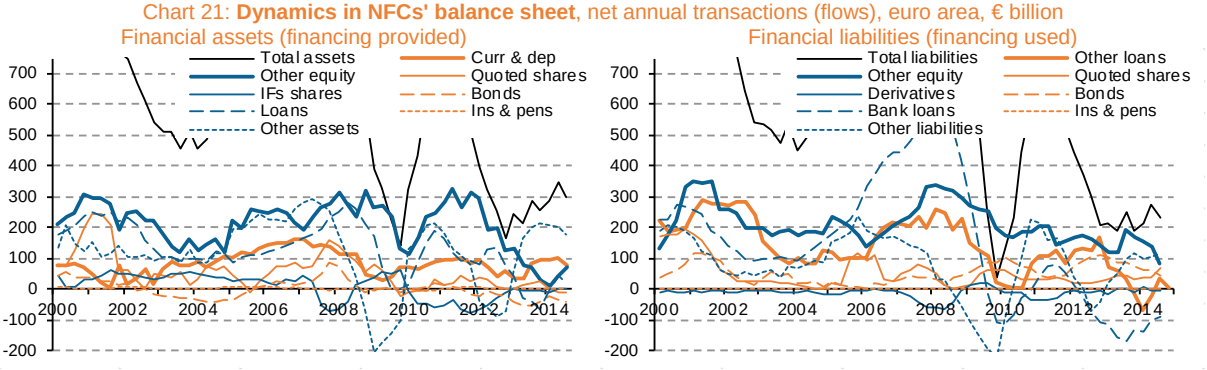
Some specific features can be deduced from the evolution of financial assets components (Chart 21, left-hand panel). The series for holdings of bonds and holdings of investment funds series present similar features to the ones of households. In 2008, a flight to security from investment funds to bonds is observed. Thereafter, NFCs seem to have divested their holdings (i.e. assets) in both investment funds and bonds to obtain funding and liquidity. In the period 2004-2007, data show an increasing accumulation of currency and deposits, which may have gone well beyond the needs for transactional purposes. A temporary placement of this excess cash on liquid assets may explain the increasing purchase of quoted shares observed between 2006 and 2008 and the subsequent decline when the inflows of currency and deposits decreased.

The series on 'other assets' is composed mainly of trade credit and advances provided, which are close linked with the turnover of the company and, therefore, the economic cycle. This series provides also an indication of the extent of the boom of the second half of the 2000s and of the impact of the recession. Indeed, the series of net transactions of 'other assets' increased threefold from € 100 billion a year in the mid-2004 to over € 300 billion a year in mid-2007. Thereafter, it collapsed to minus € 200 billion a year by early 2009. Thereafter, the series track the short recovery of 2010 and the second dip of 2012. Despite the positive macroeconomic indicators observed since late 2012, the series on 'other assets' seem to be losing traction in the last few quarters.

The accumulation of buffers during the boom may also explain the expansion in the loans granted by firms to other economic agents (e.g. payment facilities for customers) observed around 2008. This may have been offered as an alternative to trade credit and is consistent with the shift from bank loans to other loans observed in households' liabilities (see Chart 20, right-hand panel) and with the increase in the net transaction of other loans in the liabilities side of non-financial corporations (see Chart 21, right-hand panel).

The highest value for net annual transactions is observed in the series for equity other than quoted shares. This corresponds mainly to the earnings retained by subsidiaries firms had invested in (recall that the largest financial liability of NFCs is indeed equity other than quoted shares, see Chart 11). This interpretation explains also the decline in 2009 and the recovery of 2011, which follows the business cycle. The collapse in net annual transactions for equity other than quoted shares observed since late 2012 seems to indicate a rather weak outlook.

Chart 21: **Dynamics in NFCs' balance sheet**, net annual transactions (flows), euro area, € billion



Notes: 'Ins & pens': insurance, pension and standardized guarantee schemes.

[44] See Chapter 3 for further details.

Source: ECB, Eurostat and own calculations.

