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Three extensions of the map of the euro area financial system

by
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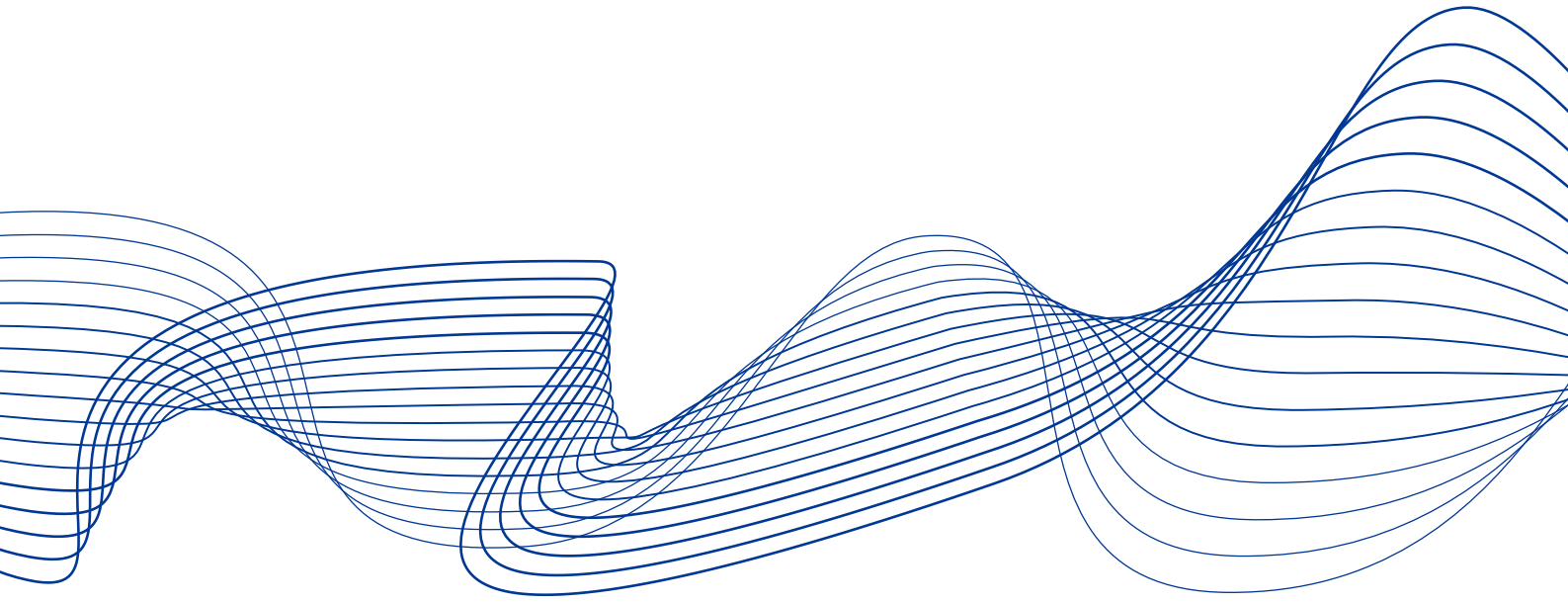

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Abstract

Andersen and Sánchez Serrano (2024) define a methodology for building a map of the euro area financial system using data from the quarterly sectoral accounts of the euro area (complemented with data from other sources). This map can be useful for macroprudential authorities in regularly monitoring interconnections, contagion channels and systemic risk dynamics. We develop three extensions to the map that should increase its relevance: (i) the use of euro area Distributional Wealth Accounts to consider households according to their wealth; (ii) a breakdown of the other financial institutions sector into other financial intermediaries, financial auxiliaries, and captive financial institutions and money lenders; and (iii) using international investment position data to compute exposures to the rest of the world by country. In addition to the series codes on the ECB Data Portal to retrieve the relevant data, we illustrate the potential analytical application of each of the three extensions. In a nutshell, our analysis of the euro area household sector according to wealth shows that the aggregate figures conceal significant heterogeneity. Using data from the quarterly sectoral accounts, we are able to gain a clearer overview of other financial institutions, identifying the links with banks through securitisation vehicles and with non-financial corporations through captive financial institutions. Finally, although we cannot match exactly all the financial instruments in the balance sheet, data on the institutional investment position shows, among others, a continuous increase in the portfolio investments of euro area residents in the United States since 2013.

Keywords: interconnections, flow of funds, household finance, non-bank financial intermediation, international finance

JEL codes: F30, G20, G50

Executive Summary

Andersen and Sánchez Serrano (2024) define a methodology for building a map of the euro area financial system using data from the quarterly sectoral accounts of the euro area (complemented with data from other sources). While the aggregation level is relatively high, the map can be useful for macroprudential authorities in regularly monitoring interconnections, contagion channels and systemic risk dynamics in the financial system. We develop three extensions to the map that should increase its relevance in looking at these issues.

The extensions refer to (i) the use of recent data from the euro area Distributional Wealth Accounts to consider households according to their wealth; (ii) a breakdown of the other financial institutions sector into other financial intermediaries, financial auxiliaries, and captive financial institutions and money lenders; and (iii) using balance of payments and international investment position data to compute exposures to the rest of the world by country. There is a fourth extension, concerning the exposure of the household sector to financial assets through investment funds, which it is not considered in this analysis.

In addition to the series codes on the ECB Data Portal to retrieve the relevant data, we illustrate the potential analytical application of each of the three extensions. While allowing for methodological caveats, we also consider how these extensions might provide relevant insights into the areas of household inequality and the organisational structure of multinational groups. Our analysis is merely for illustrative purposes and should not be seen as a separate piece of research.

First, our examination of the euro area balance sheets for the household sector according to wealth shows that the aggregate figures conceal significant heterogeneity. An analysis of the financial assets held by this sector in the third quarter of 2023 reveals that the two highest deciles were the largest holders of real estate and bank deposits and the second largest investors in investment funds. Such households were not, for the most part, in debt, in sharp contrast with households in the lower part of the wealth distribution, which even showed negative net worth. Analysing financial transactions by this sector during selected stress episodes, we find that households react negatively to shocks affecting the real economy. In comparative terms, changes in the balance sheets of households tend not to be large in comparison with other sectors, such as money market funds. In considering household wealth inequality, we identify a slight decrease in inequality since 2015. It is worth noting, however, that few measures of inequality are based on balance sheet variables; consequently, our analysis and the conclusions derived from it are limited in scope.

Second, using data from the quarterly sectoral accounts, we are able to gain a clearer overview of the sector of other financial institutions, identifying the links with banks through securitisation vehicles and with non-financial corporations through captive financial institutions. While the available data do not offer a definitive answer as to the role played by non-bank financial intermediaries in providing financial services to the real economy, they do prove useful in identifying the size of possible intragroup loans and transactions in debt securities between captive financial institutions and non-financial corporations. Although we did not find any pattern of concern in financial transactions during the periods of stress considered in examining this sector (i.e. the Brexit referendum, the outbreak of the COVID-19 pandemic and the start of the war in Ukraine), we did

see a strong seasonal component, on both sides of the balance sheet, in financial transactions by captive financial institutions in loans and unlisted shares that might be linked to intragroup transactions by large multinational groups.

Third, although we were not able to match exactly all the financial instruments in the balance sheet, the BOP and IIP data on debt securities and equity show, among others, a continuous increase in the portfolio investments of euro area residents in the United States since 2013. We also observe how the euro area interacts with the different counterpart countries concerned and the nature of the financial flows with those counterparts. For instance, foreign direct investment tends to be used primarily for investing in emerging Asian economies, while portfolio investment and other investments are generally focused on advanced economies. In examining past episodes of financial stress (the taper tantrum in the United States, the Brexit referendum, the outbreak of the COVID-19 pandemic and the start of the Russian invasion of Ukraine), we also note large financial transactions involving other assets and liabilities, which mainly cover loans and deposits and are typically associated with banks.

We believe that extending the map of the euro area financial system in the three directions set out here would greatly improve analytical powers to identify key interconnections and possible contagion channels by offering additional information on three of the largest sectors of the euro area economy (households, other financial institutions, and the rest of the world), while being aligned with the methodology and valuations for the quarterly sectoral accounts.

1 Introduction

As shown in Andersen and Sánchez Serrano (2024), it is possible to analyse interconnections between sectors in the financial system using who-to-whom data in the euro area quarterly sectoral accounts. In a recent ESRB Occasional Paper, Andersen and Sánchez Serrano (2024) sets out a methodology for building a map of the euro area financial system using quarterly sectoral accounts data, complemented with data from other sources. The map can be used to visualise existing cross-sectoral interconnections and exposures, to analyse how key bilateral positions have evolved over time, and, by looking at financial transactions, to understand how past episodes of financial stress have affected balance sheet structures and intersectoral flows. The map uses data on a non-consolidated basis to draw up balance sheets for ten sectors of activity (household, non-financial corporations, government, central banks, banks, insurance corporations, pension funds, investment funds, money market funds and other financial institutions), plus an additional balance sheet for the rest of the world. The main financial instruments (cash, deposits, debt securities, listed and unlisted shares, and investment fund shares) are shown as assets or liabilities for each sector. An important feature of the map is the focus on five key financial markets: corporate bonds, government bonds, listed equity, repo markets and derivatives markets. The balance sheets are built on outstanding amounts, with financial transactions being used to assess the response to selected episodes of financial stress. The methodology proposed in Andersen and Sánchez Serrano (2024) has recently been applied to the financial systems of France, Portugal and Spain (Mouakil et al., 2024; Saldías, 2025, Sánchez Serrano, 2025).

Although confronted with methodological challenges, such maps of the financial system can provide useful insights to feed current macroprudential analytical and policy discussions in several areas. Looking at changes in sectoral balance sheets over time, Andersen and Sánchez Serrano (2024) provide evidence of the fact that the euro area financial system was essentially bank-centric when it entered the global financial crisis, with investment funds, government debt and central banks only increasing substantially in importance thereafter. It also showed that liquidity, bank deposits, money market fund shares and securities financing transactions are key to ensuring a smooth supply of liquidity. Such findings can be used in policy discussions on, among other matters, the interlinkages between banks and non-banks, the provision of financial services by non-banks to households and non-financial corporations, and in determining which sectors are sufficiently resilient to absorb losses and whether they serve as transmitters of stress liquidity at the system level.

This occasional paper presents three extensions to the map of the euro area financial system that should increase its relevance for systemic risk analysis. The three extensions exploit existing datasets to increase the granularity of three key sectors in the financial system: households (which have the largest balance sheet), other financial institutions (whose links to the real economy have been growing since the global financial crisis) and the rest of the world. The first extension involves a breakdown of the household sector into deciles by wealth, making use of recently released Distributional Wealth Accounts (DWA) data for the euro area. Having granularity within the household sector (the largest sector in the euro area) reveals different balance sheet

structures and vulnerabilities depending on wealth. For the second extension, we break down the aggregate for other financial institutions into its three subsectors: other financial intermediaries, financial auxiliaries, and captive financial institutions and money lenders. That aggregate encompasses a wide range of business models, whose related vulnerabilities and risks may not be visible if shown solely in aggregated form. The breakdown provides a better understanding of the links between other financial institutions, banks and non-financial corporations. For the third extension, we use euro area balance of payments (BOP) and International Investment Position (IIP) data to determine exposures to the rest of the world by country. Being able to disentangle the principal exposures to the rest of the world provides relevant information on key euro area counterparts.

A potential fourth extension to households' exposures to financial assets through investment funds is not considered here. A newly available dataset published by the European Central Bank covers the indirect exposures of households through their holdings of investment fund shares (Anacki et al., 2024). While this is also relevant from a financial stability viewpoint, we decided not to include it within our framework given our focus on a wider-ranged extension based on the DWA. The household sector holds around €3 trillion in investment fund shares and, albeit relevant, this constitutes only a small proportion of the sector's balance sheet. On this ground and to avoid complex interactions between the core data from the quarterly sectoral accounts and the DWA-based extension, we decided that we should not, for the time being, pursue the newly available dataset further.[1]

Analytical insights derived from each of the three extensions (households by wealth deciles, a breakdown of other financial institutions and exposures to the rest of the world by country) are presented in separate sections. To illustrate the potential analytical application of the individual extensions covered in this document, each of the following three sections provides a short analysis, complementary to that given in Andersen and Sánchez Serrano (2024). Two boxes provide insights, although subject to methodological caveats, on household wealth inequality since 2009 and on intragroup exposures between non-financial corporations and other financial institutions (mainly through captive financial institutions).[2] While these analyses are primarily for illustrative purposes, they point to the benefits that extending the map of the euro area financial system might bring. None of the analyses undertaken respond to any specific research question and should not, therefore, be seen as separate research pieces. They are examples of the insights they might potentially provide to macroprudential authorities. For information, the series codes on the ECB Data Portal for each time series necessary to replicate our analysis are set out in the Annex.

Our extensions could enrich the policy applications of the map proposed in Andersen and Sánchez Serrano (2024), particularly in the light of recent calls for desktop simulations to be undertaken for stress in the financial system. The three extensions presented here should be seen as complementing the Andersen and Sánchez Serrano map and, by offering higher

1 Any comprehensive assessment of the indirect exposures of households should include, among others, exposures through pension funds. It should be noted, however, that the new dataset looking at exposures through holdings of investment fund shares relates solely to the household sector and does not cover the exposures of other sectors through the same channel.

2 Due to the reporting of non-consolidated data in the quarterly sectoral accounts, intragroup flows between institutions belonging to the same group but allocated to different sectors are not cancelled out. Box 2 is an attempt to shed some light on the extent to which large euro area non-financial corporations use captive financial institutions to raise funding in a centralised manner.

granularity in particular areas, as enhancing the policy application of that map to address, among other things, exposures to a given country. Furthermore, the High-Level Group on the ESRB Review identified a need to deepen understanding of the EU financial system in order to create capacity for system-wide stress testing (Rehn et al., 2024). The Andersen and Sánchez Serrano map could already serve as a valid starting point for system-wide stress tests, and our extensions would provide additional granularity for cross-country exposures, the household sector and the non-bank financial sector. For example, applying the appropriate methodology for determining transmission channels and elasticities, they could show the first and second-round effects on sectoral balance sheets of a decline in stock prices in a country outside the euro area.

The remainder of this document is organised as follows. The next section discusses the analytical use of the DWA for euro area households. Section 3 deals with the breakdown of other financial institutions into other financial intermediaries, financial auxiliaries, and captive financial institutions and money lenders. Section 4 considers the use of BOP and IIP data to show exposures to the rest of the world by country. Finally, Section 5 concludes. The Annex provides further information on the data points used in the analysis and which could be used to complement the Andersen and Sánchez Serrano map.

2 Distributional Wealth Accounts for euro area households

Using the experimental DWA for euro area households, it is possible to create a balance sheet for the household sector according to wealth. As shown in Andersen and Sánchez Serrano (2024), the household sector is the largest sector in the euro area, with a balance sheet over €72 trillion. By way of comparison, the balance sheet for banks stood at €37.7 trillion in the second quarter of 2023 and that for non-financial corporations at €52.1 trillion. As we show later in this section, that large aggregate hides very marked heterogeneity, with the wealthiest households exhibiting a different balance sheet from those at the bottom of the distribution.

The DWA are experimental statistics that provide distributional information on the euro area household sector. They are collected by the European System of Central Banks (ESCB) and comprise the euro area countries, with the exception of Croatia, plus Hungary. They link the quarterly sectoral accounts with the Household Finance and Consumption Survey with the objective of providing a consistent assessment of the distribution of household wealth in the euro area. For each balance sheet item (deposits, debt securities, loans, equity, life insurance, real estate, business assets), households are grouped according to net wealth (in ten deciles), their working status (retired, unemployed, self-employed, employee) and their home-ownership status (owner, tenant).[3] The DWA also disclose the Gini coefficient of the wealth inequality for households in each country. Finally, it is worth noting that the ESCB is actively working on improving this dataset.

By its own construction, data for the lower deciles, which are not publicly disclosed, must be interpreted with caution.[4] As a result of the methodology used to compute the DWA, data for the lower deciles may report negative values for net worth, thus requiring a specific adjustment (European Central Bank, 2024c). Data for the lower deciles should therefore be interpreted with care. A related issue arises when negative values associated with the net worth of lower deciles impair the interpretation of some of the descriptive statistics and ratios. The treatment of negative values in assessing inequality has been discussed in academic literature for some time, with various proposals being made to remove them, replace them with zeroes or use normalising factors. We have followed Schutz (1951) and Lee and Suh (2025) and kept negative values in our analysis. The existence of negative values for the lower deciles is an important factor in the indicators of inequality referred to in Box 1. We have, however, excluded those values where the first decile is in the denominator in order to avoid the impact of such values.[5]

While the DWA are methodologically based on the quarterly sectoral accounts, there are minor differences in the main balance sheet items that have a limited impact on the analysis. By way of example, cash is not included in the DWA and there is no breakdown of debt securities into government bonds and corporate bonds. Furthermore, the presentation of the DWA balance

3 For further information, see Blatnik et al. (2024) and European Central Bank (2024c).

4 Data for the lower deciles is not published by the ESCB but is presented in aggregated form as “Bottom 50”.

5 One common measure of inequality is to divide the top decile by the first decile, or the top two deciles by the bottom two declines, to show how much more wealth is held by the wealthiest. In our case, with negative net wealth, these indicators would produce inaccurate values.

sheet does not include an item for other liabilities, the liabilities side of the balance sheet solely comprising net wealth and loans (mortgages and other loans). All in all, the benefits brought by the breakdown of the household sector based on the DWA would seem to outweigh the disadvantages arising from these methodological issues.

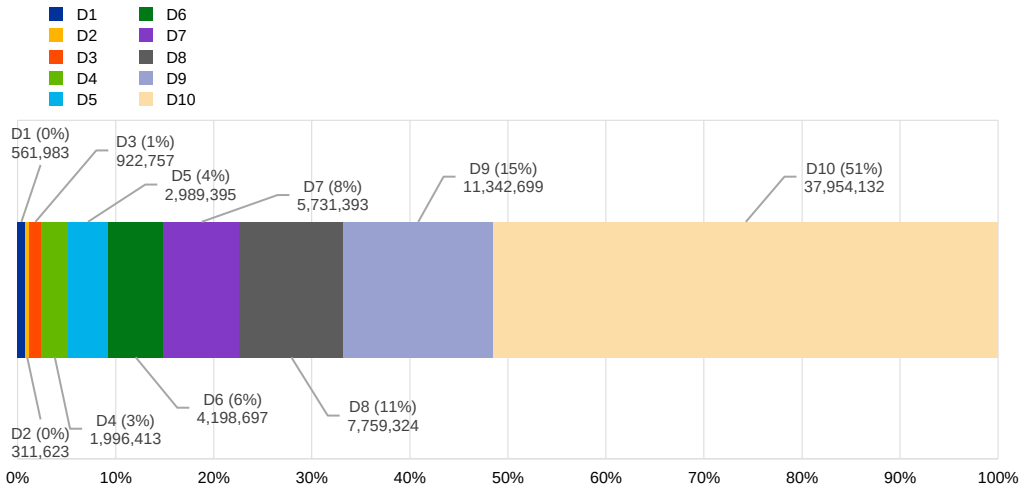
2.1 Distribution of the household sector balance sheet by decile

Total assets and net wealth are not homogenously distributed across euro area households, with wealthier households representing two-thirds of the total assets held by the sector (Figure 1). Households in the highest two deciles account for 66% of the total assets of the household sector. Households in the lowest deciles hardly have any weight in the aggregate for the sector (D1 and D3 each account for 1% of the total assets, while D2 accounts for less than 1%). In comparative terms, the total assets held by the wealthiest decile in the euro area are close to the total assets for the entire euro area banking system. Turning to net wealth, the differences identified for total assets are even larger (Figure 2). The lowest decile has negative net wealth, while the net wealth of the second decile is 369 times smaller than the net wealth of the highest decile and even 20 times smaller than the net wealth of the fifth decile.

