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The euro area post-crisis financial system in perspective (1999-2018)

How has the euro area financial system changed since the 2007-08 financial crisis? Has it become more resilient or more fragile? This article provides an overview of the main changes since 2007 and puts them in perspective. In particular, it considers the role played by an atypical non-bank financial sector player – captive financial institutions – and through them, non-financial corporations (NFCs). NFCs' optimisation and internationalisation strategies could have had a decisive influence in the development of the financial sector. By contrast, traditional banks have only played a secondary role in this development.

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JEL codes:
E01, G20,
G30

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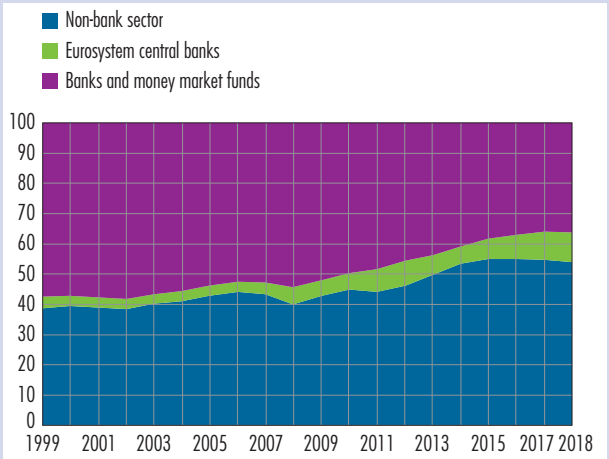
+EUR 25,020 billion
the increase in euro area financial sector assets in 10 years

+14 percentage points
the increase in the non-bank sector's share in the financial system since 2008

50%
the share of other financial intermediaries and financial auxiliaries, captive financial institutions and money lenders in the non-bank sector

77%
the concentration of non-bank sector assets in three countries: Luxembourg, the Netherlands and Ireland

Structure of the euro area financial sector
(as a % of total financial sector assets)



Source: European Central Bank, Quarterly Sector Accounts and Balance Sheet Items for Eurosystem assets (see the appendix for the methodological differences between these two databases).

1 The euro area financial sector experienced robust and continued growth after the 2007-08 financial crisis

Euro area financial sector assets[1] continued to grow at a steady pace following the global financial crisis, particularly until 2016. The 2009-18 period saw an annual average increase of 4%, although this represented a slowdown compared with the 8% per-year average from 1999 to 2008.[2]

At the end of 2018, assets held by the euro area financial sector amounted to EUR 78,656 billion, or the equivalent of 680% of euro area GDP,[3] compared with 556% of GDP in 2008 (see Table 1 and Box 1). This ratio stood at 406% in 1999.

The development of the financial sector is not unique to the euro area, and its expansion falls between the situation reported in Japan (whose financial sector developed more rapidly in points of GDP) and that of the United States (where development was slower). For example, Japanese financial sector assets as a percentage of GDP increased from 583% at the end of 1999 to 735% at the end of 2017 (with a dip at the end of 2008 to 552%). During the same period in the United States, financial sector assets increased from 394% of GDP at the end of 1999 to 468% at the end of 2008 and 509% at the end of 2017.[4]

T1 Euro area financial sector assets

(EUR billions and as a % of GDP)

	1999	2008	2018
Central banks (Eurosystem)[a) b)]	1,013.7	2,982.9	7,774.7
	15%	31%	67%
Credit institutions and other deposit-taking corporations, money market funds[b)]	15,582.4	29,221.4	28,623.4
	234%	303%	248%
Non-MMF investment funds	2,831.2	4,067.3	11,206.8
	42%	42%	97%
Other financial intermediaries, captive financial institutions, money lenders, financial auxiliaries	3,776.9	11,180.2	21,034.2
	57%	116%	182%
Insurance corporations	3,209.3	5,018.4	7,545.3
	48%	52%	65%
Pension funds	639.8	1,166.1	2,471.5
	10%	12%	21%
Financial sector total	27,053.4	53,636.3	78,655.9
	406%	556%	680%

a) The Eurosystem includes the European Central Bank and the central banks of the euro area Member States.
b) Central bank assets are extracted directly from the Balance Sheet Items (BSI) database. The assets of credit institutions and other deposit-taking corporations and money market funds are obtained by calculating the difference between sector S12K assets, extracted from the Quarterly Sector Accounts (QSA) database, and central bank assets taken from the BSI database.
Source: European Central Bank, BSI and QSA databases.

1 The outstanding amounts of financial sector assets, which correspond to the assets held by the financial sector. It should also be noted that "financial sector" and "financial system" are used interchangeably in this bulletin.

2 This study is based on data available on 28 October 2019.

3 See Appendix 1 for information on the indicators used to measure the development of the financial sector and their limitations.

4 Source: OECD, Financial balance sheets – non consolidated – SNA 2008.

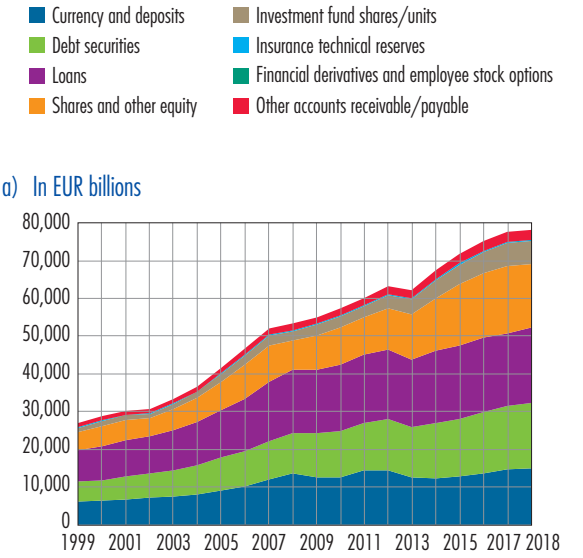
BOX 1

Evolution and breakdown of euro area financial sector assets

The financial account data compiled by the central banks under the aegis of the European Central Bank (ECB) can be used to track changes in the euro area financial sector since 1999 and to put the transformations seen before and after the global financial crisis into perspective.

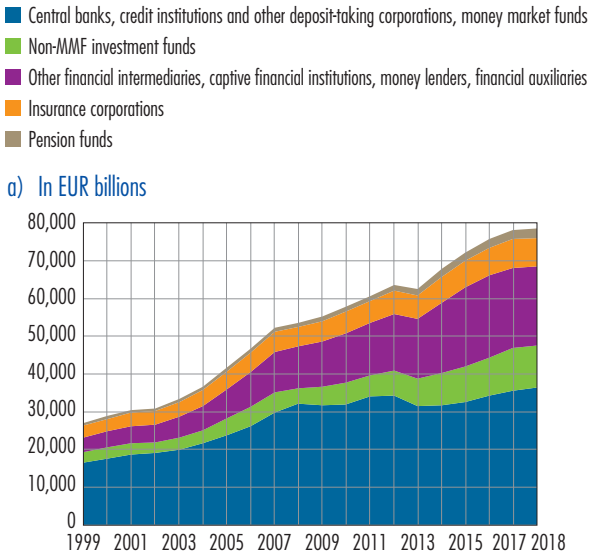
Thanks to these data, changes in financial assets can be broken down by instrument type and holding sector. This breakdown is shown in the charts below, in EUR billions and as a percentage of GDP, from the creation of the euro area to the end of 2018.