Turning to financial liabilities, although the peak of 2001 was similar in size to the one of 2008, a significant shift in the funding mix is patent (Chart 21, right-hand panel). The evolution of overall firms' liabilities seems to be driven, to a large extent, by the activity in bank loans, particularly after 2005. Indeed, an extraordinary expansion in flows of bank loans is observed from about € 100 billion a year in the mid-2000 to almost € 600 billion a year in 2008. During this period, bank loans provided up to 50 per cent of the fresh new financing obtained by non-financial corporations, in spite the fact that bank loans represent only 16 per cent of the NFCs' outstanding liabilities (see Charts 13 and 19). After 2005, flows of bank loans decoupled from the rest of NFCs' balance sheet.

These dynamics seem to indicate that banks played a much more prominent role from the supply side in building the bubble (e.g. by offering loans based on an insufficient credit quality assessment) than firms from the demand side (i.e. historical transactions and data on volume indicate that firms do not necessarily needed to concentrate their funding on bank loans). Moreover, the analysis of NFCs' assets reveals that firms had accumulated cash buffers and, therefore, they did not really need large amounts of credit to finance their normal activities. Therefore, this unprecedented expansion in loans seems to be connected with an excessive easing in the lending standards required by banks to highly risky firms and projects. This interpretation is further reinforced by the subsequent (negative) evolution of transactions on bank loans: the recovery of 2011 was both short and limited in terms of amount; and, thereafter, transactions in bank loans have remained largely negative. An excessive supply of low-quality high-risk lending by credit institutions is consistent with the numerous voices asking for the need of balance sheet repair in the banking sector (e.g. by the EBA, the IMF and the ECB).[45]

Various alternative sources of finance were mobilised to compensate for the decline in bank loans including bonds, quoted shares, other equity and loans other than bank loans. The issuance of bonds has been particularly significant. With a cumulative net issuance of over € 400 billion between 2008 and 2014, non-financial corporations almost doubled their use of bonds as a source of funding from about € 630 billion to over € 1,050 billion (see Section 5.1 for further details). Moreover, listed companies issued significant amount of quoted shares throughout the crisis. However, the main support for financing firms' activities was a continuous inflow of equity other than quoted shares (mainly via retained earnings, but also through injections of fresh new capital). Having said that, a continuous decline in flows of equity other than shares is observed since 2008, probably reflecting an erosion in earnings due to the protracted crisis.

As it has been seen from the assets side, trade credit and other accounts payable (i.e. the series 'other liabilities') are highly influenced by the business cycle. Having said that, a decline in the series is observed already starting in 2006, much earlier than in the corresponding series in assets. This could be interpreted as a signal of a deteriorating outlook and increasing difficulties to obtained financing by some firms, even if this was initially concealed under easy and cheap access to bank credit[46]. A nascent recovery in this series can be observed since late 2013.

Finally, the series on loans other than bank borrowing are also significant. These loans were an important source of funding during the initial wave of the crisis (in 2008 and 2009) but they declined in 2010, although flows never became negative. Subsequently, firms recovered their recourse to this type of loans, which turned to be, jointly with retained earnings, the main source of fresh financing for firms during the second dip of 2012. However, a significant deterioration in the availability of such loans is observed since early 2013.

Box B. Comparisons with the US

Funding structure

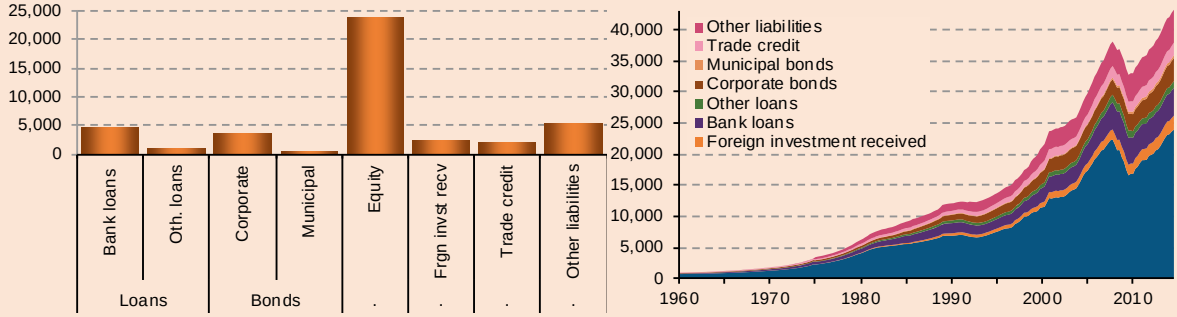
With a balance sheet of $43 200 billion, US firms have a total size representing 250 per cent of GDP, larger, in relative terms, than the one of the euro area (which is below 200 per cent of GDP). American companies finance up to 55 per cent of their