Figure 1

Distribution of total assets for euro area households across deciles, Q1 2024

(percentages; EUR millions)

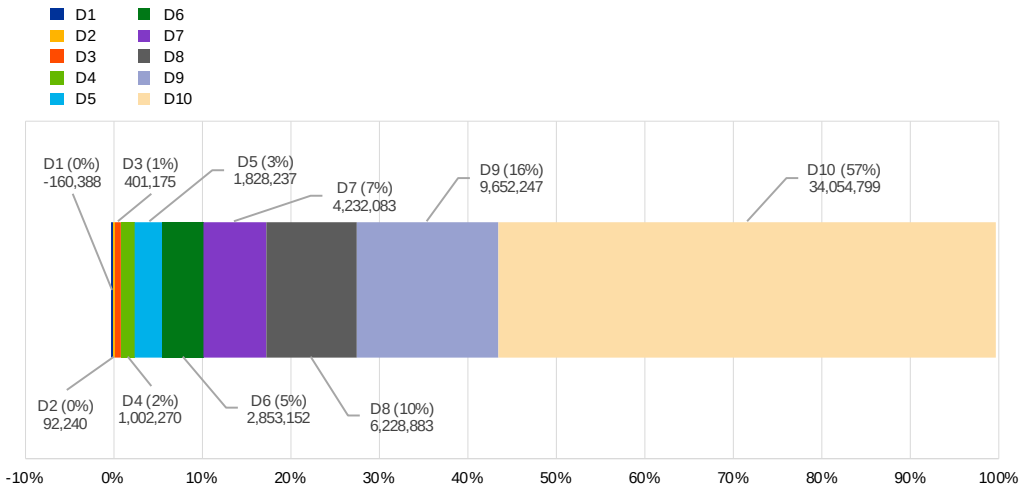


Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Share of total assets of households according to their wealth, over total assets of households. D stands for decile. D1 refers to the lowest decile according to wealth and D10 to the highest.

Figure 2

Distribution of net wealth for euro area households across deciles, Q1 2024

(percentages; EUR millions)



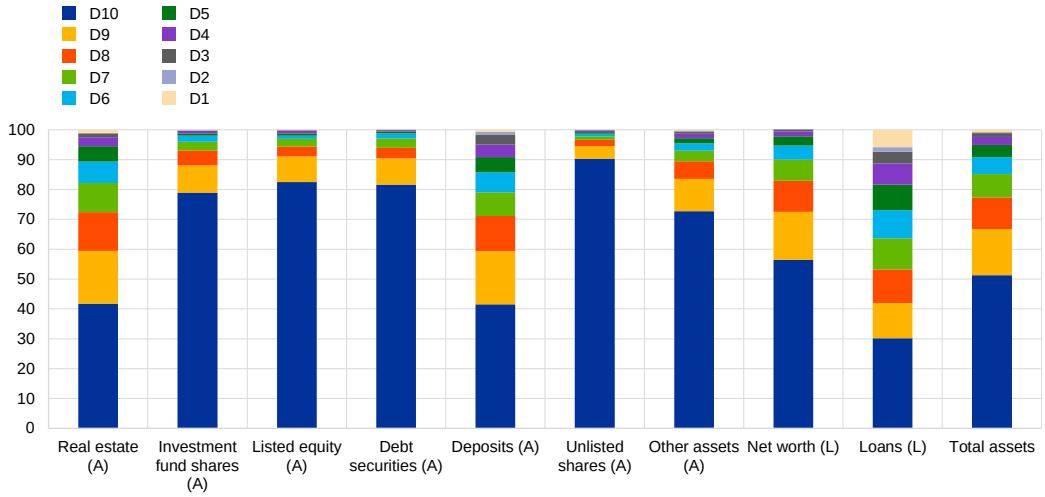
Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Share of net wealth of households according to wealth in the total net wealth of households. D stands for decile. D1 refers to the lowest decile according to wealth and D10 to the highest.

Turning to the different DWA items, real estate assets, deposits and loans (debt) are more evenly distributed across deciles (Figure 3). Looking at the different assets and liabilities disclosed in the DWA, it is possible to see how they are distributed across the ten deciles by wealth. The highest three deciles hold the majority of unlisted shares (over 95%) and of debt securities, investment fund shares and listed equity (over 90%). This points to a large concentration of financial assets across the wealthiest. Deposits are the main financial asset held by less wealthy households, while real estate appears to be more evenly distributed across the spectrum (even if slightly tilted towards the wealthiest). Turning to the liabilities side, debt is more evenly distributed than other financial assets, signalling the less sound financial position of less wealthy households. In the next subsection, we consider in detail the balance sheet for each of the deciles. Box 1 discusses inequality measures that can be derived from the DWA.

Figure 3

Balance sheet structure for euro area households, Q1 2024

(percentages)



Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Distribution of main assets and liabilities of households across deciles. (A) stands for assets, (L) for liabilities and D for decile. D1 refers to the lowest decile according to wealth and D10 to the highest.

Box 1

Measuring inequality in euro area households

There is growing literature exploring the links between financial stability and household wealth and income inequality. Most studies of inequality approach it through income (income inequality) or wealth (wealth inequality), the latter linked to the balance sheet structure. Starting with the relationship between income inequality and financial stability, Isojaervi and Jerow (2024) summarises the three channels through which income inequality may affect financial stability: (i) low-income households may increase demand for credit to keep up with consumption when their income stagnates; (ii) demand for riskier assets may increase if the wealthiest have a higher risk appetite; and (iii) increased savings by the wealthiest may be channelled back to the financial system through different asset classes and ultimately add to the supply of credit, increasing the leverage of other sectors and the rest of the household sector. According to Kirschenmann et al. (2016), household inequality can be a predictor of financial crises, particularly when inequality is high, this conclusion being reached from their analysis of 14 developed economies between 1870 and 2008. Similarly, Paul (2023) finds that rising top income inequality and low productivity growth are robust predictors of financial crises. Kumhof et al. (2015) provide a theoretical model for the Great Depression and the global financial crisis that is focused on the higher income share of the wealthiest US households. Looking at wealth inequality, Garcia and Panetti (2022) discuss how wealth inequality can lead to bank runs by the poor, generating a systemic crisis in the absence of government intervention, while Toda and Walsh (2020) develop a general equilibrium model and empirically finds that increases in wealth inequality (the share of the richest in the total distribution) lead to lower equity returns in the subsequent year. Kuhn et al. (2020) study in detail income and

wealth inequality in the United States since the end of Second World War and the impact of asset prices (real estate and stocks) on the distribution of wealth. An earlier work by Gollier (2001) looks at the impact of wealth inequality on equity premiums and risk-free rates, finding that higher wealth inequality is likely to result in lower risk-free rates.

It is possible to define some measures of wealth inequality for the euro area at wealth decile level based on the DWA, although these should be interpreted with caution owing to a number of methodological caveats. Most measures of inequality are focused on income (Trapeznikova, 2019), which is not part of the DWA. Consequently, it is not possible to compute highly elaborate measures of inequality, such as the Theil index or the Hoover index. We have therefore used net wealth as the main variable in assessing wealth inequality across euro area households (income inequality was thus out of our scope),[6] based on data at the level of the wealth deciles. Basically, we took the distribution of wealth deciles in each quarter and calculate different indicators of wealth inequality.

Measured by the Palma ratio, the Gini coefficient or the coefficient of deviation, wealth inequality seems to have been decreasing over the past few years. High (low) values of the Palma ratio, the Gini coefficient and the coefficient of variation signal high (low) inequality.[7] Panel a of Figure A shows two measures of inequality applied to the outstanding amount of net worth across deciles. The Palma ratio divides the amount reported for the tenth decile by the sum of the lowest four deciles (Palma, 2011). When applied to our time series, we observe an increase in the first few years after the global financial crisis, followed by a continuous decline. A similar profile, albeit with a later peak, is found with the Gini coefficient, as computed based on the DWA (Figure A, panel b). In this case, significant heterogeneity can be seen across countries, with some reporting increases in the Gini coefficient (such as France, Finland and Italy).[8] Finally, the coefficient of variation is the ratio between the standard deviation and the average of the variable. When this was applied to our outstanding amount of net wealth across deciles, we likewise observed an initial increase (in this case, longer than with the Palma ratio), followed by a decline and a degree of stabilisation since 2020.

6 Using changes in net wealth as equivalent to income would create major methodological issues (for example, given that some periods show negative changes in net wealth).

7 In the case of the Palma ratio and the coefficient of variation, high values are directly linked to low values in their denominator, which would be the result of low net wealth in the lower deciles in both cases. With the Palma ratio, when the net wealth of the lower deciles is negative or very close to zero, the resulting values pose methodological challenges and hinder potential cross-country comparisons. Furthermore, it may not give a comprehensive overview of inequality given that it does not consider all the deciles. For a broader discussion of the properties of the Palma ratio in measuring inequality, see Cobham and Summer (2014).

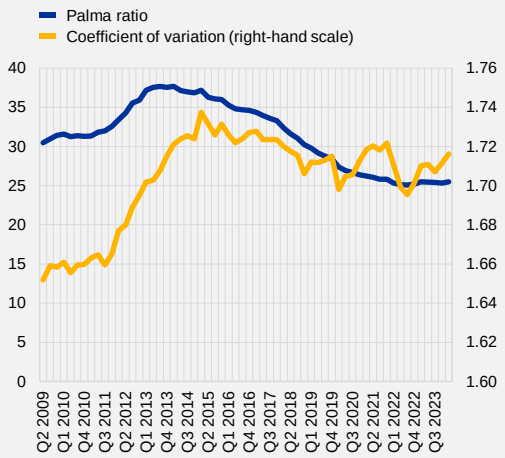
8 Data on the Gini coefficient by country is available on the **ECB Data Portal**.

Figure A

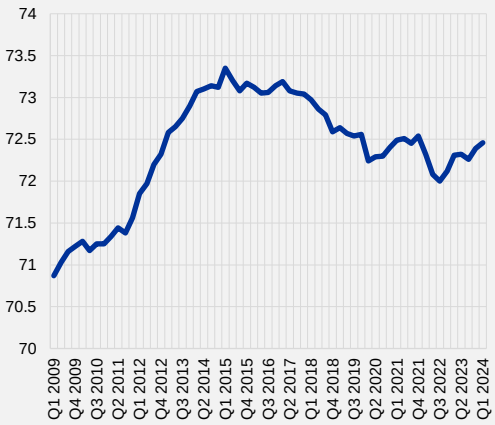
Measures of wealth inequality for euro area households according to net worth

(percentages)

a) Palma ratio and coefficient of variation



b) Gini coefficient



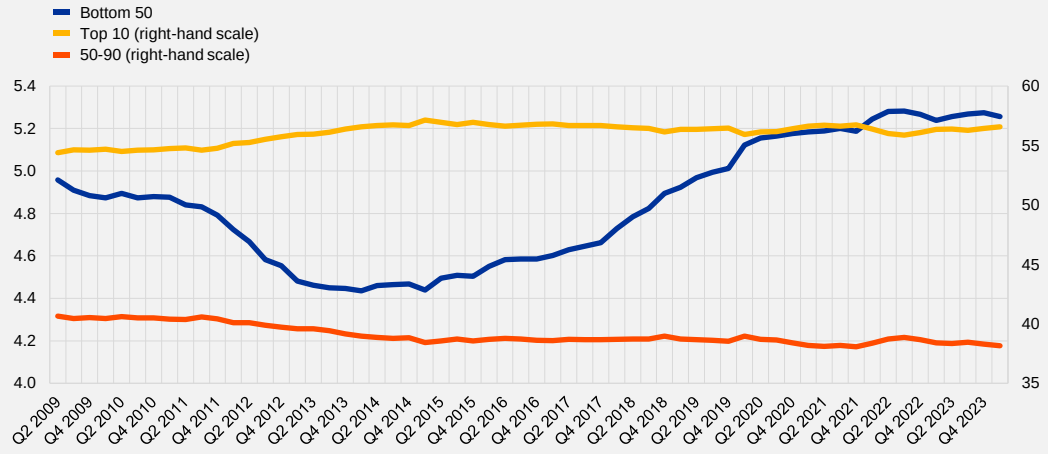
Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: The Palma ratio is the amount reported for the ninth decile divided by the sum of the lowest four deciles. The coefficient of variation is the ratio between the standard deviation and the average of net wealth across deciles. The Gini coefficient measures the inequality among the values of a frequency distribution, using the Lorenz curve. A Gini coefficient of 0 implies perfect equality, while a Gini coefficient of 100 reflects maximal inequality.

Looking at the share of net worth of those at the bottom and at the top of the distribution, wealth inequality does not seem to have increased in the euro area since 2015. Figure B shows the share of household total net worth of the bottom 50% of the euro area population, of the population between 50% and 90% and of the top 10%. The share of the bottom 50% has increased since 2014, while the share of the top 10% has decreased slightly from its peak in 2013. In the case of those in the middle of the distribution, the decrease is more visible since the first observation in the second quarter of 2009. The time series point towards a small decrease in wealth inequality in the euro area, in line with recent studies on this topic (Blanchet et al., 2019; Engel et al., 2022; World Inequality Lab, 2022).

Figure B

Share of net worth for euro area households by decile

(percentages)



Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Bottom 50 represents the share of net worth of the bottom five deciles and Top 10 the share of net worth of the top decile.

Based on the holdings of financial assets, the two highest deciles are the largest owners of real estate in the euro area, the largest depositors with euro area banks and the second largest investors in investment funds. Households in the ninth and tenth deciles own around €24 trillion in real estate, making them the largest owners of real estate in the euro area. Their combined holdings in investment fund shares amount to €2.7 trillion, just behind those of the rest of the world and exceeding those of insurance corporations (€2.5 trillion) and investment funds themselves (€2.5 trillion). These households also hold around €1.3 trillion in listed equity, ranking them slightly behind the rest of the world and banks. Turning to bank deposits, their combined deposits of €5.6 trillion exceed those of non-financial corporations (€3.6 trillion), other households (€3.8 trillion), rest of the world (€3.7 trillion) and investment funds (€0.9 trillion).

2.2 Balance sheet structure for the euro area household sector by decile

The structure of the balance sheet for the household sector differs according to wealth, with less wealthy households being more indebted and holding fewer financial assets. Figure 4 shows the main items on the household balance sheet, broken down in deciles according to their wealth. Looking at the asset side of the balance sheet, real estate (i.e. housing) is the main item across all deciles. It tends to be smaller in relative terms at both tails of the wealth distribution and higher for the central deciles. With the exception of deposits, financial instruments (listed and unlisted shares, debt securities and investment fund shares) play a marginal role in the balance sheet of the lower and central deciles. Deposits tend to be the main financial instrument of the lower deciles, and their relative importance decreases as households move upwards in the

distribution. On the liabilities side, net wealth is the main component across all the deciles other than the first and the second. Higher deciles have less loans than lower deciles. In other words, households in the lower deciles are more leveraged than those in the upper part of the distribution.

Figure 4

Balance sheet structure for euro area households by decile, Q1 2024

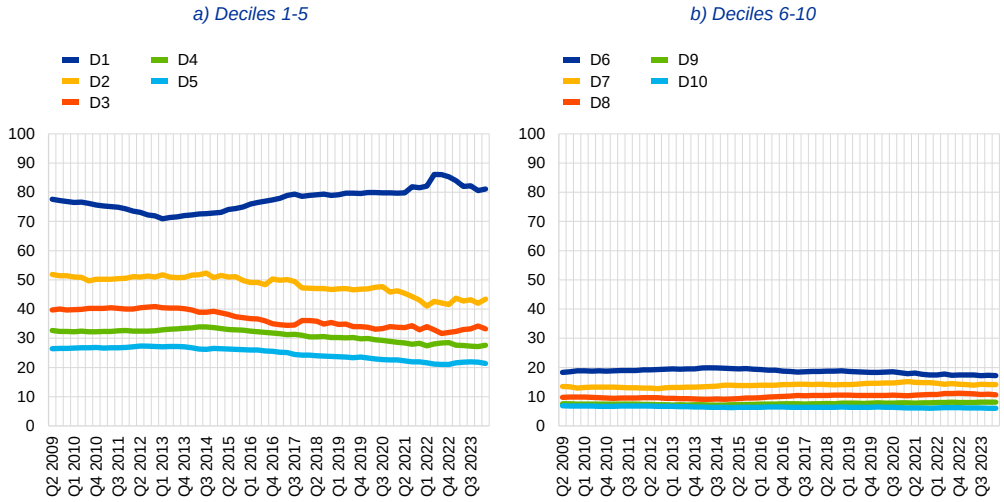
(percentages)

Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: D stands for decile. Decile 1 refers to the lowest decile according to wealth and Decile 10 to the highest.

Looking at leverage over time, a slightly declining trend for poorer households can be seen and an upward trend for the wealthiest. Figure 5 shows the evolution of the ratio of loans (i.e. debt) to total assets, which measures the leverage of the different households in the aggregate. A decrease for the second, third, fourth, fifth and sixth deciles has been observed since 2009. This contrasts with the rising trend for the first, seventh, eighth and ninth deciles. The leverage of the tenth decile has remained broadly unchanged.

Figure 5
Leverage of euro area households by decile

(percentages)



Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Leverage is defined as the ratio of loans on the liabilities side of the household balance sheet divided by total assets. D stands for decile. D1 refers to the lowest decile according to wealth and D10 to the highest.

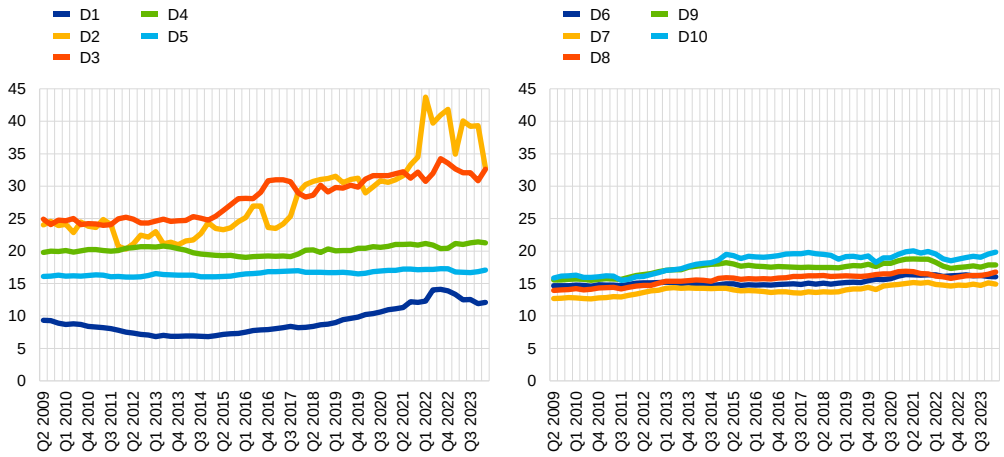
Turning to levels of leverage, the poorest euro area households are among the most leveraged sectors in the euro area. The aggregated level of leverage for the household sector is broadly determined by the deciles at the top of the distribution and may provide a benign picture of the sector as a whole. However, looking at the lower deciles in the distribution, these would be among the most leveraged sectors in the euro area across deciles, signalling the existence of large vulnerabilities in the sector as a whole.