Ca Breakdown by instrument of euro area financial sector assets



Source: European Central Bank, Quarterly Sector Accounts.
Note: Not including monetary gold and special drawing rights.

Cb Breakdown by sub-sector of euro area financial sector assets



Source: European Central Bank, Quarterly Sector Accounts.

2 The non-bank financial sector, a key player in the euro area financial sector

The share of the banking sector has fallen sharply

Within the financial sector, the relative share of the banking sector (investment funds, including money market funds – MMFs), which had decreased slightly before 2007, has fallen sharply since the global financial crisis (see Chart 1).[5] This is illustrated by the fact that since 2012, annual banking sector financial transactions[6] (including MMFs) have been less than or equal to 5% of GDP, compared with close to 40% of GDP in 2007 and 20% or more from 2004 to 2006 (see Chart 2 below). This decline can be linked to the reduction in interbank market activity with non-resident counterparties, and post-crisis regulations that led banks to ring-fence and limit their own-portfolio securities trading.

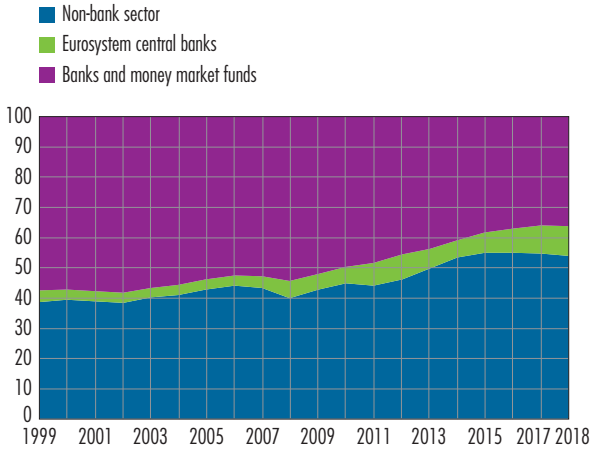
The increase in central banks' balance sheets remained relatively contained

Central banks' active use of their balance sheets and the resulting increase in balance sheet size[7] prompted fears of excessive growth. However, when put in perspective with the development of the financial sector as a whole, the increase in size of the Eurosystem balance sheet seems relatively secondary in importance, accounting for less than 10% of total assets in 2018.[8] The increase – of 36 percentage points of GDP, compared with growth of 124 percentage points for financial system players as a whole (see Table 1, above) – reflects a process of central banks substituting the faltering money market in the years immediately after the crisis. Prior to the US financial crisis (2007) and then the euro area sovereign debt crisis (2011), banks redistributed liquidity surpluses and deficits between themselves on a daily basis through the interbank market. In the aftermath of the crisis, particularly immediately afterwards, banks with a surplus generally deposited their liquidity with euro area central banks, effectively closing the interbank market to many banks suffering liquidity shortages. These transactions resulted in an increase in the size of the central bank's balance sheet. It is important to note that the Eurosystem's provision of liquidity is not a form of recapitalisation or bulk subsidy to banks as it is repayable at maturity: it should be seen as an internalisation of the money market through the central bank's balance sheet.

The share of the non-bank financial sector has risen sharply since 2007

Ultimately, the main driver of growth in financial sector assets since 2007 has been the non-bank financial sector, which now accounts for the majority of financial sector assets.

C1 Structure of the euro area financial sector
(as a % of total financial sector assets)



Source: European Central Bank, Quarterly Sector Accounts and Balance Sheet Items for Eurosystem assets (see the appendix for the methodological differences between these two databases).

5 The decline in the relative share of banks and money market funds in the financial sector does not imply a reduction in the outstanding assets of the sector.

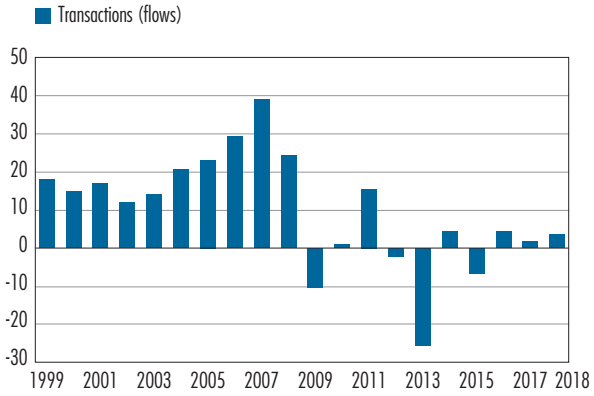
6 In the national accounts, transactions are extrapolated from the difference between total balance sheet assets at the beginning and at the end of a period, adjusted for the effects of revaluations and changes to the accounting methods.

7 See for example: "Why central bank balance sheets matter" (2012), J. Caruana, Bank for International Settlements; and "The Federal Reserve's Balance Sheet as a Financial Stability Tool" (2016), Greenwood, Hanson and Stein.

8 The assets of the Bank of Japan amounted to around 14% of total Japanese financial sector assets at end-2017 (up around 9 percentage points compared with end-2007) while the assets of the US Federal Reserve (Fed) accounted for around 5% of US financial sector assets at end-2017 (up around 4 percentage points compared with end-2007).

C2 Financial transactions on assets in the euro area banking sector since 1999

(as a % of GDP)



Scope: The banking sector includes credit institutions and other deposit-taking corporations and money market funds.
Source: European Central Bank, Balance Sheet Items.

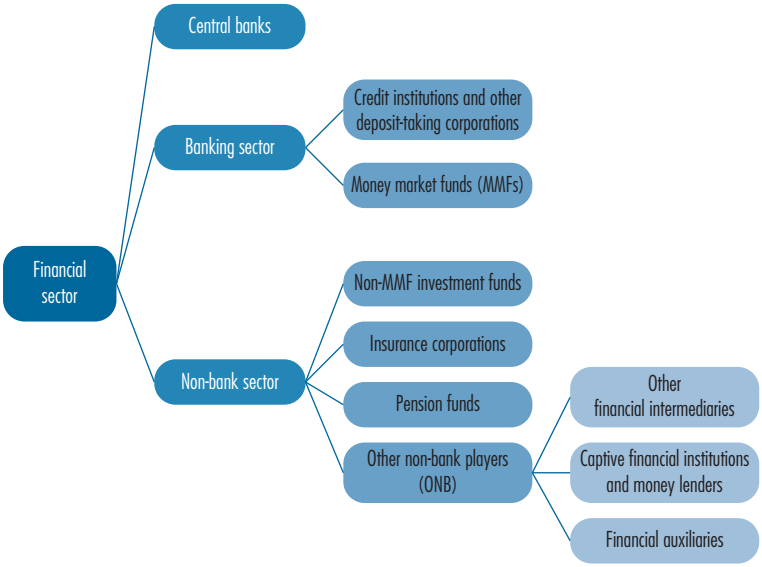
"Other non-bank players" (ONB) dominate the non-bank sector

The euro area non-bank financial sector is made up of several entities and sub-sectors: non-MMF investment funds, other financial intermediaries, captive financial institutions and money lenders, financial auxiliaries, insurance corporations and pension funds (see diagram and Appendix 2).