[45] See, for instance, Jassaud and Hesse (2013), IMF (2013), Van den End and de Haan (2014), Praet (2014), ECB (2014) or Enria (2013).
[46] One should be aware of the ambivalence of trade credit and other advances. An expansion in such sources of financing may be generated by an increase in activities, but liquidity and solvency problems are also translated into increasing (non-performing) debts to suppliers and stakeholders in general (e.g. late payment of salaries).

activities with own resource, slightly above the 50 per cent of own resources used by their European peers. US firms use a range of other funding sources: bank loans, trade credit, corporate bonds, tax claims, etc. However, the largest source of funding after equity is 'miscellaneous liabilities' for which no further split is available[47].

The combined recourse of firms to the financial sector in the form of bank borrowing and the issuance of bonds represents about 20 per cent of liabilities on both size of the Atlantic. However, US firms recourse more to the issuance of bonds (9 per cent of their liabilities) than European firms (4 per cent) and less to bank loans (10 per cent) than EU firms (15 per cent). These differences seem to be explained by strong historical regulatory restrictions imposed on the activities of American banks. In particular, the Glass-Steagall Act, which imposed the separation of commercial and investment banking; the 'Regulation Q', which imposed interest rate caps on bank deposits; and state restrictions, as the operations of commercial banks were confined to their home states[48].

Chart B3: **Sources of funding used by nonfinancial businesses**, US, outstanding volumes, € billion
2014 Q3 Evolution



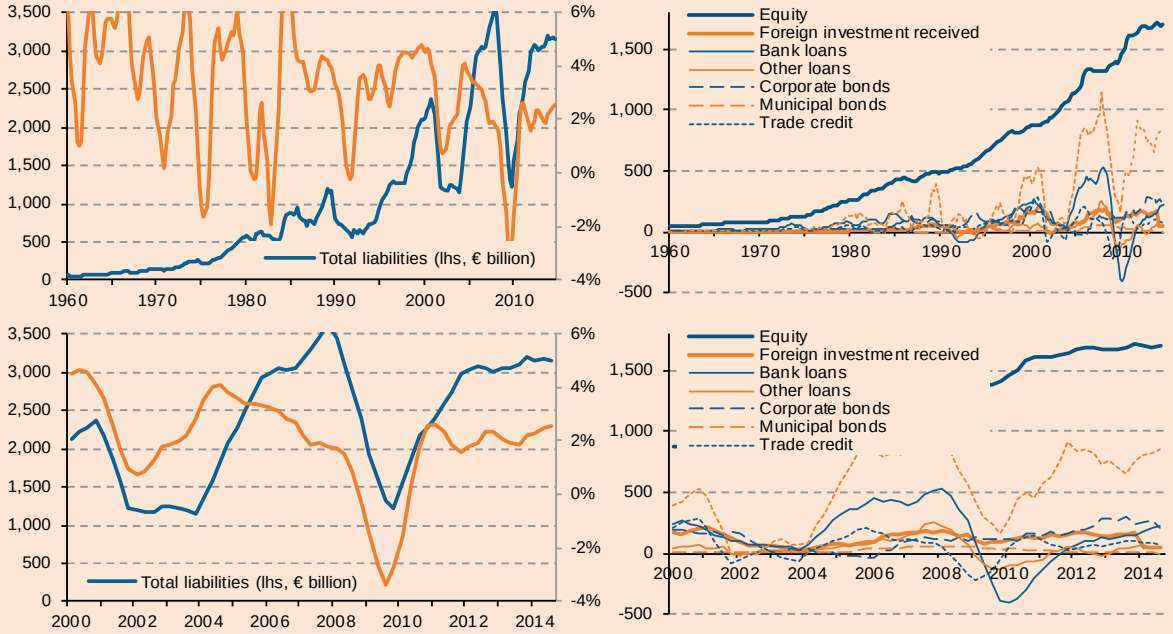
Notes: Data converted to Euro applying the December 2014 exchange rate. Municipal bonds include also municipal loans. Corporate bonds include also commercial paper.
Source: ECB, Federal Reserve and own calculations.