The liquidity position of euro area households has remained relatively stable over time, with limited variation across deciles. Figure 6 shows holdings of liquid assets (deposits, investment fund shares and listed equity) as a share of total assets, by decile. With the exception of the first, second and third deciles, the liquidity position of euro area households has remained broadly stable, standing at around 15-20% of total assets. The second and third deciles tend to have a higher share of deposits than the other deciles (see also Figure 4), which would explain the higher values of the ratio shown in Figure 6.

Figure 6

Liquidity of euro area households by decile

(percentages)



Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Each line represents the holdings of deposits, investment fund shares and listed equity over total assets. D stands for decile. D1 refers to the lowest decile according to wealth and D10 to the highest.

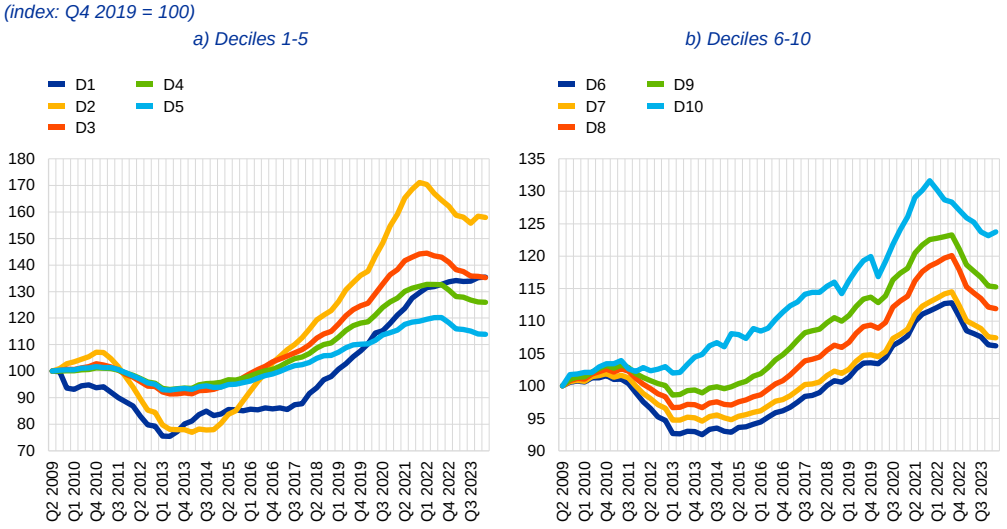
2.3 Households during episodes of financial stress

Starting with the balance sheet structure, it can be seen that euro area households' net worth has changed trajectory since 2009. Figure 7 shows the net worth of the ten deciles in the DWA, with the first observation (i.e. the second quarter of 2009) equal to 100. In general, we observe a decrease in net wealth in the years of the sovereign debt crisis, followed by a steep increase between 2014 and 2021. Interestingly, the COVID-19 pandemic did not disrupt this positive trend. After peaking around 2022, net worth has decreased for all deciles, probably reflecting the macroeconomic environment of low growth, higher interest rates and high inflation. Across deciles, those at the bottom (D1, D2 and D3) are those who have performed the best since 2010. Although they experienced a sharp decline in their net worth in the first few years of the data series, losing up to 30%, their net worth subsequently increased substantially in the low-interest rate environment. This may just reflect an initial generalised increase in the market value of real estate followed by a fall in the market value of real estate since 2022 coupled with a slight decline in financial liabilities (i.e. loans) due to higher interest rates. Conversely, the deciles in the medium of the distribution (D5, D6, D7 and D8) have been the worst performers given that their net worth also declined in the first few years observed but they did not benefit substantially from the low-interest rate environment.

Figure 7

Net worth of euro area households by decile

(index: Q4 2019 = 100)



Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Data are deflated with the GDP deflator for the euro area. D stands for decile. D1 refers to the lowest decile according to wealth and D10 to the highest.

It is possible to look at the impact of recent episodes of financial stress across the household sector, although with some limitations owing to data availability. As regards the periods of financial stress examined in Andersen and Sánchez Serrano (2024), data availability constraints meant that we were only able to look at five in our analysis: the outbreak of the COVID-19 pandemic (first quarter of 2020), the most acute phase of the sovereign debt crisis (fourth quarter of 2010), the taper tantrum in the United States (second quarter of 2013),[9] the Brexit referendum (second quarter of 2016) and the start of the war in Ukraine (first quarter of 2022). We could only compare the outstanding values between two periods given that no breakdown between changes in prices and financial transactions is available. As a result, changes between two periods are the sum of financial transactions and changes in prices.

In general, few of the episodes of financial stress examined led directly to a decline in net worth or in the total assets of households. Panel a of Figure 8 shows the relative changes in net worth in the five episodes of financial stress considered in this analysis, while panel b presents the change in total assets. In both cases, there were few negative growth rates, and those that arose seemed to be concentrated in the first two deciles.[10] The only exception of note was the outbreak of the COVID-19 pandemic for the highest decile. Looking at the episodes themselves, the peak of the sovereign debt crisis did not appear to have any negative impact on households (although, as we

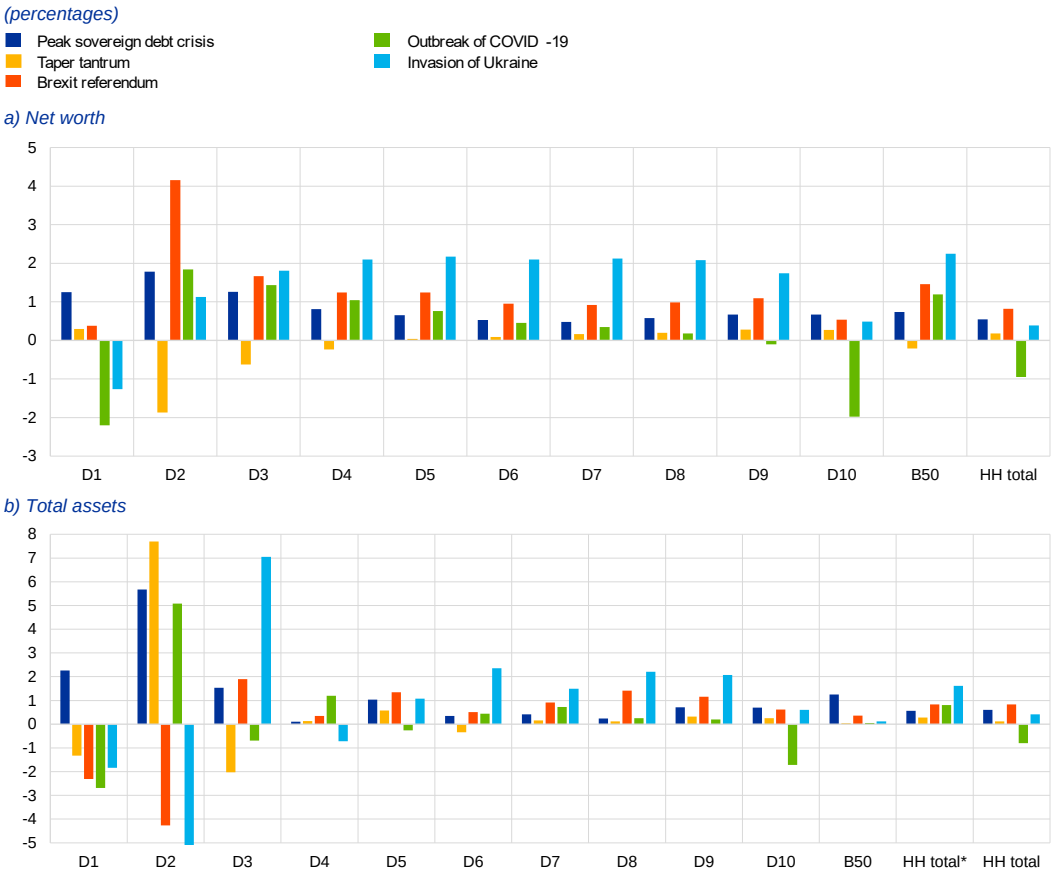
[9] The taper tantrum refers to the surge in US Treasury rates in June 2013. Following a flow of positive economic news in the early months of 2013, the Fed planned to moderate the pace of its asset purchases. In response to this news, investors began selling their bonds, thereby increasing bond yields. There were also strong movements in exchange rates and, in general, increased volatility in financial markets.

[10] These large variations in the first two deciles may simply be a statistical issue related to how DWA are compiled. For this reason, Figure 8 also displays the aggregate for the lowest five deciles.

have seen above, it had a negative impact over several quarters), while the taper tantrum and the Brexit referendum affected only the lowest three deciles.

Figure 8

Relative changes in net worth and total assets of euro area households during episodes of financial stress, by decile



Sources: Distributional Wealth Accounts (ECB) and author's calculations.
Notes: Relative changes in net worth (panel a) and total assets (panel b) in the fourth quarter of 2010 (peak of the sovereign debt crisis), the second quarter of 2013 (taper tantrum), the second quarter of 2016 (Brexit referendum), the first quarter of 2020 (outbreak of COVID-19 pandemic) and the first quarter of 2022 (Russian invasion of Ukraine). D stands for decile. D1 refers to the lowest decile according to wealth and D10 to the highest. B50 is the aggregation of the five lowest deciles and the HH (households) total is taken from the euro areas quarterly sectoral accounts. In the case of total assets, the HH total only computes transactions.*

This behaviour seems to align with the observations for the aggregate for the household sector and suggests that households are relatively resilient to the initial shock caused by episodes of financial stress and that they are not always negatively affected. Households may, however, also be impacted by episodes of financial stress over longer time periods. The net worth of households declined in the quarters following the peak of the sovereign debt crisis and also after the start of the Russian invasion of Ukraine, although it would appear that the second was linked more to the period of inflation, higher interest rates and low growth that ensued. This analysis, although partial because we do not have data on financial transactions, does not conflict

with the results in Andersen and Sánchez Serrano (2024), who find that the household sector does not react sharply to episodes of financial stress, unlike other sectors such as money market funds. We also find that negative reactions by households to episodes of financial stress are concentrated in the lower and higher deciles.

3 Breakdown of the other financial institutions sector

In the aggregate, the sector of other financial institutions includes a wide range of business models and seems to be closely linked to non-financial corporations. Andersen and Sánchez Serrano (2024) report several close links between other financial institutions and non-financial corporations, particularly regarding unlisted shares and loans. At first sight, these institutions would play an important role in funding the real economy, complementing the activities carried out by banks in the provision of credit. There is, however, considerable heterogeneity within the other financial institutions sector given that it encompasses institutions with different business models. Table 1 shows the main financial institutions included in the aggregate for other financial institutions.

Table 1
Composition of other financial institutions sector

Other financial intermediaries	
Financial vehicle corporations engaged in securitisation transactions (FVCs)	Special purpose entities (SPEs) created to purchase assets, such as a portfolio of loans, from the original holder.
Securities and derivatives dealers	Securities and derivative dealers acquiring assets and incurring liabilities on their own account (as opposed to securities brokers, which are financial auxiliaries).
Financial corporations engaged in lending	For example, financial corporations engaged in financial leasing, hire purchase, factoring and the provision of personal or commercial finance.
Specialised financial corporations	For example, venture and development capital companies, export/import financing companies, financial intermediaries that acquire deposits or loans vis-à-vis monetary financial institutions only and central clearing counterparties.
Financial auxiliaries	For example, securities brokers, corporations that manage the issuance of securities, corporations providing infrastructure to financial markets, head offices of groups of financial corporations.
Captive financial institutions and money lenders	For example, trusts holding companies, SPEs that qualify as institutional units and raise funds in open markets to be used by their parent corporations, corporations engaged in lending from funds received from a sponsor.

*Source: Box 1 of Article 1 of the **Economic Bulletin**, European Central Bank, Issue 4, 2016.*

The euro area quarterly sectoral accounts allow for a breakdown of other financial institutions into its components, although not from the who-to-whom perspective, and this is used in this section to gain a better understanding of how this sector relates to non-financial corporations. Since October 2022, other financial institutions have been broken down

into other financial intermediaries, financial auxiliaries, and capital financial institutions and money lenders. While some of the granularity of the main aggregate (in terms, for example, of the counterparties of debt securities) is lost, the available data can be used to more clearly determine the types of other financial institutions that are closely linked to non-financial corporations. That, in turn, provides a clearer picture of the role of other financial institutions in the provision of financial services to the real economy. Since October 2024, the availability of data on debt securities issued by financial conduits (classified as captive financial institutions in Table 1) has been extended, revealing the extent to which financial conduits are used by non-financial corporations for their funding activities (European Central Bank, 2024a and 2024b).[11]

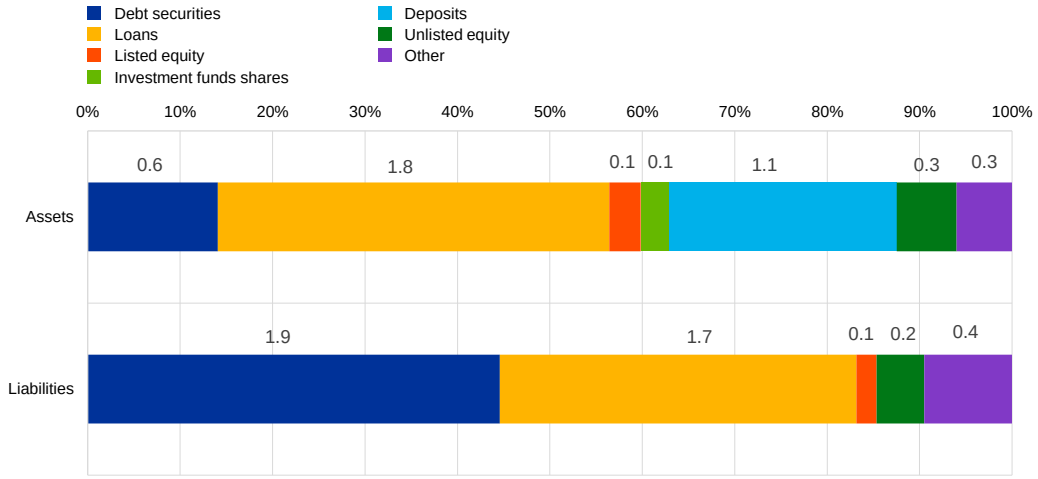
3.1 Balance sheet structure for the euro area other financial institutions sector by subsector

With regard to other financial intermediaries, they have debt securities and loans as their main assets and liabilities and seem to be highly leveraged (Figure 9). The quarterly sectoral accounts show that the main assets of other financial intermediaries are loans (€1.8 trillion), deposits (€1.1 trillion) and debt securities (€0.6 trillion). On the liabilities side, loans amount to €1.7 trillion and debt securities to €1.9 trillion. Together, they represent more than 80% of the balance sheet (€3.6 trillion out of a total balance sheet of €4.3 trillion), signalling a considerable degree of leverage. Other items on the balance sheet are of lesser importance.

Figure 9

Balance sheet for euro area other financial intermediaries, Q1 2024

(EUR trillions and %)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Notes: The total assets and liabilities of the sector amounted to €4.3 trillion

[11] Financial conduits raise funds and remit those funds to their parent companies or to other related enterprises.

Using other datasets, it is possible to obtain a more granular view of debt securities and loans on the balance sheet for other financial intermediaries. As shown in Table 1, the aggregate for other financial intermediaries includes financial vehicle corporations engaged in securitisation transactions, financial corporations engaged in lending, securities and derivatives dealers, and specialised financial institutions.[12] The ESCB currently has separate datasets for financial vehicle corporations engaged in securitisation transactions and for financial corporations engaged in lending, and these can be used to produce a breakdown of the balance sheet items shown in Figure 9.

As shown in Figure 10, most of the lending by other financial intermediaries relates to securitisation transactions involving banks, while funding through debt securities accounts for most of the total for this subsector. The last observation for financial corporations engaged in lending was for the end of 2022. By combining this observation with those for financial vehicle corporations engaged in securitisation transactions, we can determine the extent to which these contribute to the total for other financial intermediaries. Loans (as assets) and debt securities (on both sides of the balance sheet) linked to securitisations explain a significant proportion of the amounts reported for the subsector.[13] It is worth noting that loans linked to securitisation transactions mostly have banks as counterparties, the proportion for non-financial corporations being minimal. Finally, around €0.9 trillion in deposits as assets and €1.5 trillion in loans as liabilities remain unattributed to either financial vehicle corporations engaged in securitisation transactions or financial corporations engaged in lending.

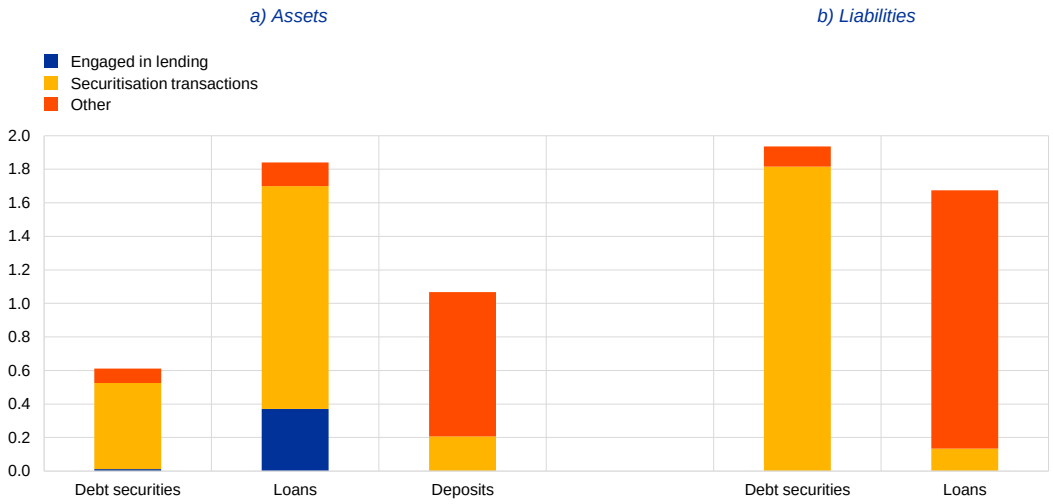
[12] Specialised financial corporations performing the tasks of investment banks may also invest their own funds in private equity, in hedge funds dedicated to venture capital and in collateralised lending (United Nations and European Central Bank, 2015). Private equity funds should, in principle, be classified as investment funds.

[13] In a securitisation transaction, the financial vehicle issues debt securities that are backed by securitised assets, usually in the form of loans on its balance sheet. For further details, please refer to Eurostat (2013). For an overview of EU securitisation markets, please see European Systemic Risk Board (2022).