However, the data available in the harmonised European statistics do not distinguish between the assets of other financial intermediaries and those of captive financial institutions and money lenders or of financial auxiliaries: only aggregate data for these three sectors are published by all euro area Member States[9] and by the European Central Bank. For ease of reference, these three aggregated sectors are hereinafter referred to as the **other non-bank player (ONB) sector.**

The non-bank financial sector is dominated by ONBs, followed by non-MMF investment funds. The ONB sector's relative share of the non-bank financial sector has remained quite stable since 2007 at around 50%, while the relative share of non-MMF investment funds, which had declined prior to the financial crisis from 27% to 24%, returned to its pre-crisis level. Furthermore, the relative asset share of insurance corporations dropped from 31% in 1999 to 18% in 2018, while that of pension funds remained relatively stable at between 5% and 6% (see Chart 3). The relative erosion of the share of insurance corporations is part of a long-term trend that

Diagram Structure of the euro area financial system

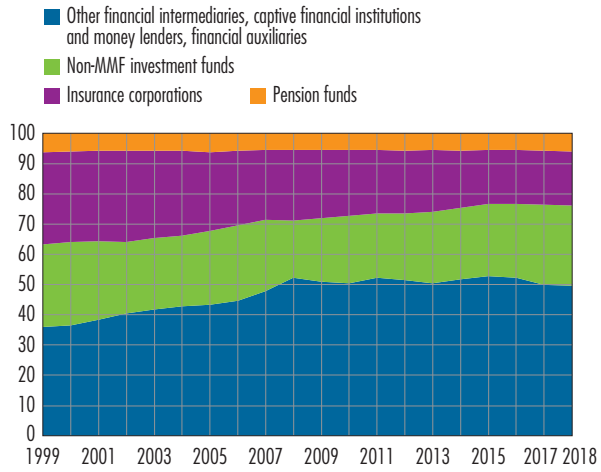


Source: Banque de France.

9 Except for a few Member States and in certain cases outside the framework of the national accounts (as consistency with other figures in the national accounts is not yet fully guaranteed).

C3 Sectoral breakdown of euro area non-bank financial sector assets (excluding money market funds)

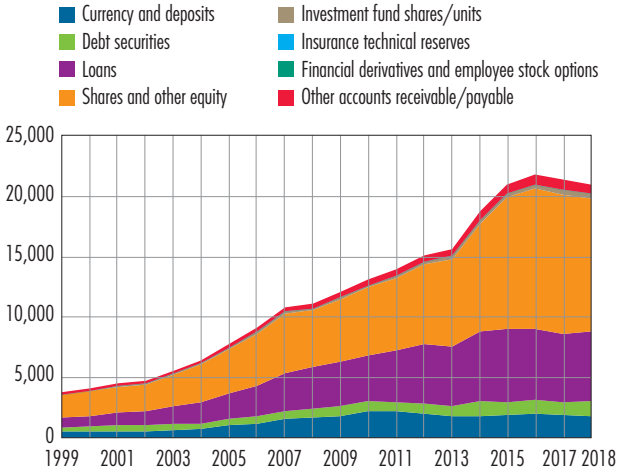
(as a % of total assets)



Source: European Central Bank, Quarterly Sector Accounts.

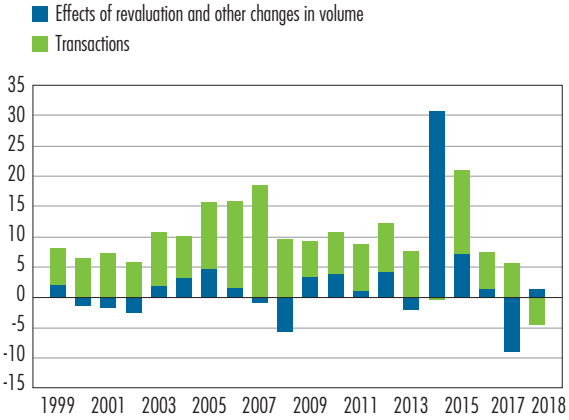
C4 Other non-bank player (ONB) sector assets in the euro area

a) Breakdown by instrument since 1999



b) Financial flows on assets since 1999

(as a % of GDP)



Source: European Central Bank, Quarterly Sector Accounts.

can be seen since 1999, although this is not the case in France given the growth in life insurance. In countries where life insurance is not practised, this growth can be seen in the asset management industry, classified in the non-MMF investment fund sector.

ONB sector assets increased on average by 7% per year during the 2009-18 period. Although this is a sustained growth rate, it represents a slowdown in comparison to the average 13% annual increase from 1999 to 2008. ONB sector assets amounted to EUR 21,034 billion in 2018 (182% of GDP) compared with EUR 3,777 billion in 1999 (see Chart 4a). The financial transactions carried out by the ONB sector continued apace after the crisis until 2017, peaking in 2015 close to the levels observed before the global financial crisis (14% of GDP, see Chart 4b).[10]

ONB growth is mainly concentrated in Luxembourg, the Netherlands and Ireland

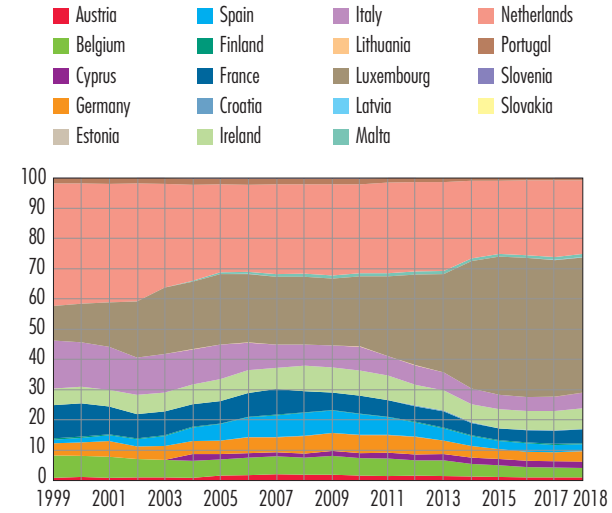
Luxembourg, the Netherlands and Ireland account for around 76% of total ONB sector assets at the euro area level (see Charts 5a and 5b). Furthermore, the increase in the financial assets of the Luxembourg and Netherlands ONB sector since 2007 corresponds to 44% of the total

10 The improvement during 2014 of the coverage of Luxembourg's accounts with a more precise method for the collection of captive financial institutions and non-institutional lender sector data, partly explains the elevated "non-transaction" flow observed during that year and the significant increase in assets between 2014 and 2015.