Nevertheless, banks are also very active in financial markets. For instance, while there are about 20 public stock exchanges in the US[49], there are also over 50 'dark pools'[50], which trade securities under opaque rules. US banks control over 70 per cent of the trade of securities[51], not least because most dark pools are located within the large US investment banks. The SEC (2009) proposed to increase the transparency of dark pools; however, they are still somehow been used to exploit some investors, sometimes in combination with some high frequency traders' (HFTs) strategies[52]. In other words, although the American economy seems to have better recovered from the financial crisis than the euro area, one should recall that the large size of financial markets and of shadow banking played a significant role in the great recession of 2008-2009 and, therefore, the American financial structure is not necessarily more stable than the one used by European firms[53].

While there may be some room for rebalancing the weigh between the use of bank loans and bond markets in Europe, the wider picture should not be neglected. In the quest for resolving the funding problems observed in Europe, public authorities and academics should devote some energy to think if the crisis has led to problems on the 'additional' 80 per cent of sources of funding (e.g. has the deterioration in confidence eroded the ability of firms to use trade credit?, are suppliers asking for advanced or immediate payment on delivery?) and, even if problems are not significant, to think about potential ways to boost these other sources of funding. In this context, the take-off of equity flows seems to be an important factor driving the recovery in the US (Chart B4, right-hand panels) and marking the difference with European firms, where equity flows stagnated (Chart 21, right-hand panel).

[47] This category includes asset-based lending such as factoring, which is more widely used in the US than in Europe (see Section 4.4.3).
[48] For further details see Zarutskie, R. (2013), Anderson et al. (2015) or Calomiris and Haber (2014).
[49] See SEC "Exchanges": http://www.sec.gov/divisions/marketreg/mrexchanges.shtml.
[50] See http://en.wikipedia.org/wiki/Dark_liquidity.
[51] See Lewis (2014).
[52] See, for instance the fraud lawsuit filed by New York's Attorney General against Barclays bank (New York Telegraph, 2014). For further discussion about high frequency trading, see last year's review (European Commission, 2014), Chapter 4.
[53] For further discussion, see Wolf (2014).

Chart B4: **Dynamics in non-financial businesses' liabilities**, net annual transactions (flows), US, € billion



Notes: Data converted to Euro applying the December 2014 exchange rate. Municipal bonds include also municipal loans. Corporate bonds include also commercial paper.
Source: ECB, Federal Reserve and own calculations.

Evolution

The expansionary phase is observed in the US in 2004-2006, a bit earlier than in Europe and with lower growth (an average growth 11 per cent a year in the US compare with 13 in Europe). However, the balance sheet of American firms continuously expanded from late 2010 onwards (without a second dip) and at higher rates than in Europe (6 per cent average annual expansion of total liabilities for American firms compared to 4.5 per cent for euro area ones; see also Chart 9).

The balance sheet of American firms seems to be even more pro-cyclical than in the case of European firms and with a wider volatility (Chart B4, left-hand panels). However, sustained equity inflows (originated mainly on retained earnings) in US firms avoided that the trough of total liabilities of 2008-2009 would be deeper than the one of 2000 (as it was the case in Europe, see Chart 9) and a second dip. Differences in demographic dynamics between the US and the EU may be behind the different developments observed in equity flows[54].

Besides the continuous expansion of equity, flows of 'other liabilities' are also very significant and with a highly cyclical behaviour. Similarly to the euro area, bank loans have played a significant role in the boom leading to the recent financial crisis and the subsequent bust. However, contrarily to Europe, American banks started to provide new fresh credit to firms from 2011 onwards.