Figure 10

Main balance sheet items for euro area other financial intermediaries by activity, Q1 2024

(EUR trillions)



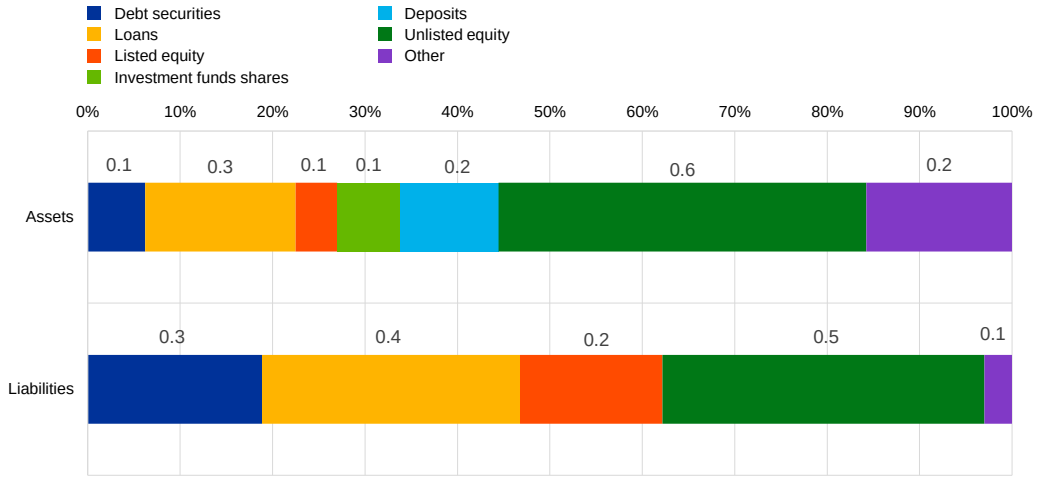
Sources: Quarterly Sectoral Accounts, Financial Vehicle Corporations Engaged in Securitisation Transactions and Financial Corporations Engaged in Lending (ECB) and author's calculations.
Note: The data for the financial corporations engaged in lending subsector relate to the end of 2022.

Turning to financial auxiliaries, this subsector has a relatively small balance sheet in which unlisted equity and loans dominate (Figure 11). The total balance sheet for financial auxiliaries, which includes specialised business models such as securities brokers and corporations managing the issuance of securities or financial markets, rose to €1.6 trillion in the first quarter of 2024, representing 7% of the total for other financial institutions. The structure of the balance sheet is dominated by unlisted shares, with €0.6 trillion in assets and €0.5 trillion in liabilities. Loans are the second major item on the balance sheet, with €0.3 trillion in assets and €0.4 trillion in liabilities.

Figure 11

Balance sheet for euro area financial auxiliaries, Q1 2024

(EUR trillions and %)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Notes: The total assets and liabilities of the sector amounted to €1.6 trillion.

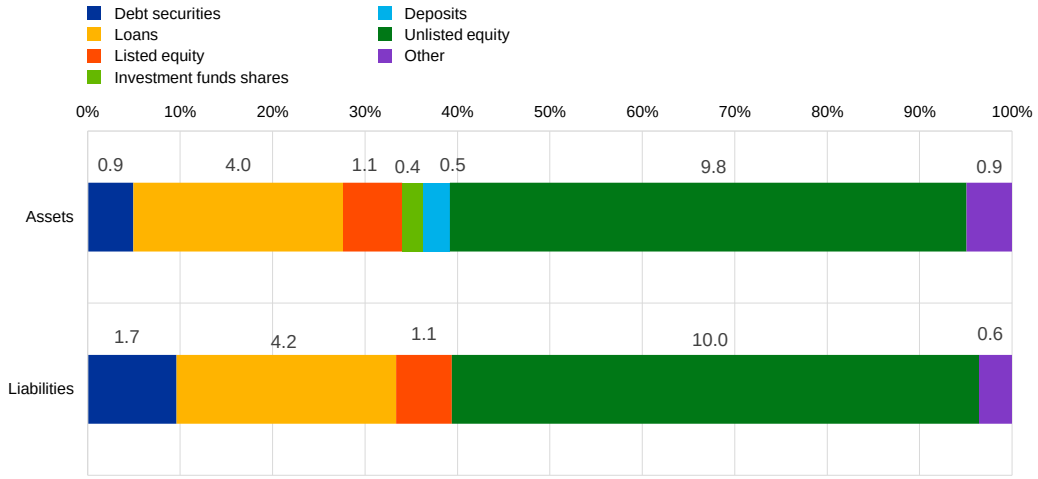
Captive financial institutions and money lenders represent 75% of the balance sheet for other financial institutions, with unlisted shares being the main item on both sides of the balance sheet. As shown in Figure 12, of a total balance sheet of €17.6 trillion, unlisted shares account for €9.8 trillion and €10 trillion on the assets and liabilities sides respectively. The second largest item is loans, with €4 trillion shown as assets and €4.2 trillion as liabilities. As pointed out in Andersen and Sánchez Serrano (2024), there are very large links between non-financial corporations and other financial institutions through unlisted shares and through loans. This may suggest that the underlying institutions belong to the same corporate group. On the asset side of the balance sheet, the large amount of unlisted shares may relate to holding companies that own the unlisted equity of their subsidiaries (these subsidiaries usually being classified into the non-financial corporations sector). The mechanism for captive financial institutions is a bit more complex. The unlisted shares on the liabilities side of the balance sheet (Figure 12) are generally owned by a parent non-financial corporation. The captive financial institution would then issue debt securities or get a loan from a bank (liabilities in Figure 12), which would be transferred to the parent non-financial corporation or to other entities within the same group, normally in the form of a loan (assets in Figure 12).[14] Box 2 discusses in detail how to estimate intragroup lending exposures exploiting data from the quarterly sectoral accounts.

[14] Any such transfer would not necessarily need to match the transaction on the liabilities side in terms of the amount or financial instrument used.

Figure 12

Balance sheet for euro area captive financial institutions and money lenders, Q1 2024

(EUR trillions and %)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Notes: The total assets and liabilities of the sector amounted to €17.6 trillion.

Box 2
Estimating intragroup lending to non-financial corporations

Excluding intragroup lending transactions of non-financial corporations is important to get an accurate picture not only of the main lending sources for each sector but also of systemic risk. Even if intragroup transactions may lead to the materialisation of systemic risk in some circumstances (Allen et al., 2013; Chatain et al., 2023), these transactions should ideally be excluded to make it possible, for instance, to assess interconnections across sectors of the economy, given that these transactions ultimately relate to the same legal entity, or to analyse lending patterns, given that these transactions are not a transfer of funds between unrelated parties.[15] This is particularly relevant when considering lending to households and non-financial corporations, given that the failure of a borrower could generate large losses for the lender and threaten its solvency position. While, by definition, there cannot be intragroup lending in the household sector, complex structures in non-financial corporations generally lead to significant intragroup lending, which may distort overall assessment of systemic risk if not properly accounted for. Gertner et al. (1994) discuss in detail the implications of intragroup lending (internal capital markets) in comparison with external capital markets, while Desai et al. (2005) take a detailed look at multinational corporations.[16]

Although most of the time series for the euro area quarterly sectoral accounts are reported on an unconsolidated basis, thereby including transactions and outstanding amounts

15 See Appendix 1 in Haut Conseil de Stabilité Financière (2017) for a description of current practices in the determination of intragroup lending for the purpose of analysing systemic risks arising from corporate indebtedness.

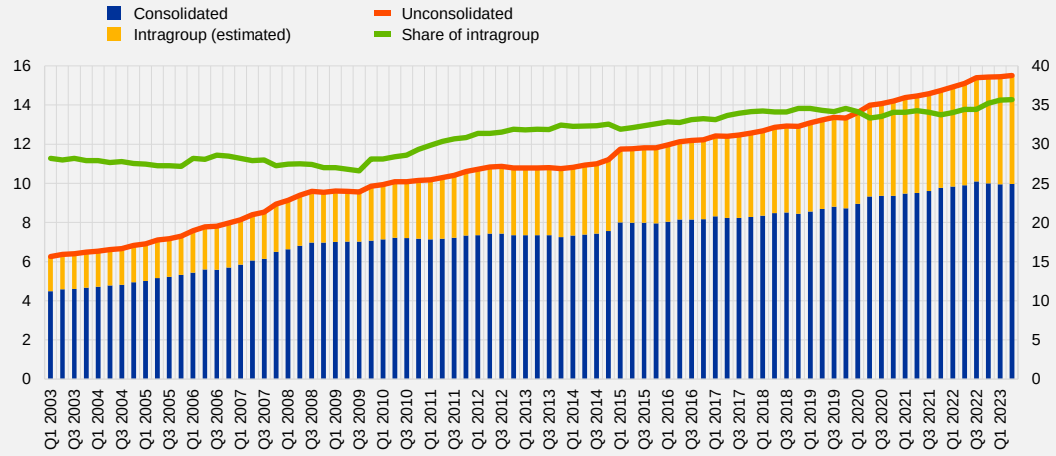
16 For further details on the topic, see Grau-Vera and Sogorb-Mira (2024) and the references therein.

between institutions belonging to the same group, it is possible to make a rough estimation of intragroup transactions. The euro area quarterly sectoral accounts have limited data on a consolidated basis. One of the existing time series refers to loans and debt securities on the liabilities side of the balance sheet for non-financial corporations. These are shown in the blue bars in Figure C. Debt securities issued by non-financial corporations and loans granted by all sectors to non-financial corporations can then be computed on a non-consolidated basis from the who-to-whom accounts. This is indicated by the red line in Figure C. The estimated amount for intragroup loans and debt securities is the difference between the consolidated and the unconsolidated amounts, represented by the yellow bars in Figure C. In relative terms, estimated intragroup exposures represent around 35% of the loans and debt securities on the balance sheet for non-financial corporations (€5.8 trillion in the third quarter of 2024), reflecting an increasing trend since 2009.[17] However, as noted by Hertkorn (2015), there is significant cross-country variation in the euro area, with non-financial corporations from countries such as Luxembourg and Belgium reporting higher intragroup debt than debt with third parties.

Figure C

Consolidated and unconsolidated loans and debt securities of euro area non-financial corporations

(left-hand scale: EUR trillions; right-hand scale: percentages)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Notes: Intragroup exposures are computed as the difference between the non-consolidated exposures and the consolidated exposures. Share of intragroup exposures refers to the total non-consolidated exposures.

In allocating these intragroup exposures across sectors, other financial institutions and non-financial corporations would seem to be the most relevant. Once the amount of intragroup loans and debt securities has been estimated (€5.8 trillion in the third quarter of 2024), the next step would be to allocate them across sectors. Unfortunately, there is no data available to do so and we can only make certain assumptions. Based on the quarterly sectoral accounts, it would seem that loans and debt securities on the liabilities side of the non-financial corporations balance

[17] Using data from the financial statements of non-financial corporations, intragroup lending in Germany increased between 2010 and 2015 (Deutsche Bundesbank, 2018), while in Spain it rose from 11% to 14% between 2018 and 2023, according to the Central Balance Sheet Data Office of Banco de España (Banco de España, 2024).

sheet can come from non-financial corporations, investment funds, banks, other financial institutions, insurance corporations and pension funds, rest of the world, and households. By definition, households cannot be part of a group, and the amounts reported for investment funds, government, and insurance corporations and pension funds are very low (less than 2% of the total). Plausibly, it can therefore be assumed that entities reporting under the other three sectors (i.e., non-financial corporations, banks and other financial institutions) are often part of a group headed by a non-financial corporation. On that ground and given the large amounts of unlisted shares recognised on their balance sheets, other financial institutions (and, in particular, captive financial institutions) and non-financial corporations would be the two sectors where, a priori, most of the intragroup exposures could be expected to reside and this may be an indication of cross-sectoral ownership relationships.[18] However, we cannot fully exclude some intragroup lending exposures going through the rest of the world (in the case, for instance, of a non-financial corporation raising funding in a euro area country while its headquarters are located outside the euro area) or going to banks. In the case of banks, as seen in Section 3.1, around €1.5 trillion in loans with banks relates to securitisation transactions that do not involve non-financial corporations. Finally, the ECB recently estimated, based on holdings of debt securities, that loans associated with financial conduits amount to €0.9 trillion.

The main counterparties of loans from captive financial institutions and money lenders would seem to be the rest of the world and non-financial corporations. Understanding the counterparties of the lending activities of captive financial institutions and money lenders is crucial for assessing the contribution of other financial institutions to the funding of the real economy. According to the data gathered in Andersen and Sánchez Serrano (2024), 35% of the loans granted by other financial institutions have rest of the world as their counterpart, with 23% of the counterparties themselves being banks, 22% non-financial corporations and 9% households (with 11% being unallocated). Applying these percentages to the data for the first quarter of 2024 (€6.1 trillion), gives a figure of €2.1 trillion with the rest of the world, €1.4 trillion with banks, €1.4 trillion with non-financial corporations and €0.6 trillion with households. Securitisation transactions mainly involve euro area banks (€1.2 trillion), implying that the main counterparties of loans from captive financial institutions and money lenders are the rest of the world and non-financial corporations.

3.2 Other financial institutions during episodes of financial stress

We now consider how other financial intermediaries, financial auxiliaries, and captive financial institutions and money lenders navigated through the Brexit referendum (second quarter of 2016), the outbreak of the COVID-19 pandemic (first quarter of 2020) and the start of the war in Ukraine (first quarter of 2022). Given that the data series for these subsectors start in the fourth quarter of 2013, we could not cover all the events examined in Andersen and Sánchez

[18] However, in the absence of who-to-whom data on unlisted shares, it is not possible to obtain an accurate view of which sector is holding the unlisted shares that appear on the balance sheet for captive financial institutions and non-financial corporations.

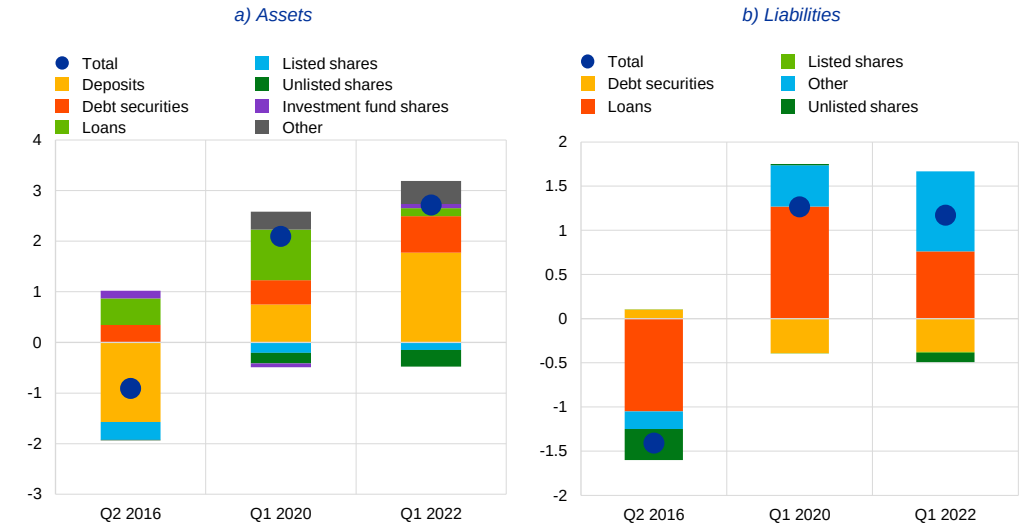
Serrano (2024). We looked at how each group of institutions performed across all three episodes, rather than going episode by episode.

Other financial intermediaries tend to decrease their equity holdings during periods of stress and to reduce funding through debt securities, but, in the aggregate, have positive financial transactions. Figure 13 shows financial transactions in each quarter divided by the total assets in the previous quarter. Looking first at the asset side of the balance sheet, other financial intermediaries sold around 4% of their equity (particularly, listed shares) across the three periods concerned. Given the low weight of equity in their balance sheet, these transactions represented around 0.4% of total assets. Negative financial transactions with equity persisted for several quarters, but never reached large amounts in terms of the sector's total balance sheet size. Looking at the liabilities side, there were no large negative transactions, other than in the second quarter of 2016 when loans resulted in a 1% decline in total assets. Overall, other financial intermediaries reported positive financial transactions over the three stress periods. Looking at the main items on their balance sheet (loans and deposits under assets, and debt securities and deposits under liabilities), there were limited negative transactions, with the exception of a decline in deposits of more than 5% (1.6% of total assets) during Brexit.

Figure 13

Financial transactions involving assets and liabilities of euro area other financial intermediaries during episodes of financial stress

(percentages)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Note: Financial transactions as a share of total assets in the same period.

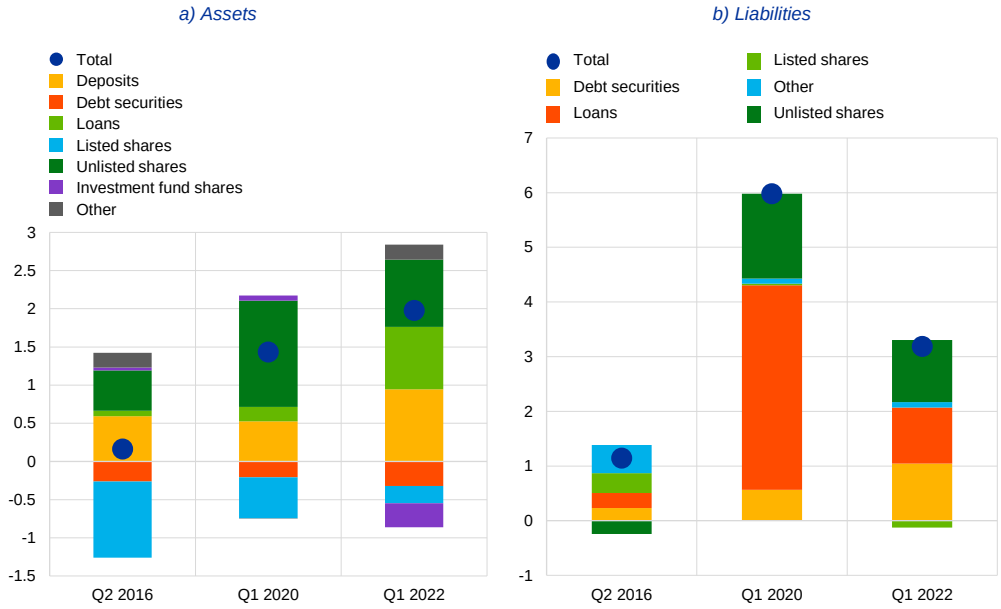
Financial transactions of financial auxiliaries were positive in the three stress periods examined, with notable positive financial transactions at the outbreak of the COVID-19 pandemic and at the start of the war in Ukraine (Figure 14). There are two important factors to consider here. First, the total balance sheet for financial auxiliaries (€1.5 trillion) is small as compared with other sectors. Second, negative financial transactions related to assets and

liabilities in this subsector are not frequent.[19] It can be seen, from Figure 14, that there were negative financial transactions with debt securities reported under assets over the three stress periods. In absolute terms, these negative financial transactions amounted to between €2 billion and €4 billion and were more than offset by positive financial transactions under deposits. They might simply reflect an adjustment in the risk appetite of financial auxiliaries in times of stress and lack the size to have deep impact on financial markets on their own. Moving to the liabilities side of the balance sheet, there were substantial positive financial transactions under loans, equity and, to a lesser extent, debt securities in the first quarter of 2020 and in the second quarter of 2022. They seemed to be connected with the overall growth of the aggregated balance sheet for the sector as a whole.

Figure 14

Financial transactions involving assets and liabilities of euro area financial auxiliaries during episodes of financial stress

(percentages)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Note: Financial transactions as a share of total assets in the same period.