C5 Other non-bank player (ONB) sector assets in the euro area by country

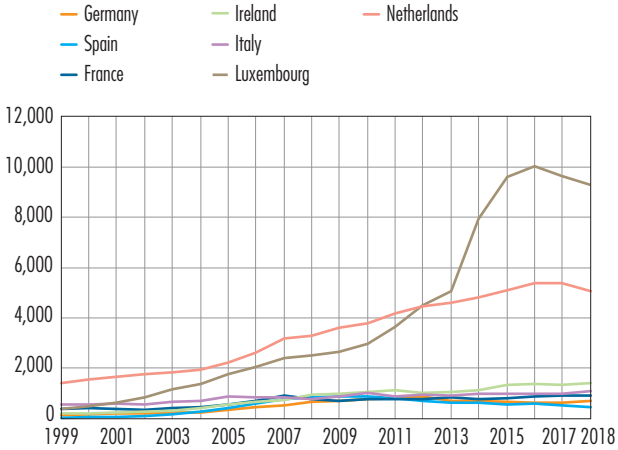
a) Breakdown by country of total assets since 1999

(%)



b) Total assets of the main euro area countries

(EUR billions)



Source: European Central Bank, Quarterly Sector Accounts.

growth in euro area non-bank financial sector outstanding assets (excluding money market funds).

Does the development of the ONB sector reflect an increasingly complex and internationalised organisation of non-financial corporations?

The significance and growth of the non-bank financial sector may be partly explained by the development of optimisation strategies by non-financial corporations, which, for economic, legal and/or tax reasons,[11] have decided to create one or more holding or captive companies in Luxembourg, the Netherlands or Ireland. Although these companies are created and owned by non-financial corporations (NFCs), they are deemed to be captive financial institutions and as such are reported within the financial sector in the national accounts (see Box 2 and Appendix 2), and more specifically, within the ONB sector.

Under this assumption, part of the growth of the non-bank financial sector reflects the increase in financial transactions between subsidiaries and parent companies within the same group, resulting from NFCs' increasingly complex and internationalised structure involving captive companies. In this context, the decline in financial assets observed in Luxembourg and the Netherlands at the end of the period could be explained by recent changes in tax legislation in Europe (the European Union's AntiTax Avoidance Directive (ATAD), renegotiated bilateral treaties in order to prevent treaty-shopping practices,[12] etc.) and the United States,[13] with, conversely, the previous increase reflecting a drive for tax optimisation.

11 A multinational corporation may have a variety of reasons for creating this type of company: from an economic perspective, pooling all group financial transactions (such as issuing short-term securities) in a specialised entity has several advantages as it provides access to a broader investor base; from a tax perspective, by creating this type of entity in one of the above-mentioned countries, the group can benefit from very low tax rates (see Appendix 3).

12 European Commission, "Tackling Tax Avoidance" factsheet.

13 http://www.oecd.org/investment/FDI-in-Figures-April-2019.pdf

BOX 2

Captive financial institutions

The captive financial institutions sector consists of: (i) companies that hold a level of capital that allows them to control a group of subsidiary companies and whose main function is to own that group without providing any other services (they do not administer or manage other units); and also (ii) captive companies that raise funds for use by their parent company. The entities in this sector are therefore quite unusual financial players, at the crossroads between the financial and non-financial sectors.

These players can be of three different types, depending on the sort of entity that creates them.

- Some captive financial institutions are created by the banks themselves to provide financial services connected with regulated banking business. They sit outside the regulated sphere as they neither collect deposits nor engage in lending activities on a regular basis.
- Other captive financial institutions are created by non-financial corporations (NFCs) to group one or more of their financing functions (cash pooling and placement, issuance programmes for negotiable securities, etc.).
- Lastly, a third category of captive financial institutions is created by neither banks nor NFCs, but on the initiative of financial entrepreneurs raising funds for generally specialised objectives. They are marketed to institutional investors, and include leveraged funds or private equity funds, for example.

In order to confirm or deny this hypothesis, more granular data would be needed to break down the ONB sector and thereby determine the weight of captive financial institution assets alone. And within the category of captives, a distinction should be made between entities as they are not all of the same nature (see Box 2). While these data are currently unavailable for the euro area (see above), a few countries, including Luxembourg, produce more granular, harmonised data at the national level. According to the data published by Luxembourg,[14] captive financial institutions account for around 90% of the country's ONB sector assets.[15] Furthermore, more than 80% of ONB sector assets were held by captive institutions of an NFC or group of NFCs in 2014.[16]

Thus, as the expanding balance sheets of central banks and traditional banks seem only to have played a secondary role in euro area financial sector growth since the crisis, the development of NFCs' optimisation and internationalisation strategies may, conversely, help to explain this change. Do the financial accounts of euro area NFCs support this hypothesis?

14 Available on the Eurostat website: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nasa_10_f_bs&lang=fr

15 France also publishes more granular data than the ECB. In contrast to Luxembourg, the proportion of this sub-sector's assets is relatively low in France, amounting to around 6.5% of the total assets of the other financial intermediaries, captive financial institutions, money lenders and financial auxiliaries sector.

16 http://www.bcl.lu/fr/stabilite_surveillance/CRS/Shadow-Banking_CRS-report.pdf

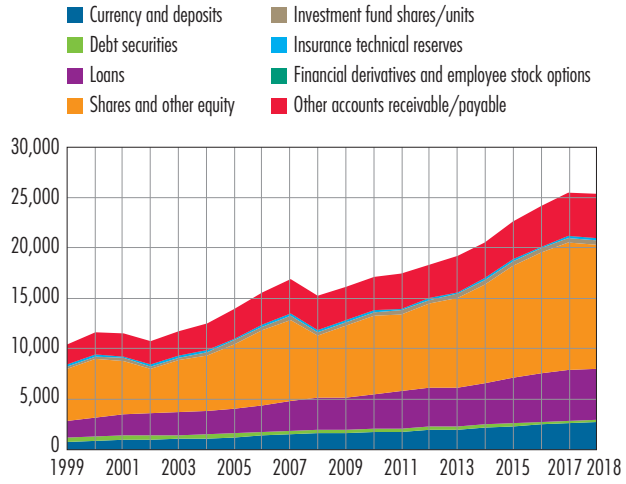
3 Non-financial corporations, agents in the expansion of the financial sphere?

Euro area financial accounts show a robust increase in NFC assets

The financial holdings of euro area NFCs increased by 5% per year on average between 1999 and 2008 and during the 2009-18 period. Outside of periods of economic and financial crisis (the 2002 internet bubble, the 2007 global financial crisis, the 2011 euro area sovereign debt crisis), non-financial corporation assets have grown continuously since 1999. They rose from the equivalent of 180% of euro area GDP in 2007 (EUR 16,942 billion) to 220% of euro area GDP in 2018 (EUR 25,425 billion, see Chart 6). This strong growth is not simply due to revaluation effects, as transaction volumes have also been high (see Chart 7).

C6 Structure of euro area non-financial corporation assets by instrument since 1999

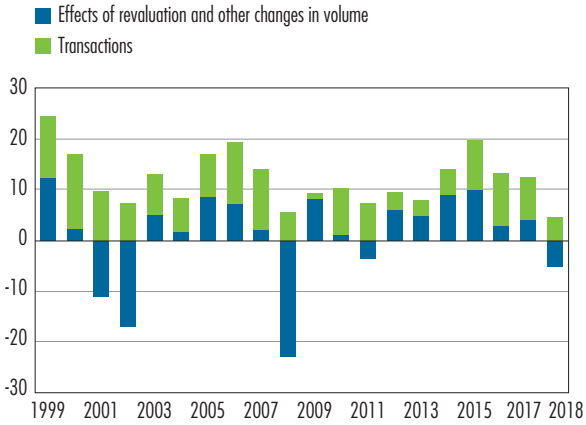
(EUR billions)



Source: European Central Bank, Quarterly Sector Accounts.