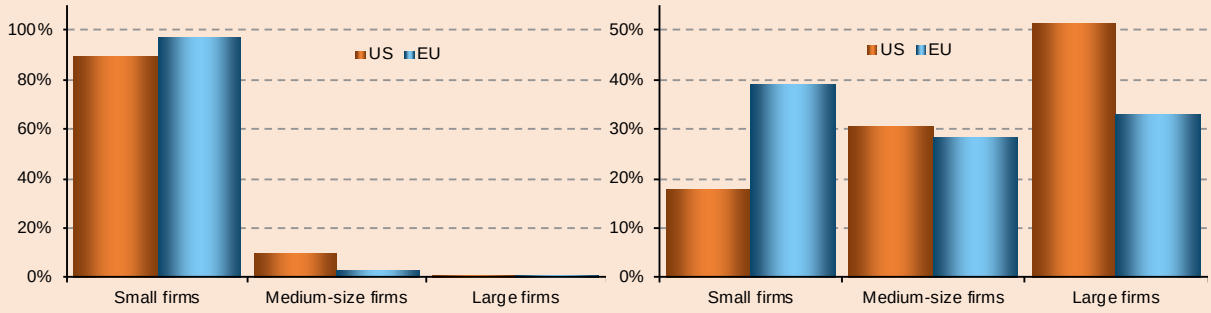
Similarly to Europe, the evolution of trade credit, advances and other liabilities for American firms shows a highly pro-cyclicality pattern; moreover, increasing issuance of bonds have been used, both in the US and in Europe, to compensate for negative net transactions from other sources of funding.

Business structure

In terms of the size of firms, the corporate sector in the EU has a very different structure from the corporate sector in the US. While the relative number of large companies is very similar in both the US and the EU (0.2 per cent and 0.3 per cent, respectively), this is not the case for the average size of the companies. Large companies in the US are really large. Indeed, in the US, over 50 per cent of the employment is generated by large companies with 500 or more employees; while, in the EU, large companies with 250 or more employees generate only about 30 per cent of the employment. On the other hand, small firms of less than 20 employees provide employment to less than 20 per cent of the population in the US but to almost 40 per cent of the population in the EU (Chart B5).

[54] For further details about demographic dynamics, see Chapter 4 and Piketty (2014).

Chart B5: **Structure of the corporate sector**, percentage with respect to the total of the US and of the EU



Notes: In the EU, holding companies are not included. Companies are classified differently in the US and the EU.
For the US, *'Small firms'* = up to 19 employees; *'Medium-size firms'* = between 20 and 499 employees; *'Large firms'* = Equal or larger than 500 employees.
For the EU, *'Small firms'* = up to 19 employees; *'Medium-size firms'* = between 20 and 249 employees; *'Large firms'* = Equal or larger than 250 employees.
Source: Eurostat, United States Census Bureau and own calculations.

In over 60 years of integration, Europe has largely developed a single market across the EU and the EEA. However, two important structural features linked to different traditions distinguish Europe from the US. On the one hand, the diversity of languages in the EU provides an important value in terms of diversity and culture, but it may also hamper the expansion of firms, particularly across (linguistic) borders. On the other hand, the organisation of urban areas, and thus of societies, is very different in the two sides of the Atlantic. The US had much more flexibility in the urban development that followed the industrial revolutions of the 19th and 20th centuries while land planning in Europe had to accommodate to cities with centuries of years of history. For instance, open pedestrian shopping streets constitute an idiosyncratic characteristic of most EU cities and towns while Americans shop in malls accessible only by car.

Those structural differences had allowed US companies to grow in size faster than EU peers. These structural differences in the size of firms combined with the historical restrictions in the activities of banks may explain, to a large extent, the slightly larger recourse to the issuance of bonds in the US (9 per cent of NFCs liabilities) than in the EU (5 per cent of NFCs liabilities). However, note that, while a few thousands of companies issue bonds in the market, the bulk of firms (25 million firms in the EU and 5.7 million firms in the US) do not use capital markets to finance their activities.