With regard to captive financial institutions and money lenders, while their financial transactions were relatively small over the three episodes considered, the size of their balance sheet makes them substantial in absolute terms for some selected balance sheet items. As seen in Figure 15, financial transactions reported under the balance sheet items for captive financial institutions and money lenders were relatively small (less than 1% of total assets) over the three episodes of financial stress under consideration. Also of note were the large negative financial transactions reported under equity (mainly, unlisted shares) at the outbreak of the COVID-

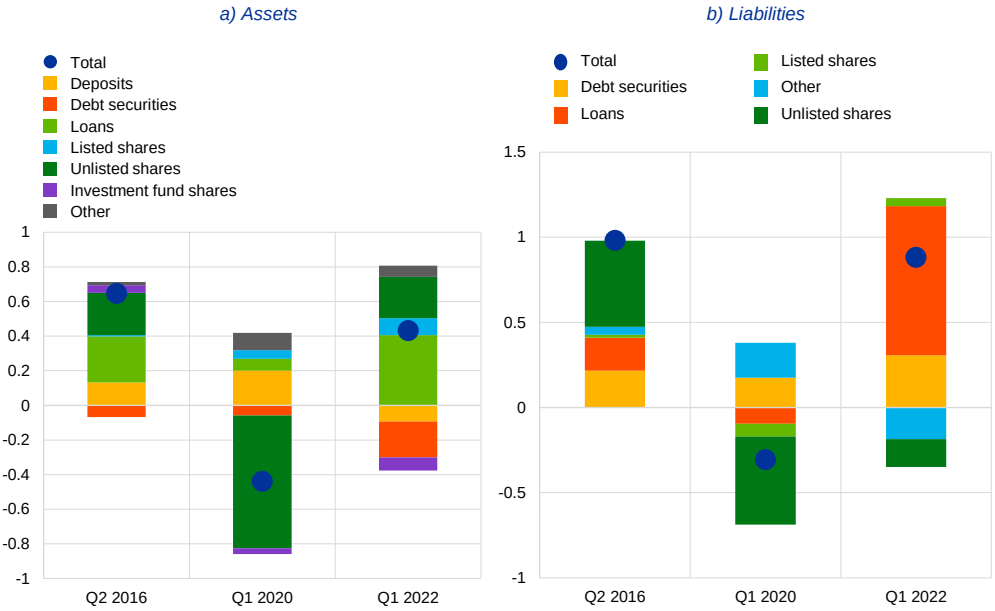
[19] For example, of the 42 observations for financial transactions relating to total assets and to total liabilities, there are only five and nine negative values respectively. The other financial intermediaries sector reported 16 and 19 negative transactions respectively over the same period.

19 pandemic, with both assets and liabilities amounting to more than €100 billion. The fact that most of these equity instruments were unlisted shares and most likely exchanged between entities belonging to the same group, mitigated their impact on the euro area financial system as a whole. Given the important connections between captive financial institutions and non-financial corporations through lending, it is important to look at financial transactions reported under loans on both sides of the balance sheet. In general, there were no negative financial transactions reported over the stress episodes considered, other than loans on the liabilities side (loans granted by non-financial corporations to captive financial institutions) at the outbreak of the COVID-19 pandemic when negative financial transactions amounted to €16 billion.

Figure 15

Financial transactions involving assets and liabilities of euro area captive financial institutions and money lenders during episodes of financial stress

(percentages)



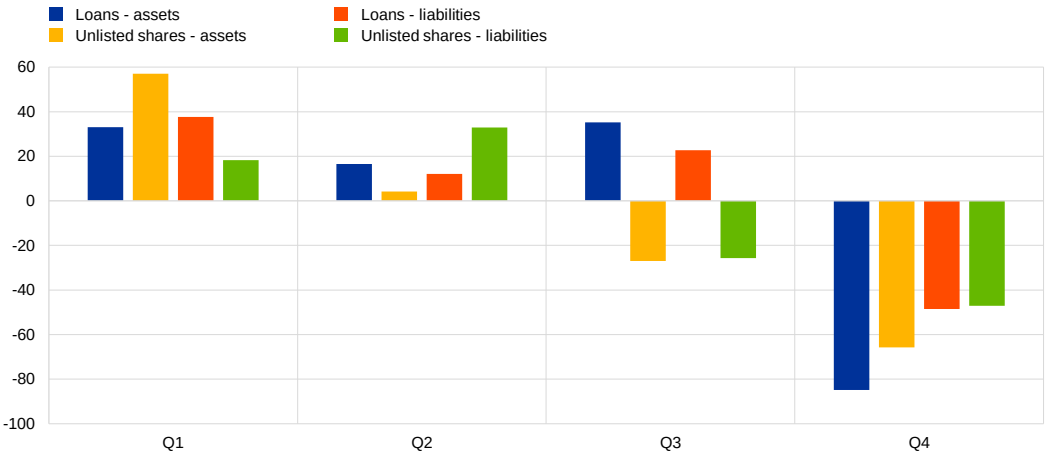
Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.
Note: Financial transactions as a share of total assets in the same period.

Leaving aside episodes of financial stress, financial transactions of captive financial institutions and money lenders show a strong seasonal component, particularly for unlisted shares and for loans. As shown in Figure 16, large negative financial transactions with loans and unlisted shares are typically reported on both sides of the balance sheet in the last quarter of each year. By contrast, in the first two quarters of the year, there tend to be large positive financial transactions (larger in the first quarter). In the third quarter, negative financial transactions in unlisted shares are generally reported, while loans show positive financial transactions. The seasonality in these transactions, which are most likely to be intragroup, may be linked to common practices in the corporate sector as regards intragroup financial flows.

Figure 16

Average for financial transactions by euro area captive financial institutions and money lenders in selected assets and liabilities by quarter, Q4 2013 - Q1 2024

(EUR billions)



Sources: Quarterly Sectoral Accounts (ECB) and author's calculations.

Overall, the three subsectors of other financial institutions do not seem to display concerning dynamics during periods of stress. No strong movements in financial transactions were found for other financial intermediaries, financial auxiliaries, and captive financial institutions and money lenders over the three periods of financial stress under consideration here (namely, Brexit, the outbreak of the COVID-19 pandemic and the start of the war in Ukraine). That is particularly important for the captive financial institutions and money lenders subsector, which is rather large and closely interconnected with non-financial corporations through loans and unlisted shares. While a strong seasonal component in financial transactions has been identified, this may reflect the usual course of business in multigroup corporations.

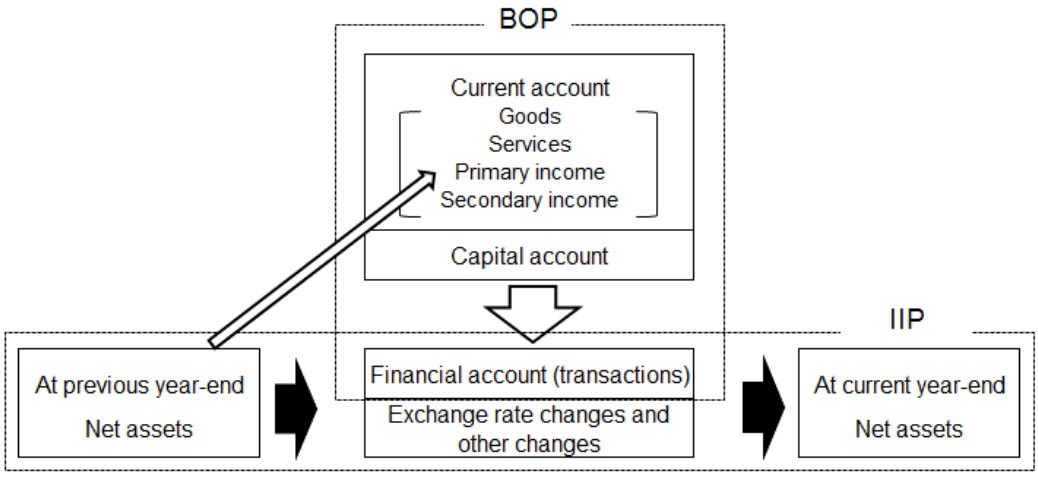
4 Data for the rest of the world by country

Using BOP and IIP data for the euro area, the aggregate for rest of the world can be broken down into the main countries with financial flows to and from the euro area. As indicated in Andersen and Sánchez Serrano (2024), the aggregate for rest of the world comprises a wide range of countries with diverse relationships with euro area countries. It is possible to use BOP and IIP data to measure the main financial assets and liabilities of euro area residents with countries outside the euro area on a country-by-country basis.

The BOP covers all economic transactions between residents of an economy and the rest of the world. It comprises three accounts: (i) the current account, which reports information on international trade in goods and services, primary income and secondary income; (ii) the capital account, which measures the acquisition of non-produced non-financial assets (for example, land) and capital transfers (capital taxes and investment grants); and (iii) the financial account, which shows transactions involving financial assets and liabilities between residents and non-residents (Figure 17). The financial account itself is made up of five components: (i) foreign direct investment (FDI), through which an investor gains control of or exerts a significant degree of influence over the management of a non-resident company; (ii) portfolio investment, through which investors cannot exert significant influence over the non-resident companies in which they invest; (iii) other investment (for example, through loans or trade credit); (iv) financial derivatives other than reserves, and employee stock options; and (v) reserve assets (for example, gold or currency). The first three components of the financial account are considered to be investments.

Figure 17

Structure of the balance of payments and the international investment position



*Source: **Bank of Japan**.*
Note: BOP stands for balance of payments and IIP for international investment position.

The methodologies for the quarterly sectoral accounts and for the BOP and IIP were harmonised with effect from 2014, resulting in limited inconsistencies between them. The provisions of the European System of Accounts 2010 (Eurostat, 2013), which serves as the basis for the preparation of the quarterly sectoral accounts, and of the 6th Edition of the Balance of Payments and International Investment Position Manual (BPM6) are aimed at ensuring comparability and consistency between the rest of the world sector in national accounts and in BOP statistics. Discrepancies are still possible, for example, as a result of the use of different data sources in the compilation of statistics or owing to different interpretations of the respective methodologies. Since 2015, Eurostat and the ECB have been analysing inconsistencies and discrepancies, based on annual quality reports, compiler surveys and regular monitoring exercises. In 2024, Eurostat found that the largest differences in the financial accounts, as a percentage of GDP, were reported by Malta, Luxembourg and Greece (Eurostat, 2024). In general, the BOP tends to report higher numbers for rest of the world in the financial accounts than in the quarterly sectoral accounts. Overall, however, the degree of comparability and consistency between the two statistical frameworks is rather high.

The BOP and IIP data available do not cover all the balance sheet items given in the quarterly sectoral accounts, although they do provide insights into the main countries with which the euro area interacts. In the BOP and IIP dataset, there is information, on a country-by-country basis, on FDI and portfolio investment in the form of equity and investment funds shares, as well as on debt securities. Other investment is not broken down further and it is therefore not possible to separate data on loans and deposits.

4.1 Main counterparts of the euro area

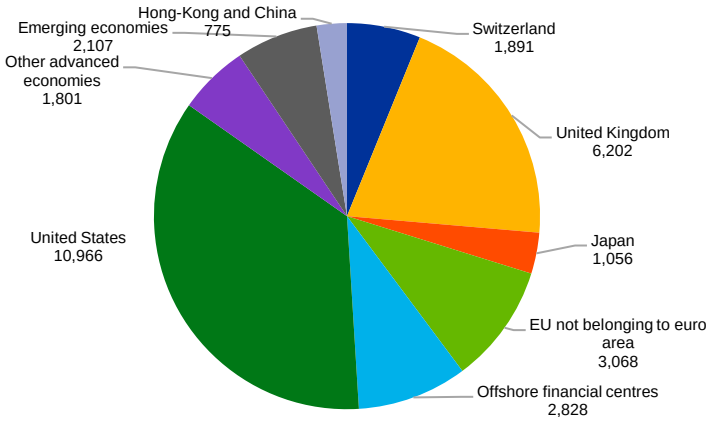
Looking at assets, the United States and the United Kingdom represent more than half of the financial assets of euro area residents with the rest of the world. Figure 18 shows the distribution of total assets with the rest of the world in the second quarter of 2024, including those held as FDI, as portfolio investment and as other investment. The total was around €31 trillion in that quarter, in line with the €32.4 trillion reported in Andersen and Sánchez Serrano (2024) for the rest of the world in the same quarter of the previous year. The main rest of the world counterparts were the United States, with €11 trillion, followed by the United Kingdom, with €6.2 trillion. Other EU countries not in the euro area came next, with €3 trillion, followed by offshore financial centres with €2.8 trillion.[20] Emerging economies, including Hong-Kong and China, combined amounted to €2.9 trillion.

[20] Offshore financial centres include jurisdictions such as Antigua and Barbuda, Bahamas, Curaçao, Cayman Islands, Guernsey, Gibraltar, Mauritius, Panama, the Seychelles and Vanuatu.

Figure 18

Total assets of euro area residents, by country of the counterparty, Q2 2024

(EUR billions)



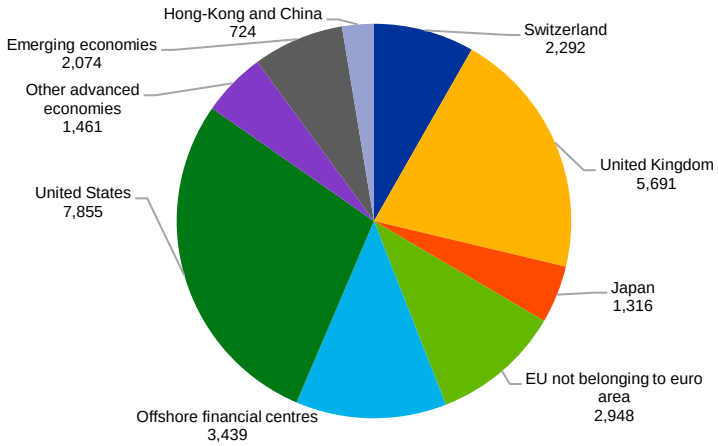
Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Assets with international jurisdictions and European institutions are not considered. The countries represented in the figure account for 93% of the total assets of euro area residents with the rest of the world. Other advanced economies comprise Australia, Canada, Republic of Korea and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

On the liabilities side, the United States was the main counterpart, although with lower exposures, while offshore financial centres had higher exposures than on the asset side (Figure 19). Financial liabilities of euro area residents with the rest of the world amounted to €27.8 trillion in the second quarter of 2024, according to the BOP and IIP data. Considering the main countries within the rest of the world sector, the United States continue to be the main counterpart, with €7.9 trillion, followed by the United Kingdom, with €5.7 trillion, and offshore financial centres, with €3.4 trillion.

Figure 19

Total liabilities of euro area residents, by country of the counterparty, Q2 2024

(EUR billions)



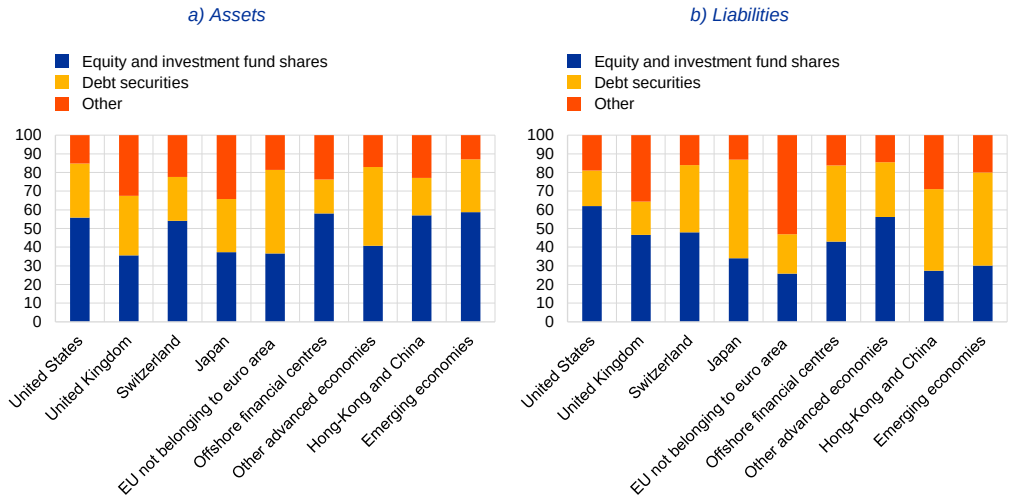
Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Liabilities with international jurisdictions and European institutions are not considered. The countries represented in the figure account for 93% of the total assets of euro area residents with the rest of the world. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

Looking at the relative composition of assets and liabilities, equity and investment fund shares are generally the main financial asset, while the picture is mixed as regards financial liabilities (Figure 20). Shares (including listed and unlisted equity) and investment fund shares are the principal financial asset through which euro area residents gain exposure to Switzerland, offshore financial centres, the United States, emerging economies, and Hong-Kong and China. Debt securities are the primary financial asset for exposures to EU countries not in the euro area and to other advanced economies. Turning to liabilities, equity and investment fund shares are the main liability of euro area residents with Switzerland, the United Kingdom, the United States and other advanced economies, while debt securities are the predominant liability in the cases of Japan, emerging economies, and Hong-Kong and China. For EU countries not in the euro area, the main liability comes in the form of other investment and probably relates to loans and deposits.

Figure 20

Composition of assets and liabilities of euro area residents with the rest of the world, by country

(percentages)



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

Financial assets and liabilities of euro area residents are mainly concentrated with the United States, primarily in the form of equity and investment fund shares. The prominent role of the United States in the world economy is shown by the large exposures of euro area residents to this country. Exposures to emerging economies, including Brazil, Russia, India and China, are not particularly large, at around €3 trillion for both assets and liabilities. In terms of instruments, equity and investment fund shares are the largest, with €15 trillion and €13 trillion in assets and liabilities respectively.

4.2 Financial assets and liabilities with the rest of the world over time

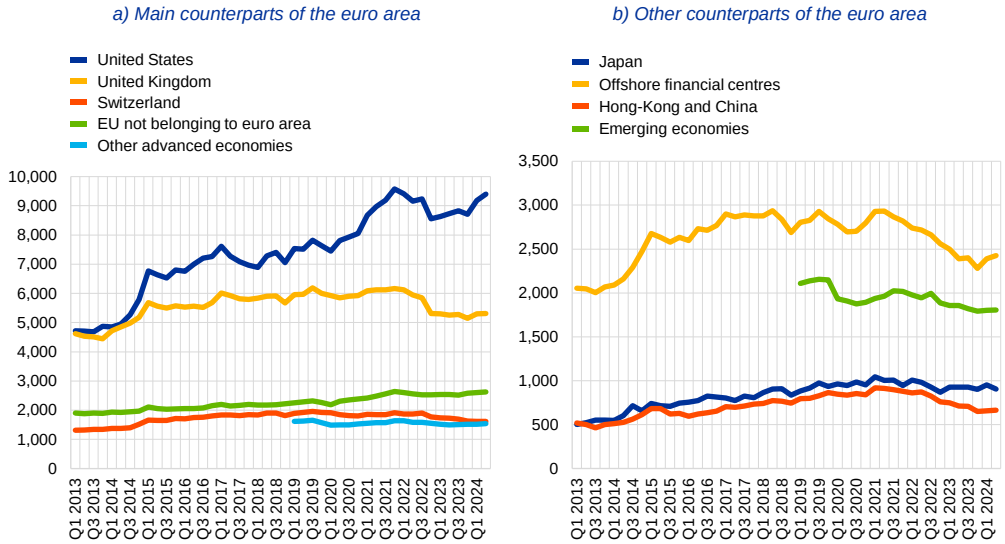
Since 2013, there has been a significant increase, in absolute terms, in the assets of euro area residents with US counterparties, while exposures to offshore financial centres, emerging economies, and Hong-Kong and China seem to be decreasing. Figure 21 shows the evolution of the total assets of euro area residents by country, deflated using the ECB GDP deflator. Given that assets are valued at market prices, changes in total assets may be the result of financial transactions (changes in volume) or of changes in prices (including the impact of

exchange rates).[21] Assets with the United States have almost doubled since 2013, rising from around €5 trillion to almost €10 trillion. More recently, there have been decreases in the asset holdings of euro area residents with Switzerland (they peaked around 2019), offshore financial centres (with a steady decline since 2021), Hong-Kong and China (declining since 2021) and emerging economies. Exposures to Japan, other advanced economies and EU countries not in the euro area have remained relatively stable in the last five years.