C7 Financial flows on assets of euro area non-financial corporations since 1999

(as a % of GDP)



Source: European Central Bank, Quarterly Sector Accounts.

The financial accounts suggest that NFCs are highly interconnected

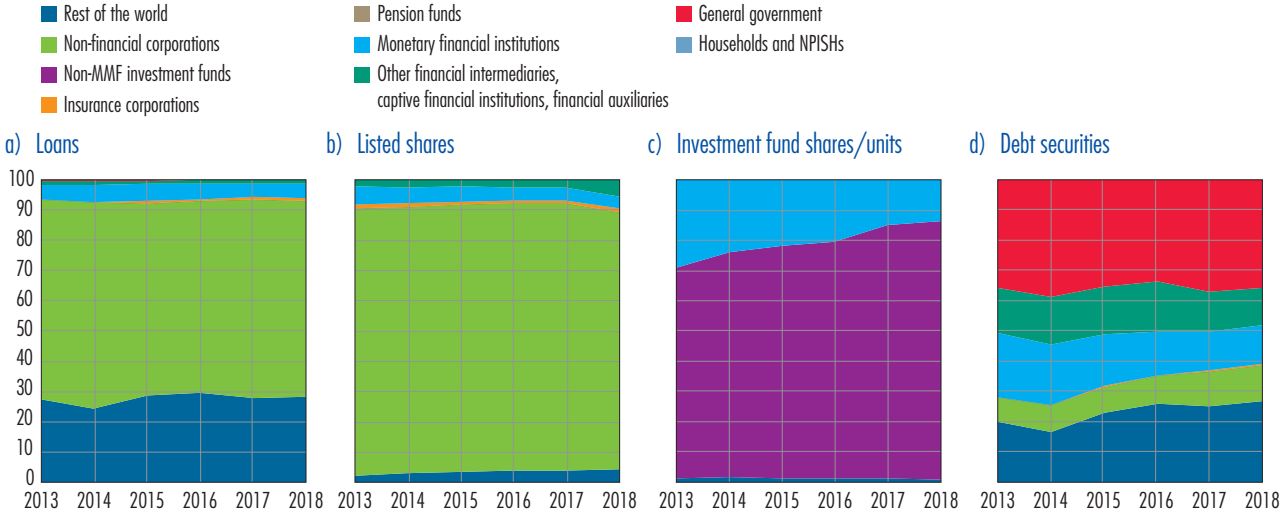
These assets are mainly made up of shares and other equity and, to a lesser extent, loans (49% and 20%, respectively, in 2018). Furthermore, loans granted by euro area NFCs are mainly extended to other NFCs in the euro area (65%) and the rest of the world (28%, see Chart 8 below). Equally, the majority of listed shares held by euro area NFCs were issued by other euro area NFCs (85%).[17] Therefore, the structure of financial assets in the euro area and its development are consistent with the hypothesis of a surge in intragroup/cross-border NFC flows in the euro area. Indeed, a parent company's ownership of a subsidiary implies a stake in the subsidiary's equity capital while different entities within the same group also transfer liquidity through the granting of loans.

Moreover, we find that the annual volume of transactions in the post-crisis period as reported in the national accounts is two times greater in the NFC sector than in the banking sector. This may reflect a more advanced

17 National account data are constantly being improved and refined. For example, "whom-to-whom" data, which shows both parties to a transaction, have been available for several years. Therefore, the assets and liabilities of NFCs (or any other agent) can be matched to the relevant institutional sector. However, the availability of these data is restricted to a few financial instruments and for certain of those instruments, the data only goes back to 2013. Thus, whom-to-whom granularity is not available for unlisted equities, which nevertheless account for most of the instruments recorded in the "shares and other equity" of euro area NFCs.

C8 Breakdown of non-financial corporation assets by type of financial instrument and issuer

(as a % of total assets of each instrument)



Key: In 2018, approximately 36% of debt security holdings of euro area non-financial corporations were issued by general government.
Source: European Central Bank, Quarterly Sector Accounts.
Note: NPISH: non-profit institutions serving households; monetary financial institutions: credit institutions and other deposit-taking corporations, money market funds and Eurosystem central banks. In 2018, loans accounted for around 20% of the total assets of non-financial corporations, and listed shares, investment fund shares/units and debt securities accounted for 6%, 2% and 1%, respectively.

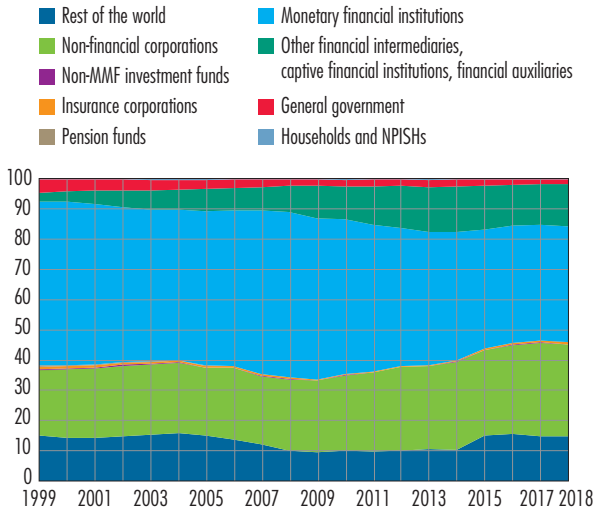
degree of internationalisation, particularly within the euro area, of NFCs compared with banks, which would lead to a higher volume of intra-group transactions.[18]

Lastly, we find that the ONB sector's share of loans granted to NFCs in the euro area has risen continuously over the last two decades (see Chart 9).

Although the data in the euro area NFC financial accounts are extensive, they do not have the detail needed to be able to carry out a more in-depth analysis beyond the elements presented above or to draw a definitive conclusion. However, these findings are consistent with the hypothesis that some of the changes in the non-bank financial sector observed since the crisis may be explained by the development of intragroup and cross-border flows involving the creation of subsidiaries and also specialised structures (captive financial institutions) that can also satisfy different grounds for optimisation.[19] Apart from tax optimisation objectives,

C9 Outstanding loan liabilities of euro area non-financial corporations, by sector holding the receivable

(as a % of outstanding loans)



Source: European Central Bank, Quarterly Sector Accounts.
Note: NPISH: non-profit institutions serving households; monetary financial institutions: credit institutions and other deposit-taking corporations, money market funds and Eurosystem central banks.

18 Another explanation may be related to the development of clearing houses to deal with foreign currency or securities transactions, which streamlines flows and pushes down overall bank transaction volumes.

19 Foreign direct investment data for euro area Member States also appears to contribute to corroborating this hypothesis (see http://sdw.ecb.europa.eu/browse.do?node=9691483). An economy's stocks of resident direct investment assets vis-à-vis non-residents include resident parent companies' equity in and lending to foreign subsidiaries, as well as resident subsidiaries' equity in and lending to foreign parent companies (see https://www.oecd.org/daf/inv/FDI-statistics-asset-liability-vs-directional-presentation.pdf; p. 2, Figure 1). These data are used to prepare the financial balance sheets of the different sectors.

this development may also be a response to bank and financial market ineffectiveness in ensuring smooth and inexpensive cross-border financing – a response that comes at the cost of heightened complexity of corporate finance functions that are not "core business" and can in itself be a source of risk.

The complexity of non-financial multinationals' cross-border management circuits entails risks

Cross-border and intragroup management of financial flows by non-financial corporations is a source of three types of risk.

• An internal **operational risk** to companies, in so much as a corporate organisation with multiple structures specialised in financing and cash management requires close supervision, which tends only to move companies closer to the standards of oversight and internal control in force in the regulated financial system.

• A **risk of greater information asymmetries** between lenders and borrowers: for a financial analyst examining the risk inherent in a bond issue, a private placement or a share issue, identifying the actual credit risk requires precise knowledge of the internal organisation, the legal rules governing the various entities and the effective scope of the guarantees given by group entities to other entities, especially when the organisation is multinational. The challenges are not new – there is a precedent in the collapse of Enron in 2001 – but the greater number of complex cross-border organisations is. This complexity can lead to a lack of clarity and the question arises as to whether the credit risk analysis capabilities – of ratings agencies, the regulated banking sector, independent financial analysts – have developed accordingly.

• A **credit risk** linked to the longer value chain of the financial function of the non-financial sector. This allows for efficiency gains in terms of access to the financial market, but at the same time makes it easier to set up leveraging arrangements. Certain studies[20] have established a relationship between the inherent complexity of "connectivity" (the proliferation of transactions related to the creation of specialised and interdependent entities) within the financial system and the cost of crises. Thus, while the relative decline in banking transactions observed in this study reflects a certain simplification in terms of connectivity, this may be offset by greater connectivity within the non-financial sector.

20 "The price of complexity in financial networks" (2016), Battiston, Caldarelli, May, Roukny and Stiglitz, *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 113, No. 36, September, https://www.pnas.org/content/pnas/113/36/10031.full.pdf

Appendix 1
Methodology and definitions

This study is based on an analysis of European national account data. National accounts seek to estimate the financial wealth of all economic players – both the assets they hold, and their liabilities.

Financial wealth at a point in time corresponds to a stock (holdings of assets and liabilities), while a change in this financial wealth from one point in time to another corresponds to a flow. If X is a stock and x is the corresponding flow, between dates t - 1 and t: X(t) = X(t - 1) + x(t), where x(t) is the flow during period t (which consequently runs from t - 1 to t). However, in reality, x(t) is the sum of three components: (i) the change in the stock due to revaluation effects (for example, when the price of an asset fluctuates while its volume remains constant); (ii) the change due to new transaction volumes (at constant prices); and (iii) variations related to changes in method, classification or scope.

The European Central Bank (ECB) publishes the financial balance sheets of the financial system players for the euro area as a whole **(which form the so-called financial system)** and also of the non-financial players, particularly households, non-financial corporations and general government. For example, for each of these players, the ECB has published the details of the financial assets they hold and the financial liabilities they incurred since the creation of the euro area.

Data published by the ECB are harmonised: all Member States take a similar approach to collecting data. We therefore have a homogeneous and consistent picture of the entire financial sphere of the euro area economy at our disposal. Although some euro area Member States publish more granular data at the domestic level, they do not necessarily comply with the ECB's national account standards. The possibility of exploiting these data to further develop our analyses is thus limited. Furthermore, in accordance with the European system of accounts 2010, the national accounts data published by the ECB are not consolidated.

The majority of the ECB data used in this study come from the Quarterly Sector Accounts (QSA) database. As the data for the central bank, credit institutions and other deposit-taking corporations and money market funds sector were only available on an aggregated basis before 2015, data from the ECB's Balance Sheet Items (BCI) database are occasionally used to separate out central bank assets and liabilities from those of credit institutions and other deposit-taking corporations and money market funds. However, the two databases are prepared using different methodologies. Caution is therefore required when comparing the data. Moreover, the data cannot be used to differentiate between the three components of wealth flows: variations related to changes in methods and revaluation effects are aggregated into the same category. It should be noted that a change in method was made in Luxembourg between 2014 and 2015, which had a noticeable effect on the flows and stocks of the financial assets of the country's other non-bank player sector.

Although the composition of the euro area has changed over the period under review, the data presented in this study were compiled on a like-for-like basis, using the structure of the euro area at 1 January 2015.

In this study, financial values are generally expressed as a percentage of GDP. This choice warrants the following observations: since the 1970s, economists have customarily estimated the level of development of the financial sector using ratios of all or part of the financial sector's assets and liabilities to GDP, which represents the real economic sphere. As these indicators have limitations in that they compare a flow (GDP) with a stock (financial assets), they are difficult to interpret as they stand.[1] However, they remain useful because

1 With regard to the link between the development of the financial sector and economic growth, see Alexander Popov (2017), "Evidence on finance and economic growth", *Working Paper Series of the European Central Bank*, No. 2115, December. https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2115.en.pdf

they facilitate comparisons between countries and also because they have been shown to be a relevant independent variable in the econometric work carried out to test the relationship between the development of the financial sector and the development of the real economy. The International Monetary Fund has in fact developed a summary indicator to measure the level of financial sector development more precisely and to overcome the conceptual limitations associated with ratios comparing one or more financial assets or liabilities to GDP (see Financial Development Index Database, https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B).