Figure 21

Evolution of total assets of euro area residents, by residence of the counterparty

(EUR billions)



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

Financial liabilities have shown a stable or declining trend, in absolute terms, for most countries over the last five years (Figure 22). Looking at the financial liabilities of euro area residents with the rest of the world, there have been generalised declines, including with the United States (which peaked in 2020), the United Kingdom (which peaked in 2022) and offshore financial centres (which peaked in 2016). This contrasts with the strong increase for financial assets located in the United States, which is the only time series with a clear positive trend.

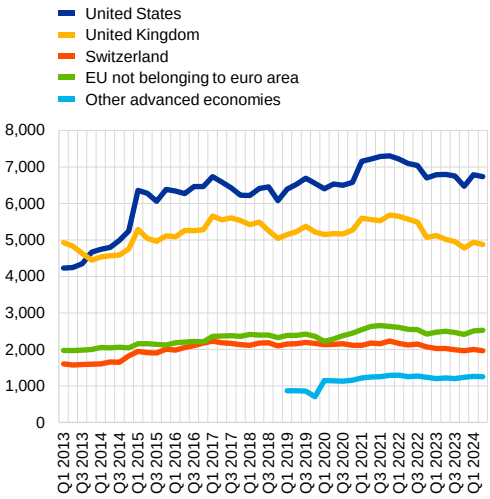
[21] Changes in prices (i.e. valuations) have played a significant role in the evolution of assets of euro area residents with the rest of the world since 2013. This is particularly relevant for equity. For example, the S&P 500 index have seen a revaluation of almost 400% between January 2013 and December 2024. In general, the impact of changes in prices on balance sheets and on related indicators over these years has not been trivial, as shown by Sánchez Serrano (2022) in terms of the leverage of non-financial corporations.

Figure 22

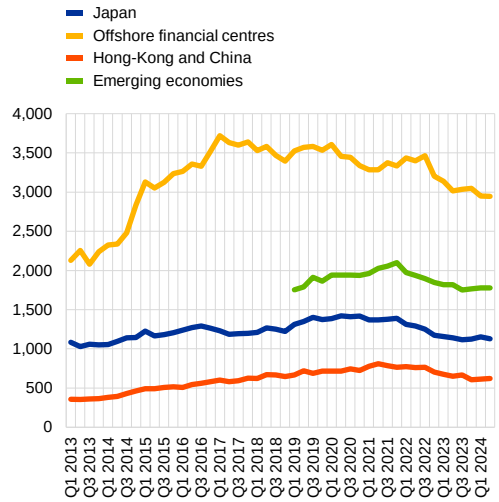
Evolution of total liabilities of euro area residents, by residence of the counterparty

(EUR billions)

a) Main counterparts of the euro area



b) Other counterparts of the euro area



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

When measured as a share of total financial assets of the euro area, some of the increases and decreases discussed above become more nuanced (Figure 23). Figures 21 and 22 look at the data in absolute amounts, although allowing for price changes. Looked at in relative terms, as a share of the total financial assets of the euro area domestic economy, a similar pattern emerges, albeit with some qualifications. In certain cases, the increasing or decreasing trend turns out to be more modest (for example, the total financial exposure of euro area residents to the United States or to Japan), while in others broader changes in the trends in Figures 21 and 22 can be seen. For instance, financial liabilities of euro area residents with offshore financial centres peaked earlier when looked at in relative terms rather than in absolute terms. Similarly, the total liabilities of euro area residents with the United States slightly decreased in relative terms over the period from 2016 to 2024, but slightly increased when considered in absolute amounts.

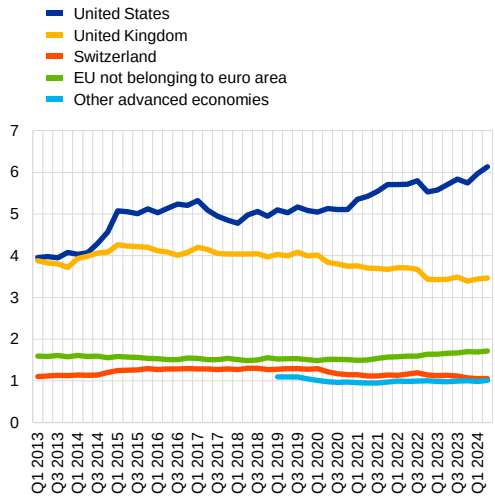
Figure 23

Change in total assets and of total liabilities of euro area residents, by residence of the counterparty, as a share of euro area total financial assets

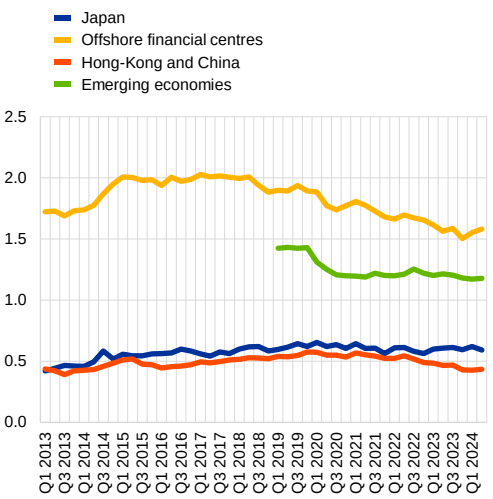
(percentages)

a) Total assets

a.i) Main counterparts of the euro area

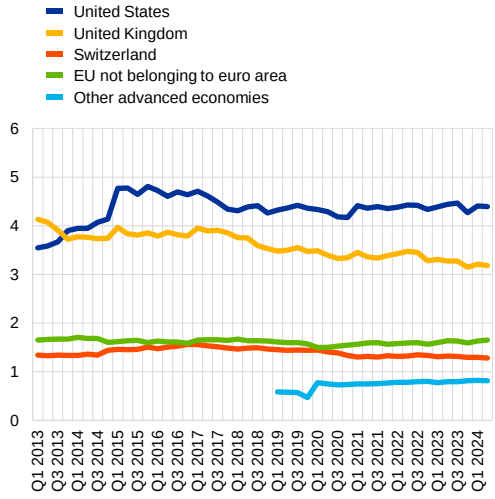


a.ii) Other counterparts of the euro area

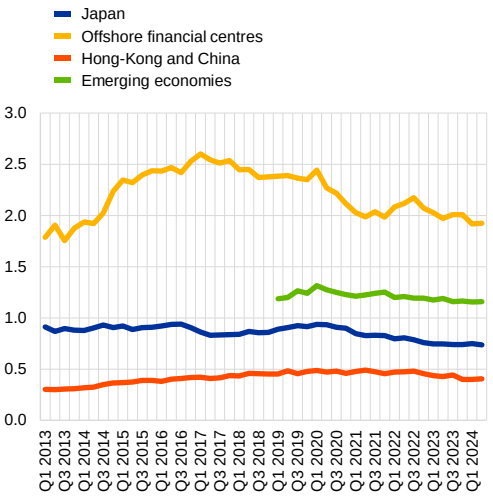


b) Total liabilities

b.i) Main counterparts of the euro area



b.ii) Other counterparts of the euro area



Sources: Balance of Payments and International Investment Position, and Quarterly Sectoral Accounts (ECB) and author's calculations.

Notes: Each line represents the ratio between (i) total assets and liabilities of euro area residents in each country and (ii) total financial assets of the euro area, as reported to the ECB. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

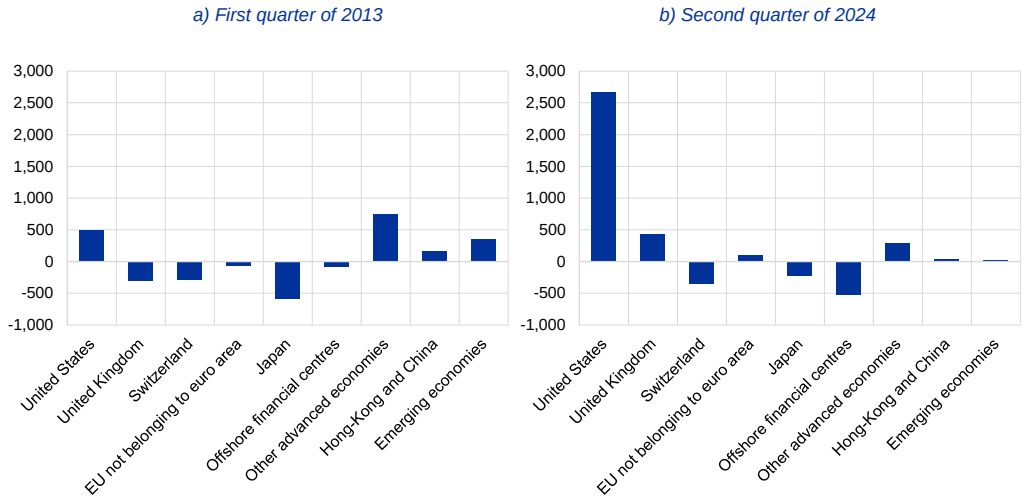
In net terms, the positive difference for the United States has increased notably since the first observation in the first quarter of 2013, with other countries changing sign in their net position (Figure 24). Computing the difference between financial assets and liabilities of euro area

residents with a given country at the first and last observations in the time series (the first quarter of 2013 and the second quarter of 2024) provides interesting insights. The United States has a remarkable positive position, with financial assets far exceeding financial liabilities. In the case of the United Kingdom, a negative net exposure in the first quarter of 2013 turned positive in the second quarter of 2024. In other cases, the net exposure has shifted substantially, although it has not changed sign. This is the case for Japan, offshore financial centres, other advanced economies and emerging economies.

Figure 24

Net assets (assets minus liabilities) of euro area residents, by residence of the counterparty

(EUR billions)



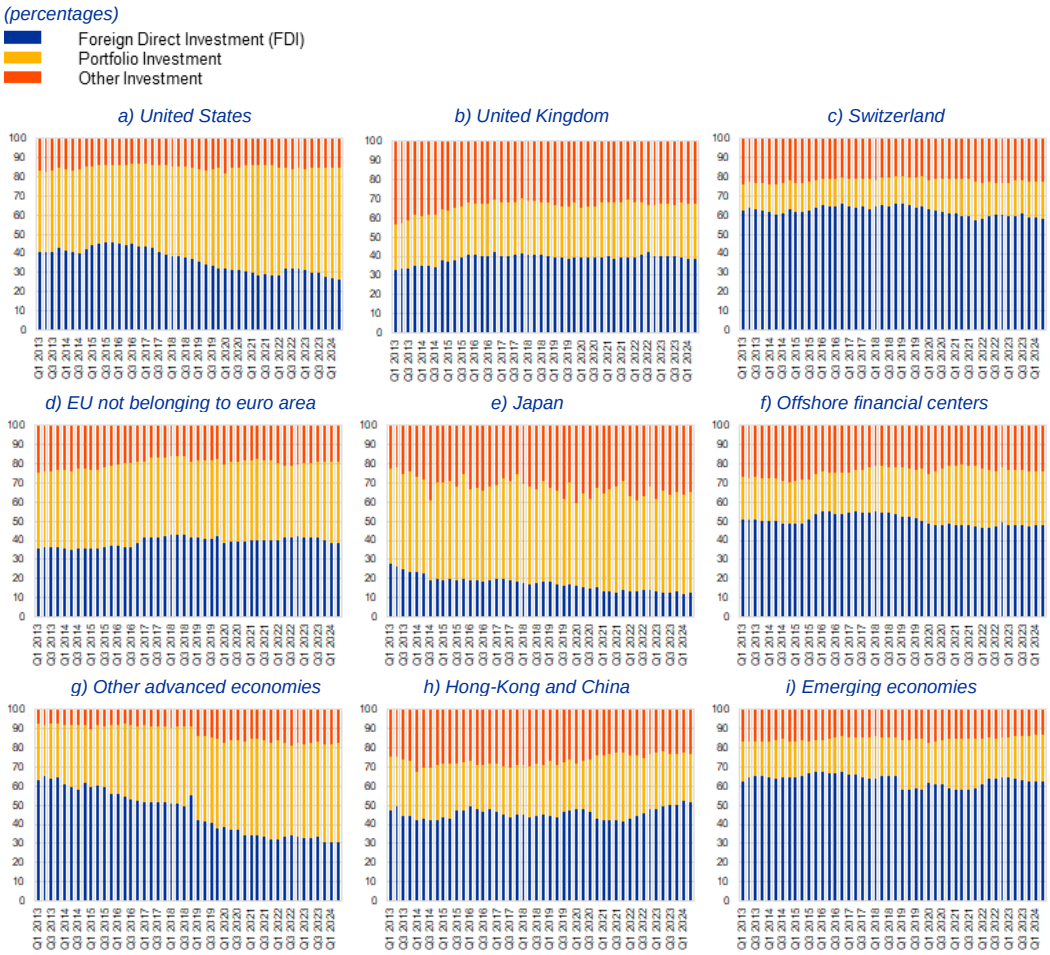
Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Data for other advanced economies and emerging economies refer to the first quarter of 2019, given that this was the first observation. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

In some cases, such as the United States, the relative importance of portfolio investments through the assets of euro area non-residents has grown in the last few years (Figure 25). FDI is a form of investment that makes it possible to gain control of or exert influence over an entity in a third country. The creation of a subsidiary in a country outside the euro area would be one example of this. By contrast, portfolio investments do not entail any such control or influence, purchases in stock markets being one example. Looking at levels, two large groups of countries can be observed: (i) those with FDI representing around 50% of total exposures, which includes Switzerland, offshore financial centres, emerging economies, and Hong-Kong and China; and (ii) those where portfolio investment or other investment prevails, namely the United Kingdom, Japan, United States, EU countries not in the euro area, and other advanced economies. Countries in the second group tend to have large and deep financial markets, through which residents in the euro area gain exposure to them. Looking at the evolution over time, an increase can be seen in the relative importance of portfolio investment since 2013; this is particularly marked in the cases of the United States, Japan and other advanced economies. This increase is in line with the trend

observed in Lane and Milesi-Ferretti (2017) for advanced economies, excluding financial centres, for the period 2007-2015.[22]

Figure 25

Foreign direct investment, portfolio investment and other investment, assets of euro area residents



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

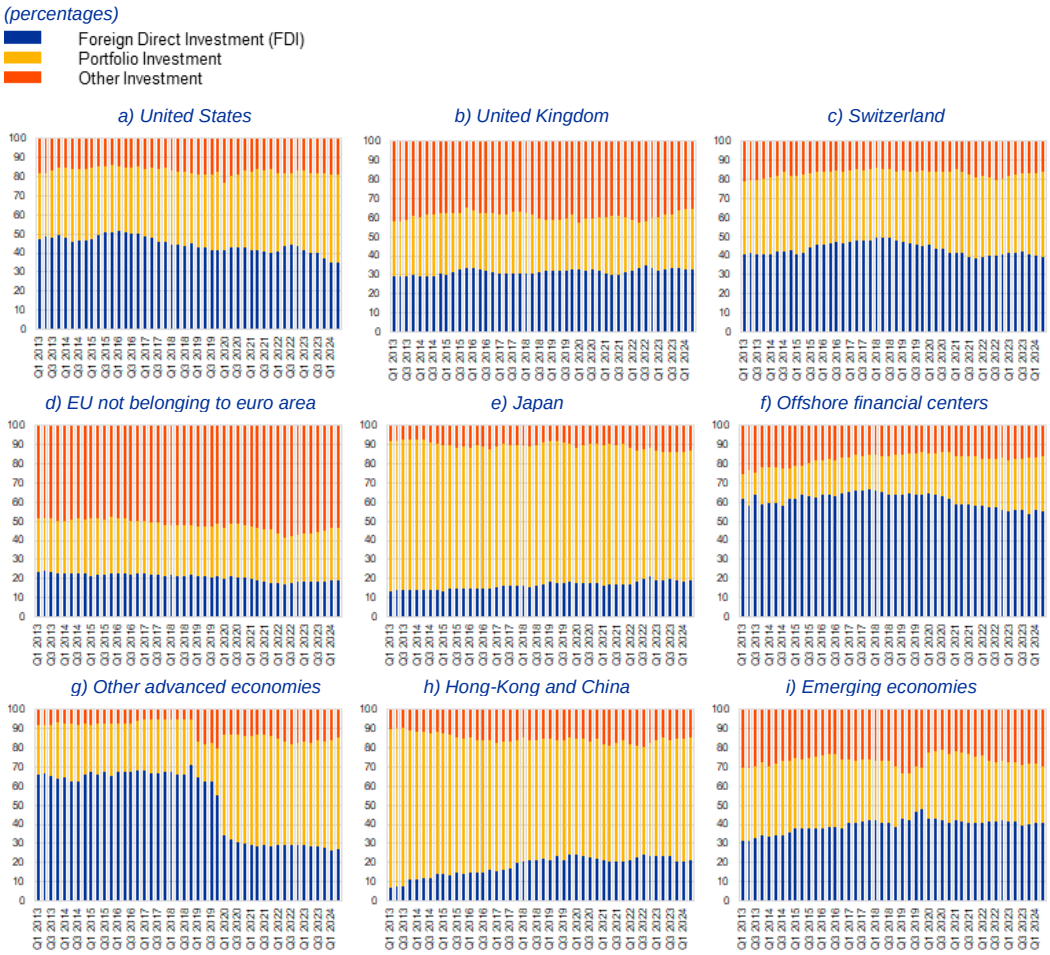
On the liabilities side, the decline in FDI is not so visible and there is wider use of other investment (Figure 26). Looking at the liabilities of euro area residents, other investments (mainly, loans and deposits) constitute the main liability with EU countries not in the euro area and with the United Kingdom. Portfolio investment clearly prevails in the case of Asian economies (i.e. Japan,

[22] Note should, however, be taken of the role that Luxembourg, Ireland and the Netherlands play as "onshore-offshore financial centres" within the euro area, which may artificially increase cross-border holdings of debt securities and, more notably, the equity instruments of euro area countries, as discussed in Beck et al. (2024).

Hong-Kong and China) and has grown in importance for liabilities with Switzerland and the United States.

Figure 26

Foreign direct investment, portfolio investment and other investment, liabilities of euro area residents



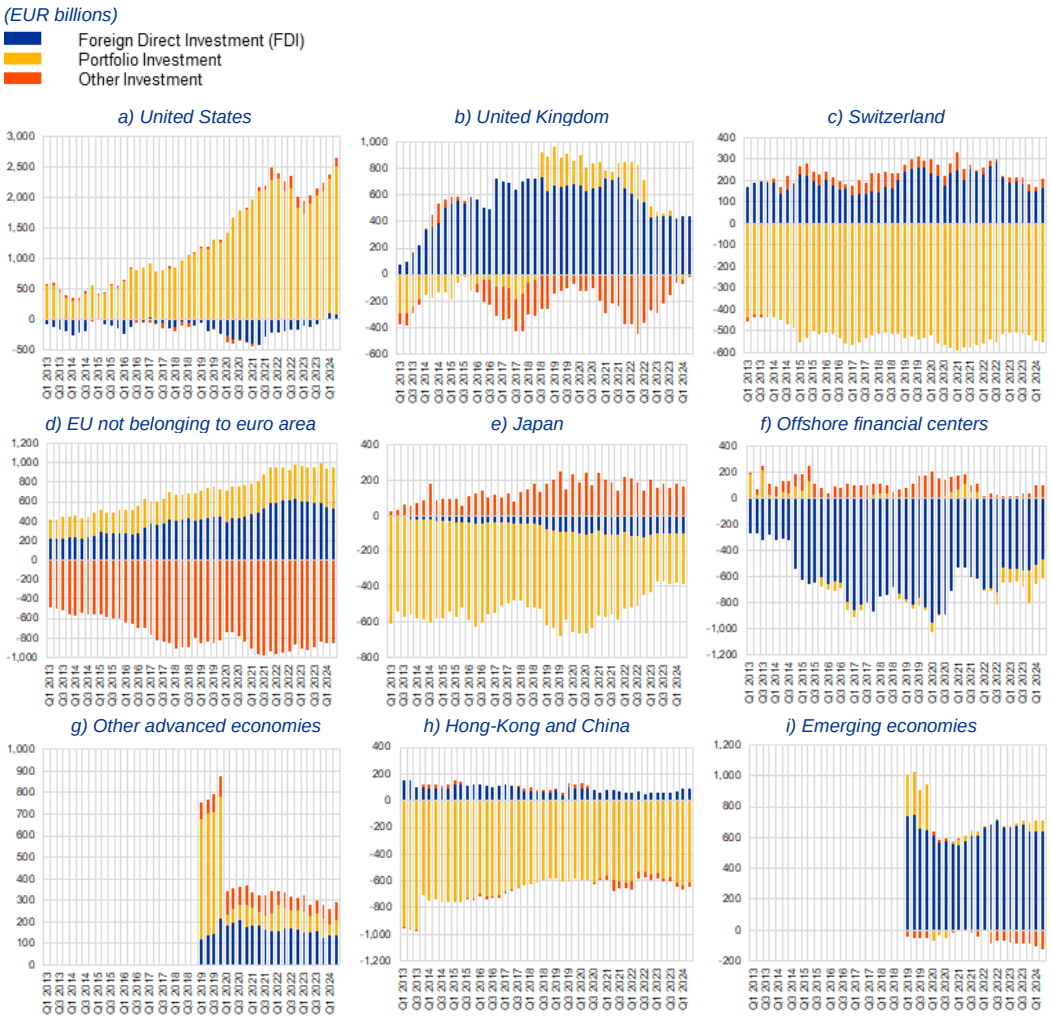
Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

Considering FDI, portfolio investment and other investment in net terms provides interesting insights into how the euro area is exposed to its main global counterparts. Figure 27 shows the difference between assets and liabilities for FDI, portfolio investment and other investment, deflated to exclude the potential impact of prices. It would appear that the euro area directs its FDI primarily towards the United Kingdom, emerging economies and other EU countries not in the euro area, and, to a lesser extent, towards Switzerland and other advanced economies. There is large, albeit decreasing, net FDI with offshore financial centres. There are positive portfolio investments with the United States and, to a lesser extent, with EU countries not in the euro area, pointing to the

role played by financial markets in these areas in attracting investments from euro area residents. On the other hand, there is negative portfolio investment, indicative of investments by non-residents in financial instruments issued in the euro area, for Switzerland, Japan, and Hong-Kong and China. Finally, other investment mainly reflects financial flows linked to banking activities (i.e. loans and deposits), and is particularly large, with a negative sign, for EU economies not in the euro area, suggesting net inflows into the euro area, and for Japan, with a positive sign, indicating the provision of funding to Japan, primarily through bank loans and deposits.

Figure 27

Net (assets minus liabilities) foreign direct investment, portfolio investment and other investment of euro area residents

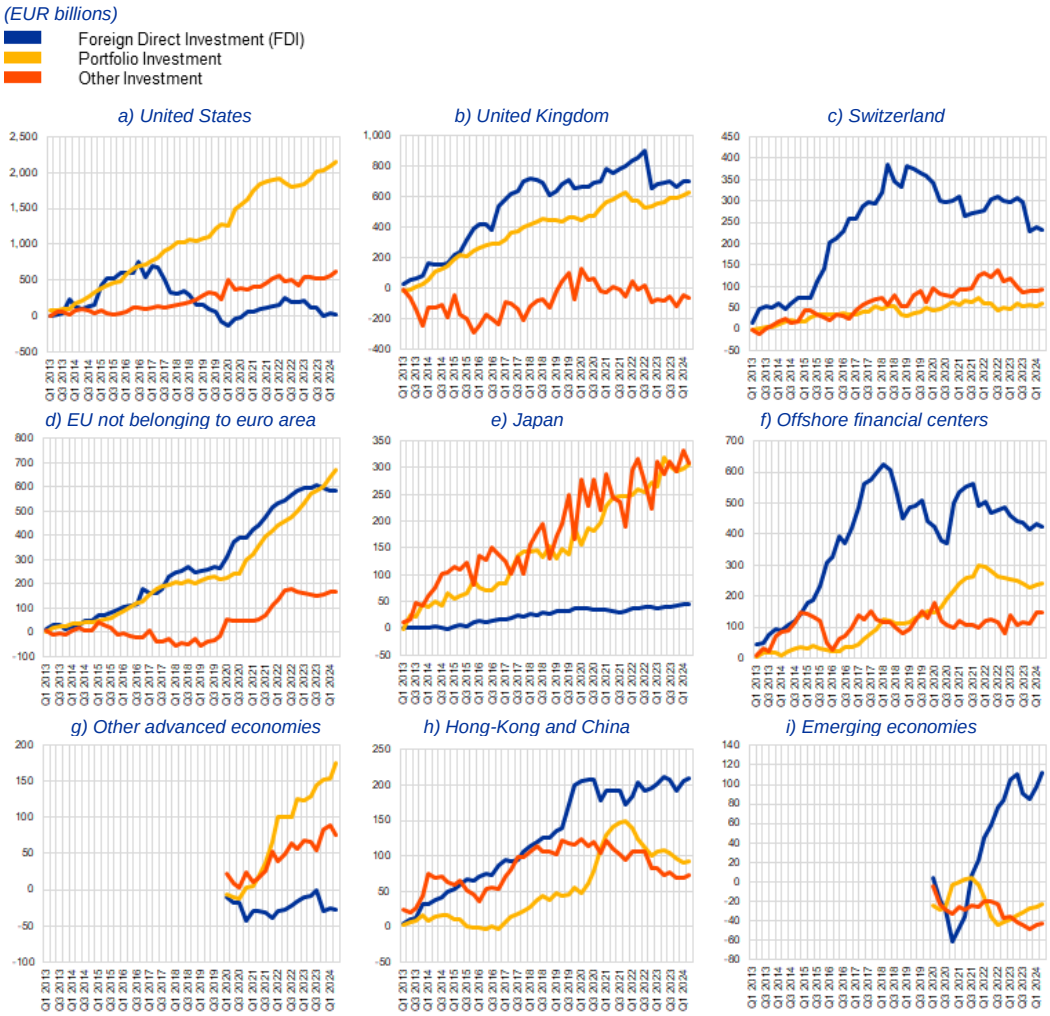


Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

Accumulated financial transactions since the first quarter of 2013 shows increases (meaning higher exposure of euro area residents), with limited exceptions (Figure 28). Financial transactions exclude the impact of exchange rates and prices on the assets of euro area residents with the rest of the world. Looking at the accumulated amounts since the start of the data series, i.e. the first quarter of 2013, there has been an increase for most exposures, with a few exceptions (namely, other investments with the United Kingdom and emerging economies, and FDI with advanced economies). The increases are heterogeneously distributed across categories of investments, being high for FDI in the United Kingdom and EU countries not in the euro area, for portfolio investment in the United States, the United Kingdom and EU countries not in the euro area, and for other investment only in Japan. FDI in the United States has remained almost flat for ten years, suggesting a change in the type of investment euro area residents are making, i.e. a switch from FDI to portfolio. The low values typically associated with other investment may reflect the retrenchment from global activities of European banks that occurred after the global financial crisis (Portes et al., 2020).

Figure 28

Accumulated financial transactions since Q1 2013, assets of euro area residents



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

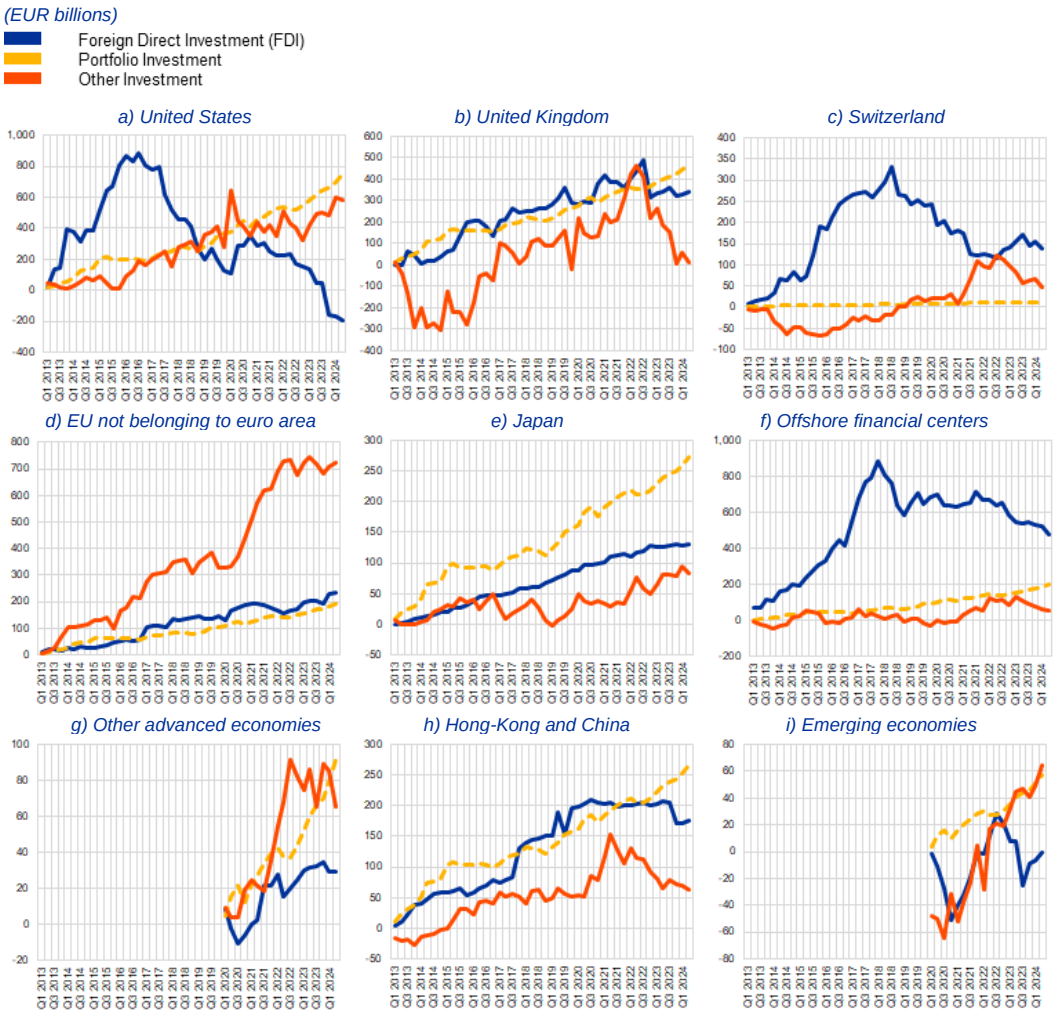
A similar picture is also found when looking at the liabilities of euro area residents with the rest of the world (Figure 29). Financial transactions are not reported on a country basis for portfolio investment, and we applied a linear allocation in our analysis.[23] This assumes, however, that financial transactions occur homogenously across countries in any given period, which is certainly not the case in reality. However, in the absence of additional information, it provides an initial rough estimate of accumulated financial transactions, the approximate nature of the figures being reflected in the use of a dotted line in Figure 29. Despite being partially based on an

[23] In essence, we computed the share of the outstanding amount of the portfolio liabilities of euro area residents with a given country over the aggregate for the rest of the world and applied that share to the financial transactions reported for the aggregate for the rest of the world.

estimate, several insights can be drawn from Figure 29. First, accumulated financial transactions of FDI with the United States since the first quarter of 2013 have been negative and have remained broadly flat for assets. This suggests a deceleration of investments between the United States and the euro area. In general, in the past, FDI would seem to have been the principal investment vehicle into the euro area for Switzerland, the United States and offshore financial centres. Currently, portfolio investment (Japan, the United Kingdom, the United States, other advanced economies, and Hong-Kong and China) and other investment (EU countries not in the euro area, and emerging economies) prevail over FDI.

Figure 29

Accumulated financial transactions since Q1 2013, liabilities of euro area residents



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Deflated amounts using the GDP deflator on the ECB Data Portal. Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

In general terms, BOP and IIP data show, among others, a material increase in portfolio investments of euro area residents with the United States. Our analysis of BOP and IIP data focuses on three dimensions: countries, type of investment (direct, portfolio, other) and type of asset. The main finding of that analysis refers to a continuous increase in portfolio investment by euro area residents with the United States, mainly through shares and investment fund shares. While this increase may be partially explained by related increases in valuations (Milesi-Ferretti, 2024), it might also point to a material financial flow from the euro area to the United States.

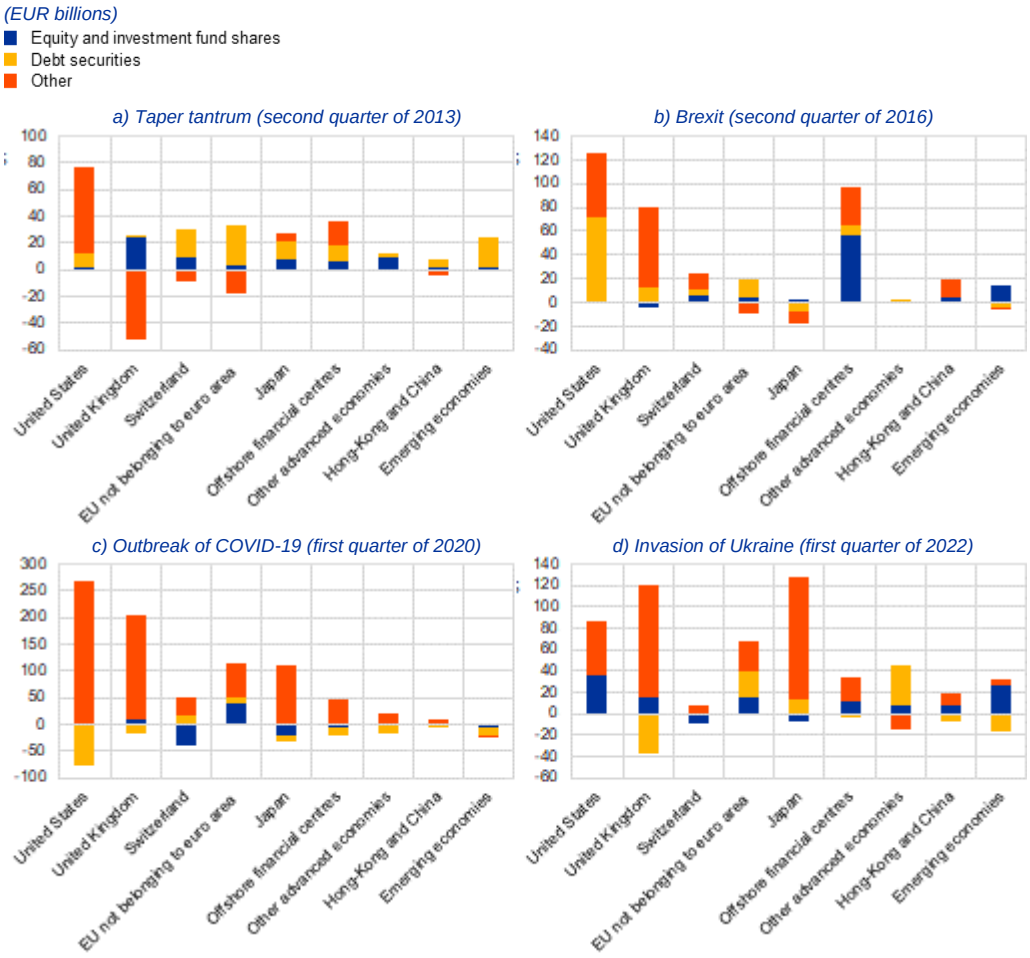
4.3 Financial transactions during episodes of financial stress

The IIP time series cover only four of the financial stress episodes identified in Andersen and Sánchez Serrano (2024). The data used for this analysis started in the first quarter of 2013, making it possible to analyse financial transactions around the taper tantrum in the United States (the second quarter of 2013), the referendum on Brexit (the second quarter of 2016), the outbreak of the COVID-19 pandemic (the first quarter of 2020) and the start of the Russian invasion of Ukraine (the first quarter of 2022).

Regarding assets of euro area residents with the rest of the world, other assets (i.e., loans and deposits) and debt securities seem to have reacted more sharply than equities. With regard to other assets during stress episodes, it is clear from Figure 30 that there were several large financial transactions, such as those with the United States during the taper tantrum, with the United Kingdom, Japan and the United States at the outbreak of the COVID-19 pandemic, and with the United Kingdom and Japan at the start of the Russian invasion of Ukraine. Other assets tend to be associated with banking flows and may also reflect the intragroup transactions of large international banks. With limited exceptions, most financial transactions were positive, signalling that euro area residents did not close their positions during these stress episodes or that they may even have sought safety beyond the euro area. This includes positions with the United States during the taper tantrum and with the United Kingdom during Brexit. Debt securities transactions increased significantly during certain episodes, such as those with the United States during Brexit. Finally, in terms of equities, the muted response across countries and financial stress episodes is also worth noting.