Appendix 2
Nomenclature of the French financial sector

Financial intermediaries except insurance corporations and pension funds S12A						Financial auxiliaries	Captive financial institutions	Insurance corporations
Monetary financial institutions				Non-monetary financial intermediaries S12AIF				
Central bank	Other monetary financial institutions S12T							
	Credit institutions and other deposit-taking corporations[a]		Money market funds (MMFs)	Non-MMF investment funds	Other financial intermediaries			
S121	S122		S123	S124	S125	S126	S127	S128
Banque de France **IEDOM** *Institut d'émission des départements d'outre-mer* (the French overseas departments' note-issuing bank)	**• Commercial banks** of which: – BNP Paribas – Calyon – Crédit foncier de France – Crédit industriel et commercial (CIC) – DEXIA Crédit Local – HSBC France – La Banque postale – LCL (Crédit Lyonnais) – Natixis SA – Société Générale **• Mutual or cooperative banks** – BPCE (Banques populaires) – Caisses d'épargne network – Crédit Agricole Mutuel network **• Municipal credit banks** **Resident electronic money institutions** **• Specialised financial corporations (SFC)** – Euronext Paris – Caisse de garantie du logement locatif social (CGLS) – Agence française de développement (AFD) **• Regional development companies (RDC)** incl. overseas department financial institutions	**• Financial corporations governed by specific legal or regulatory provisions** – Financial corporations affiliated to mutual or cooperative banks – Mortgage companies – Mortgage credit institutions – Special status guarantee companies – Sofergies (leasing companies financing energy savings) – Overseas department credit companies – Telecommunications finance companies **• Financial corporations engaged in various types of activity** *Leases* – Equipment leasing – Leases with purchase options – Property leasing *Other loans* – Consumer credit – Money transfers – Real estate finance – Equipment financing – Guaranteed refinancing companies – Investment of principal services – Other activities (o/w: *Caisse de refinancement de l'habitat* (CRH – housing refinancing fund); financing company cash requirements, etc.) *Finance companies* **• *Caisse des dépôts et consignations* (CDC)** **Factoring corporations, metropolitan head office**	**• *SICAV monétaires* (money market open-ended investment companies)** **• *FCP monétaires* (money market open-ended collective investment funds)**	**General-purpose non-money market SICAVs and FCPs, o/w:** – Equity investment funds – Bond investment funds – Structured investment funds – Alternative investment funds – Diversified investment funds – Monaco investment funds **• SICAF (closed-ended investment funds)** **• *FCP Entreprises*** (workplace investment schemes): – Employee savings plans (FCPE, SICAVAS) **• Managed futures funds (FCIMT)** **• High-risk investment funds, including venture capital and innovation funds** **• Professional real estate investment funds (SCPI)** **• Real estate collective investment undertakings (OPCI)**	**• Investment enterprises** **• *Action Logement Services* (ALS) Managed by ANPEEC** **• Professional groups for distribution of collective loans to non-bank agents** **• Mutual guarantee companies (SCM)** **• Securitisation vehicles** **• *Société de financement de l'économie française* (SFEF – corporation for the financing of the French economy)** **• Micro-lending companies** **• Institutions overseen by the ACPR**	**• Portfolio management companies (AMF)** **• Brokerage companies** **• GIE Carte Bleue** **• GIE Carte Bancaire** **• Deposit insurance funds** **• Money changers** **• Financial companies** **• Payment institutions**	**• Companies that hold a level of capital that allows them to control a group of subsidiary companies and whose main function is to own that group without providing any other services (they do not administer or manage other units)** **• Selection criteria for these LU** – LU with output < EUR 1 million **and** – LU with over 80% of total assets in equity securities **and** – LU with 0 to 3 employees **and** – LU with a balance sheet > EUR 1 million	**• Corporations:** – life insurance – non-life insurance – reinsurance **• Mutual insurers** **• Provident institutions** **• Coface**

a) The "deposit-taking corporations" sector in national accounts terminology.
Source: Banque de France.
Note: The European system of accounts (ESA 2010) breaks down the financial corporations sector (S12) into nine sub-sectors: S121, S122, S123, S124, S125, S126, S127, S128 and S129; S129 (pension funds) is not included in the table as it is not applicable in France. ACPR: *Autorité de contrôle prudentiel et de résolution* (Prudential Supervision and Resolution Authority); FCP: *fonds commun de placement*; SICAF: *société d'investissement à capital fixe*; SICAV: *sociétés d'investissement à capital variable*; LU: legal unit.

Appendix 3
The impact on financial balance sheets of developing financial arrangements for tax optimisation purposes

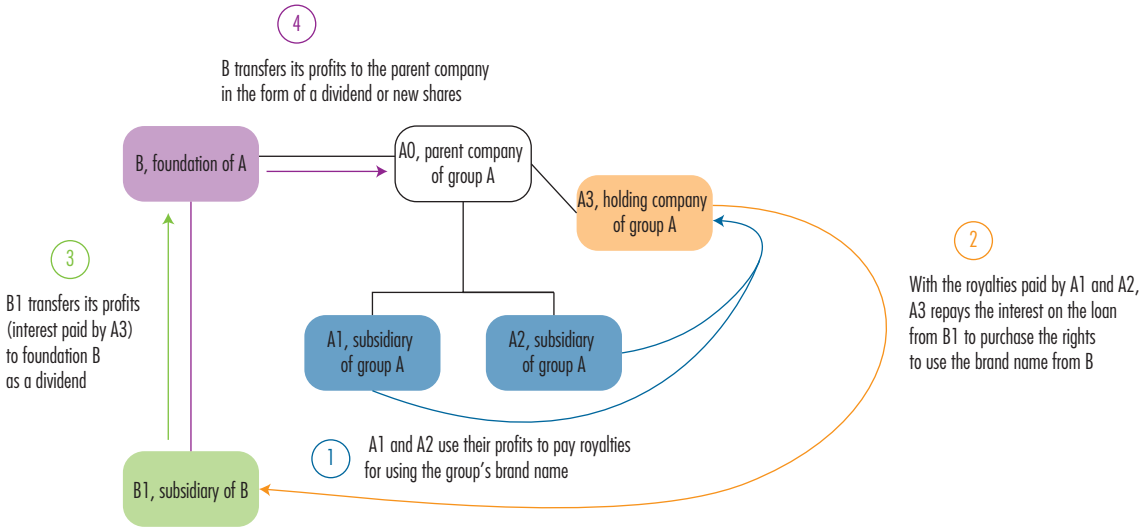
In recent decades, there have been numerous financial arrangements that have allowed companies to exploit the specific features and tax loopholes of the different European Union countries for tax optimisation purposes. These strategies are used to shuttle company profits through countries and structures where they will be taxed least.

For the past several years, the Organisation for Economic Co-operation and Development (OECD), the European Union and the G20 have seized upon this issue, which has taken on particular importance with the boom in high-tech companies whose production and online sale of services can be easily relocated to countries with a more attractive tax environment. Avoiding corporation tax has significant consequences both for national tax revenues and for social cohesion, inequalities and free and undistorted competition, which has prompted the European Commission to pass several directives aimed at putting a stop to such practices.

The example below sets out a financial arrangement that has been commonly used in Europe and that measures recently adopted by the European Commission are intended to render obsolete.

Multinational corporation A has a parent company A0 established in country 1[1] with two subsidiaries A1 and A2 in countries 2[1] and 3,[1] which make profits on behalf of their parent company (see diagram). The following arrangement is put in place to repatriate the profits made within the parent company while minimising the tax payable on earnings:

Example of a financial arrangement for tax optimisation purposes



Source: Banque de France.

1 Member States of the European Union and the euro area.

- A0, the parent company of the group, creates two entities:
  – Foundation B in country 4, which is assigned ownership of the group's brand name and can thus sell the rights to its use. Country 4 is chosen for its advantageous tax regime for dividends received from abroad.
  – Holding company A3 in country 5,[2] selected on the basis of its attractive tax environment for royalties received from abroad.

- Foundation B creates a subsidiary B1, in country 6,[2] chosen for its advantageous tax regime for interest received from abroad.

- A3, the holding company of multinational corporation A, buys the rights to use the brand name from foundation B and finances the purchase through a loan from B1, the subsidiary of foundation B.
  – A3 therefore pays interest to subsidiary B1 each year.
  – These interest payments are financed with the royalties paid by subsidiaries A1 and A2 for the use of the brand name of group A. The royalties are paid from the profits generated by A1 and A2.

- B1 then transfers its profits (interest paid by A3) to foundation B as a dividend.

- A0, which owns the foundation, can then recover the profits in the form of dividends or shares.

The benefit of this arrangement from a financial standpoint is that each of the different countries involved offers specific tax advantages for certain types of financial transactions (dividends paid by a foreign subsidiary, interest received from a subsidiary abroad, etc.). This ultimately allows the parent company to recover the profits made by its subsidiaries while paying much lower taxes than if the subsidiaries had transferred their profits to the parent company directly. Furthermore, some EU Member States grant specific tax regimes (tax rulings) to certain corporations on a case-by-case basis, meaning that many of them benefit from a very low effective tax rate.