Figure 30

Financial transactions of euro area residents during episodes of financial stress, assets

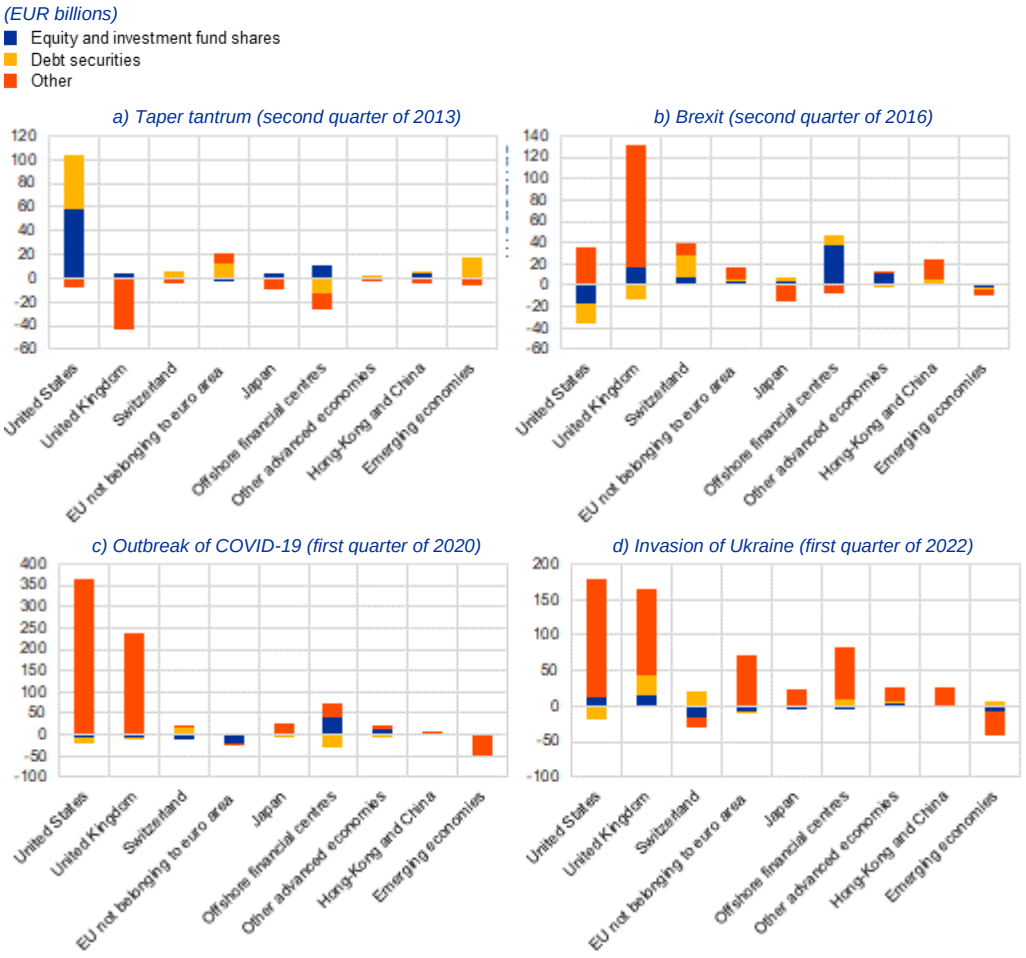


Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

On the liabilities side, the predominance of other liabilities is confirmed, with large financial transactions typically associated with the United Kingdom and the United States (Figure 31). Looking at the liabilities of euro area residents during the four stress episodes considered reveals frequent positive financial transactions with other liabilities (loans and deposits) and very limited transactions with debt securities and equities (the only exception being with the United States during the taper tantrum). Among the countries with the largest positive financial transactions, we find the United Kingdom and the United States, although the start of the Russian invasion of Ukraine also saw substantial increases in other liabilities with offshore financial centres and EU countries not in the euro area.

Figure 31

Financial transactions of euro area residents during episodes of financial stress, liabilities



Sources: Balance of Payments and International Investment Position (ECB) and author's calculations.
Notes: Other advanced economies comprise Australia, Canada, Republic of Korea, and Norway. Emerging economies include Argentina, Brazil, Indonesia, India, Mexico, Russia, Saudi Arabia, Türkiye and South Africa.

In general terms, this analysis suggests that financial transactions with non-residents involving other assets and liabilities are more reactive to financial stress, while debt securities and equities show more stability. Other investments are usually associated with loans and deposits, which are the main items on the balance sheet for banks. They showed the largest financial transactions during the four financial stress episodes analysed here (i.e. the taper tantrum in the United States, the Brexit referendum, the outbreak of the COVID-19 pandemic, and the start of the Russian invasion of Ukraine), which might be explained, at least partially, by transactions by large euro area banking groups. By contrast, financial transactions involving debt securities and equity tended to be rather small, with limited exceptions (such debt securities as assets with the United States during Brexit or liabilities with the United States during the taper tantrum).

5 Conclusions

Our analysis has used existing data to explore three potential extensions of the framework proposed by Andersen and Sánchez Serrano (2024) that would increase its analytical capabilities. In the previous sections, we used data from the euro area quarterly sectoral accounts to examine three extensions of the methodology for building a map of the euro area financial system. These extensions involve: (i) the use of data from the DWA for the household sector; (ii) a breakdown of the other financial institutions sector; and (iii) using BOP and IIP data to identify countries within the aggregate for the rest of the world. As well as identifying the relevant data points (see Annex), we added a short analytical piece in each section to illustrate how each extension could enrich the analysis of the euro area financial system.

Building a balance sheet for the household sector according to their wealth reveals the large heterogeneity concealed in the aggregate figures. The household sector is by far the largest in the EU economy, with a balance sheet of more than €70 trillion. However, the aggregate hides significant variation within the sector, as revealed by our analysis of the DWA. Indeed, based on the holdings of financial assets at the third quarter of 2023, the two highest deciles would be the largest holders of real estate and bank deposits and the second largest investors in investment funds. These deciles are virtually unleveraged, in sharp contrast with households in the lower part of the wealth distribution, which even show negative net worth. Analysing responses to selected episodes of stress, it would seem that the household sector does not react negatively to all shocks, only to those affecting the real economy the most, and, even then, the associated changes in the balance sheet are not large in comparison with other sectors, such as money market funds. In examining the use of DWA data to measure household inequality in the euro area, we are able to identify a slight decrease in inequality in the last few years. It should, however, be noted that few measures of inequality are based on balance sheet variables and our analysis and the conclusions derived from it are consequently limited in scope.

Turning to the breakdown for other financial institutions, it makes it possible to disentangle the main activities carried out by those institutions with the largest linkages with banks and non-financial corporations. The aggregate for other financial institutions encompasses a wide range of business models, ranging from securitisation vehicles and private equity to captive financial institutions. Using the data available in the quarterly sectoral accounts, we are able to gain a clearer overview of the sector, identifying links with banks through securitisation and with non-financial corporations through captive financial institutions. While it offers no definitive answer as to the role played by non-bank financial intermediaries in providing financial services to the real economy, the available data do prove useful in identifying possible intragroup transactions between captive financial institutions and non-financial corporations involving loans and debt securities. This is key to a better understanding of this area. Furthermore, although we did not find any pattern of concern in financial transactions during periods of stress, there would seem to be a strong seasonal component, on both sides of the balance sheet, in financial transactions by captive financial institutions involving loans and unlisted shares.

Although offering an incomplete view of the aggregate for the rest of the world, BOP and IIP data show, among others, a sharp increase during periods of stress in the exposure of euro

area residents to the United States, and large flows to the rest of the world. The available BOP and IIP data mainly cover equity and investment funds shares, and debt securities. Loans and deposits are included under the category “other investments”. On a positive note, the methodologies for the quarterly sectoral accounts, and for the BOP and IIP are broadly aligned, with little room for discrepancies. Our analysis of the main counterparts of the euro area shows a continuous increase in the portfolio investments of euro area residents with the United States since 2013. We also see how the euro area interacts with the different countries concerned and the nature of the financial flows with those countries. For instance, FDI tends to be used primarily for investing in emerging Asian economies, while portfolio and other investments play a larger role for advanced economies. The findings of an analysis of this kind serve to assess the position of the euro area in the global financial system (see also Korniyenko et al., 2018). During past episodes of financial stress, large financial transactions involving other assets and liabilities, which are typically associated with banks, could be observed.

In general, extending the map of the euro area financial system in these three directions would greatly improve the analytical use the map in the areas of interconnectedness and financial stability. In addition to providing a more accurate description of the euro area financial system, these extensions would increase the capacity of the map of the euro area financial system, as in Andersen and Sánchez Serrano (2024), to identify key interconnections and possible contagion channels for financial stress. For instance, they could be used by macroprudential authorities as tools for assessing the vulnerability of their jurisdictions to shocks originating abroad and for identifying the main channels through which financial stress could reach their jurisdictions. They would also provide additional information on three of the largest sectors of the euro area economy (households, other financial institutions and rest of the world), while being aligned with the methodology and valuations of the quarterly sectoral accounts.

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Annex. Data points used in the analyses

Distributional Wealth Accounts (DWA)

Item	Asset / Liability	Series code (decile D1)	Comments
Deposits	Asset	DWA.Q.I9.S14.A.LE.F2M.D1.EUR.S.N	Data for the euro area with 20 countries, as of 1 January 2023 (code I9). Series codes shown for the first decile (D1). For all other deciles, replace D1 by D2, D3, D4, D5, D6, D7, D8, D9 and D10 in the series code. Data on the lower deciles (D1 to D5) are only available for users in the European System of Central Banks, not for the public. As an alternative, the aggregation of the bottom 50 can be used by replacing D1 by B50 in the codes.
Investment fund shares	Asset	DWA.Q.I9.S14.A.LE.F52.D1.EUR.S.N	
Housing wealth (net)	Asset	DWA.Q.I9.S14.A.LE.NUN.D1.EUR.S.N	
Listed shares	Asset	DWA.Q.I9.S14.A.LE.F511.D1.EUR.S.N	
Debt securities	Asset	DWA.Q.I9.S14.A.LE.F3.D1.EUR.S.N	
Unlisted shares	Asset	DWA.Q.I9.S14.A.LE.F51M.D1.EUR.S.N	
Other assets	Asset	DWA.Q.I9.S14.A.LE.F_NNA.D1.EUR.S.N + DWA.Q.I9.S14.L.LE.F4B.D1.EUR.S.N - DWA.Q.I9.S14.A.LE.F2M.D1.EUR.S.N - DWA.Q.I9.S14.A.LE.F52.D1.EUR.S.N - DWA.Q.I9.S14.A.LE.NUN.D1.EUR.S.N - DWA.Q.I9.S14.A.LE.F511.D1.EUR.S.N - DWA.Q.I9.S14.A.LE.F3.D1.EUR.S.N -- DWA.Q.I9.S14.A.LE.F51M.D1.EUR.S.N	
Total assets	Asset	DWA.Q.I9.S14.A.LE.F_NNA.D1.EUR.S.N + DWA.Q.I9.S14.L.LE.F4B.D1.EUR.S.N	
Loans	Liability	DWA.Q.I9.S14.L.LE.F4B.D1.EUR.S.N + DWA.Q.I9.S14.L.LE.F4X.D1.EUR.S.N	
Net wealth	Liability	DWA.Q.I9.S14.N.LE.NWA.D1.EUR.S.N	

Breakdown of other financial institutions

Item	Asset / Liability	Series code (other financial intermediaries)	Comments
Deposits	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F2M.T._Z.XDC._T.S.V.N._T	Data for the euro area with 20 countries, as of 1 January 2023 (code I9). The series codes refer to other financial intermediaries (S125). To get data from financial auxiliaries, and from captive financial institutions and money lenders, replace S125 by S126 and S127, respectively. The series codes show the outstanding amounts at the end of the period. To get financial transactions, please replace LE by F in the series code.
Debt securities	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F3.T._Z.XDC._T.S.V.N._T	
Loans	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F4.T._Z.XDC._T.S.V.N._T	
Listed shares	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F511._Z._Z.XDC._T.S.V.N._T	
Unlisted shares	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F51M._Z._Z.XDC._T.S.V.N._T	
Investment fund shares	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F52._Z._Z.XDC._T.S.V.N._T	
Other assets	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F._Z._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.A.LE.F2M.T._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.A.LE.F3.T._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.A.LE.F4.T._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.A.LE.F511._Z._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.A.LE.F51M._Z._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.A.LE.F52._Z._Z.XDC._T.S.V.N._T	
Total assets	Asset	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F._Z._Z.XDC._T.S.V.N._T	
Debt securities	Liability	QSA.Q.N.I9.W0.S125.S1.N.L.LE.F3.T._Z.XDC._T.S.V.N._T	
Loans	Liability	QSA.Q.N.I9.W0.S125.S1.N.L.LE.F4.T._Z.XDC._T.S.V.N._T	
Listed shares	Liability	QSA.Q.N.I9.W0.S125.S1.N.L.LE.F511._Z._Z.XDC._T.S.V.N._T	
Unlisted shares	Liability	QSA.Q.N.I9.W0.S125.S1.N.L.LE.F51M._Z._Z.XDC._T.S.V.N._T	
Other liabilities	Liability	QSA.Q.N.I9.W0.S125.S1.N.A.LE.F._Z._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.L.LE.F3.T._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.L.LE.F4.T._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.L.LE.F511._Z._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W0.S125.S1.N.L.LE.F51M._Z._Z.XDC._T.S.V.N._T	

Additional data on financial corporations engaged in lending and financial vehicles engaged in securitisation

Item	Asset / Liability	Series code	Comments
Loans	Asset	OFI.A.U2.N.30.A20.A.1.A1.0000.Z01.E	Financial corporations engaged in lending.
Debt securities	Asset	OFI.A.U2.N.30.A30.A.1.A1.0000.Z01.E	Data for the euro area with 20 countries, as of 1 January 2023 (code I9). The series codes show the outstanding amounts at the end of the period.
Deposits	Asset	FVC.Q.U2.N.F.A10.A.1.A1.0000.ZZ.Z01.E	Financial vehicles engaged in securitisation.
Loans	Asset	FVC.Q.U2.N.F.A20.A.1.A1.0000.00.Z01.E	Data for the euro area with 20 countries, as of 1 January 2023 (code I9). The series codes show the outstanding amounts at the end of the period.
Debt securities	Asset	FVC.Q.U2.N.F.A30.A.1.A1.0000.ZZ.Z01.E	
Loans	Liability	FVC.Q.U2.N.F.L20.A.1.A1.0000.ZZ.Z01.E	
Debt securities	Liability	FVC.Q.U2.N.F.L40.A.1.A1.0000.ZZ.Z01.E	

Data points used for the estimation of intragroup lending exposures in Box 2

Item	Asset / Liability	Series code	Comments
Loans and debt securities of non-financial corporations	Liability	QSA.Q.N.I9.W0.S11.S1.C.L.LE.F3T4.T._Z.XDC._T.S.V.N._T	Consolidated, world
Debt securities issued by non-financial corporations	Liability	QSA.Q.N.I9.W0.S11.S1.N.L.LE.F3.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W0.S11.S1.N.L.LE.F3.L._Z.XDC._T.S.V.N._T	Unconsolidated, world
Loans to non-financial corporations by non-financial corporations	Asset	QSA.Q.N.I9.W2.S11.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S11.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy
Loans to non-financial corporations by investment funds	Asset	QSA.Q.N.I9.W2.S124.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S124.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy
Loans to non-financial corporations by banks	Asset	QSA.Q.N.I9.W2.S12K.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S12K.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy, assuming no loan from central banks or money market funds
Loans to non-financial corporations by other financial institutions	Asset	QSA.Q.N.I9.W2.S12O.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S12O.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy
Loans to non-financial corporations by insurance corporations and pension funds	Asset	QSA.Q.N.I9.W2.S12Q.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S12Q.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy
Loans to non-financial corporations by government	Asset	QSA.Q.N.I9.W2.S13.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S13.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy
Loans to non-financial corporations by households	Asset	QSA.Q.N.I9.W2.S1M.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W2.S1M.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated, domestic economy
Loans to non-financial corporations by rest of the world	Liability	QSA.Q.N.I9.W0.S11.S1.N.L.LE.F4.S._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W2.S1.S11.N.A.LE.F4.S._Z.XDC._T.S.V.N._T + QSA.Q.N.I9.W0.S11.S1.N.L.LE.F4.L._Z.XDC._T.S.V.N._T – QSA.Q.N.I9.W2.S1.S11.N.A.LE.F4.L._Z.XDC._T.S.V.N._T	Unconsolidated

Balance of Payments (BOP) and International Investment Position (IIP)

Item	Asset / Liability	Country	Series code
FDI, shares and investment fund shares	Asset	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	Switzerland	BPS.Q.N.I9.CH.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
FDI, shares and investment fund shares	Liability	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	United Kingdom	BPS.Q.N.I9.GB.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	Japan	BPS.Q.N.I9.JP.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	Japan	BPS.Q.N.I9.JP.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	Japan	BPS.Q.N.I9.JP.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	Japan	BPS.Q.N.I9.JP.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	Japan	BPS.Q.N.I9.JP.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	Japan	BPS.Q.N.I9.JP.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	Japan	BPS.Q.N.I9.JP.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	Japan	BPS.Q.N.I9.JP.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	Japan	BPS.Q.N.I9.JP.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	Japan	BPS.Q.N.I9.JP.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
Portfolio investment, shares and investment fund shares	Asset	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
Portfolio investment, shares and investment fund shares	Liability	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
Portfolio investment, debt	Asset	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
Other investment	Asset	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
Portfolio investment, debt	Liability	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
Other investment	Liability	United States	BPS.Q.N.I9.US.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
Portfolio investment, shares and investment fund shares	Asset	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CA.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.KR.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.NO.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
FDI, debt	Asset	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Liability	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
FDI, debt	Liability	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	Emerging economies	BPS.Q.N.I9.R7.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	Emerging economies	BPS.Q.N.I9.R7.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	Emerging economies	BPS.Q.N.I9.BR.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.AR.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ID.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.IN.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.MX.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.RU.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.SA.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.TR.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.ZA.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL
FDI, shares and investment fund shares	Asset	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.A.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Asset	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.A.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Asset	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.A.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Asset	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.A.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Asset	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.A.FA.O.F._Z.EUR._T._X.N.ALL

Item	Asset / Liability	Country	Series code
FDI, shares and investment fund shares	Liability	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.L.FA.D.F5._Z.EUR._T._X.N.ALL
FDI, debt	Liability	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.L.FA.D.FL._Z.EUR._T._X.N.ALL
Portfolio investment, shares and investment fund shares	Liability	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.L.FA.P.F5._Z.EUR._T.M.N.ALL
Portfolio investment, debt	Liability	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.L.FA.P.F3.T.EUR._T.M.N.ALL
Other investment	Liability	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL + BPS.Q.N.I9.CN.S1.S1.LE.L.FA.O.F._Z.EUR._T._X.N.ALL

To obtain the data on financial transactions, it is necessary to replace “LE” by “T” in the series codes above.

There are two important exceptions to this rule. First, there is no breakdown by country for portfolio investments as liabilities of euro area residents. Second, for portfolio investments as assets of euro area residents, financial transactions with debt securities are calculated as total financial transactions minus financial transactions with equity. The corresponding series codes for total financial transactions can be found in the table below.

Item	Asset / Liability	Country	Series code
Portfolio investment, total	Asset	Switzerland	BPS.Q.N.I9.CH.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	United Kingdom	BPS.Q.N.I9.GB.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	Japan	BPS.Q.N.I9.JP.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	EU countries not in euro area	BPS.Q.N.I9.K11.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	Offshore financial centres	BPS.Q.N.I9.R12.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	United States	BPS.Q.N.I9.US.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	Other advanced economies	BPS.Q.N.I9.AU.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.CA.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.KR.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.NO.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	Emerging economies	BPS.Q.N.I9.BR.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.AR.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.ID.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.IN.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.MX.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.RU.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.SA.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.TR.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.ZA.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL
Portfolio investment, total	Asset	Hong-Kong and China	BPS.Q.N.I9.HK.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL + BPS.Q.N.I9.CN.S1.S1.T.A.FA.P.F._Z.EUR._T.M.N.ALL

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