The European Commission recently found that some of these agreements are illegal as ultimately they amount to disguised state subsidies (and therefore preferential treatment) to selected corporations, which is prohibited within the European Union under the principle of free and undistorted competition.

From the perspective of the national accounts, these financial arrangements affect the amounts of financial assets in the various euro area institutional sectors. In the case of a financial arrangement such as that presented above, there are far more financial intermediaries than if subsidiaries A1 and A2 transferred their profits to their parent company directly (companies A3 and B1 belong to the financial sector).

- Without a financial arrangement, and assuming that subsidiaries A1 and A2 transfer all their profits to the parent company each year, which in turn deposits the sum collected every year in a current account with a bank (which would be the sole financial system player), the parent company would be the only entity at the end of the year with financial asset holdings, i.e. a current account, which would be credited with the profits made annually, and the equity interests in subsidiaries A1 and A2.

- On the other hand, with a financial arrangement:
  – the parent company would also have equity interests in foundation B and holding company A3;
  – subsidiary B1 of foundation B would have an asset in the form of the loan granted to A3, the holding company of group A (foundation B's assets are not taken into consideration as it is located outside the euro area).

This type of financial arrangement also has an effect on the non-financial account of the euro area institutional sectors. In the example above, a new non-financial asset is created: the property rights to a brand name. Payment of royalties for the use of the group's brand name by a subsidiary to an entity in the same country is considered to be intermediate consumption and thus has no effect on the non-financial account of the sector (in other words, the country's output – GDP). However, when the royalties are paid to an entity in another country, the transaction is considered to be a service import/export and is thus

2 Member States of the European Union and the euro area.

taken into account in the calculation of GDP. Ireland's GDP, for example, is greatly affected by these financial movements. Consequently, the Central Statistics Office of Ireland calculates a corrected measure of GDP in order to more precisely evaluate the real growth of the Irish economy. Foreign direct investment statistics, which are particularly elevated in Ireland, the Netherlands and Luxembourg,[3] are also the result of these corporate strategies.

The following tables show the financial accounts of non-financial corporations and the financial sector with and without a financial arrangement in place. The balance sheet (which reflects the stock of assets and liabilities) increases/decreases from year Y to year Y +1 depending on the financial flows in year Y. In both these examples, it is assumed that subsidiaries A1 and A2 generate a profit of 100 in year Y. The financial accounts of the foundation are presented separately, as in our example it is located outside the euro area. In order to simplify understanding and comparison of the tables, the profits recovered by the parent company are the same in both scenarios. Logically, however, the profits obtained by the parent company in the scenario without a financial arrangement should be lower to reflect the payment of corporation tax.

3 *http://www.oecd.org/investment/FDI-in-Figures-April-2019.pdf*

Scenario without a financial arrangement

1. A1 and A2 transfer their profits to A0 → 2. A0 deposits the profits received in its bank account

Ta Non-financial corporations in the euro area

	Financial balance sheet at 1 January of year Y		Financial flows during year Y		Financial balance sheet at 1 January of year Y + 1	
	Assets	**Liabilities**	**Assets**	**Liabilities**	**Assets**	**Liabilities**
A0, parent company	Equity interests in subsidiaries A1 and A2: 200		Deposit (profits transferred to the parent company by the subsidiaries): 200		Equity interests in subsidiaries A1 and A2: 200 Deposit: 200	
A1, subsidiary of group A		Equity securities of parent company A0: 100	Deposit (profit made on behalf of the parent company): 100 Cash (payment of profits to the parent company): -100			Equity securities of parent company A0: 100
A2, subsidiary of group A		Equity securities of parent company A0: 100	Deposit (profit made on behalf of the parent company): 100 Cash (payment of profits to the parent company): -100			Equity securities of parent company A0: 100
Total	200	200	200	0	**400**	200

The assets of non-financial corporations amount to **400** in year Y + 1.

Source: Banque de France.

Tb Euro area financial sector

	Balance sheet at 1 January of year Y		Financial flows during year Y		Balance sheet at 1 January of year Y + 1	
	Assets	**Liabilities**	**Assets**	**Liabilities**	**Assets**	**Liabilities**
Bank of A0				Deposit of A0: 200		Deposit of A0: 200
Total	0	0	0	200	**0**	200

The financial sector has **no financial assets** in year Y + 1.

Source: Banque de France.

Scenario with a financial arrangement in place

1. A1 and A2 pay royalties to A3
2. A3 repays the loan granted by B1
3. B1 pays a dividend to foundation B
4. B pays a dividend or transfers new shares to A0

Tc Non-financial corporations in the euro area

	Financial balance sheet at 1 January of year Y		Financial flows during year Y		Financial balance sheet at 1 January of year Y + 1	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
A0, parent company	Equity interests in subsidiaries A1 and A2: 200 Equity interests in subsidiary A3: 100 Equity interests in foundation B: 100		Deposit (dividend from foundation B): 200		Equity interests in subsidiaries A1 and A2: 200 Equity interests in subsidiary A3: 100 Equity interests in foundation B: 100 Deposit: 200	
A1, subsidiary of group A		Equity securities of parent company A0: 100	Deposit (profit made on behalf of the parent company): 100 Cash (royalties due for use of the brand name): -100			Equity securities of parent company A0: 100
A2, subsidiary of group A		Equity securities of parent company A0: 100	Deposit (profit made on behalf of the parent company): 100 Cash (royalties due for use of the brand name): -100			Equity securities of parent company A0: 100
Total	400	200	200	0	**600**	200

The assets of non-financial corporations amount to **600** in year Y + 1.

Source: Banque de France.

Td Euro area financial sector

	Balance sheet at 1 January of year Y		Financial flows during year Y		Balance sheet at 1 January of year Y + 1	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
A3, holding company of group A		Equity securities of parent company A0: 100	Cash (royalties due for use of the brand name): 200	Loans (repayment of loan from B1): -200		Equity securities of parent company A0: 100
		Loans (loan from B1): 1,100	Cash (repayment of loan): -200			Loans (loan from B1): 900
B1, subsidiary of foundation B	Loans (loan granted to A3): 1,100	Equity interests of foundation: 100	Loans (amortisation of loan to A3): -200		Loans (loan granted to A3): 900	Equity interests of foundation B: 100
			Cash (interest on loan): 200			
			Cash (dividend paid to B): -200			
Bank of A0				Deposit of A0: 200		Deposit of A0: 200
Total	1,100	1,300	-200	0	**900**	1,300

Financial sector assets amount to **900** in year Y + 1.

Source: Banque de France.

Te Foundation B (outside the euro area)

	Balance sheet at 1 January of year Y		Financial flows during year Y		Balance sheet at 1 January of year Y + 1	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
B, foundation of A	Deposit (purchase of rights to use the brand name by A3): 1,100	Equity securities of parent company A0: 100	Cash (dividend received from B1): 200		Deposit (purchase of rights to use the brand name by A3): 1,100	Equity securities of parent company A0: 100
	Equity interests in B1: 100		Cash (payment of dividend to parent company A0): -200		Equity interests in B1: 100	
Total	1,200	100	0	0	1,200	100

Source: Banque de France.

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