

The role of euro area non-monetary financial institutions in financial intermediation

With bank lending staging a slow and protracted recovery in the wake of the global financial crisis, non-monetary financial institutions (non-MFIs) have expanded their share of financial intermediation in the euro area. In doing so, they have helped to mitigate the effects of the financial and sovereign debt crises on the euro area economy. At the same time, the observed shift in intermediation towards institutions other than banks may have implications for monetary policy transmission. Differences in regulation and supervision, in particular, appear to motivate some non-MFIs to adjust their risk exposures more quickly than banks in response to changes in the business and financial cycles, thereby accelerating the transmission of monetary policy, while other sectors, like long-term institutional investors, may have a stabilising impact. In this respect, the rising role of non-MFIs that are subject to less regulation and supervision has to be assessed for its possible repercussions on monetary policy transmission. In addition, the interplay of all financial intermediaries needs to be monitored from a monetary policy perspective.

1 Introduction

With lending by monetary financial institutions (MFIs) recovering only slowly, financial institutions outside the MFI sector have accounted for a rising share of financial intermediation in the euro area since the global financial crisis.¹

Between the end of 2008 and the fourth quarter of 2015, non-MFIs expanded their share of financial assets held by euro area financial corporations from 42% to 57%.² They have thus helped channel funding to the various sectors of an economy whose financial intermediation has traditionally mainly relied on banks.³

The interaction of several factors, both cyclical and structural in nature, can be identified as being among the key drivers of this shift. On the side of euro area banks, lending has languished as they have dealt with the fallout from the global financial crisis and the euro area sovereign debt crisis. This reduced supply of finance from banks is one cause of the rise of intermediation by non-MFIs. At the same time, the rise of non-MFIs has been supported by the low level of interest rates in the wake of the financial crisis, as well as longer-term structural factors, including demographic trends and population ageing. These have led to an increase in

¹ Euro area MFIs include credit institutions, money market funds and the Eurosystem.

² The reported shares are based on the outstanding amounts of total financial assets held by the financial sector as a whole and its sub-sectors, thus reflecting not only genuine growth but also revaluation effects and statistical reclassifications between the two comparison points. Assets held by the Eurosystem are excluded from the figures.

³ The terms "MFI" and "bank" are used synonymously in this article.

purchases of products offered by insurance corporations and pension funds (ICPFs) and to higher investment flows into non-money market fund investment funds (non-MMF IFs), as returns on existing pension schemes have lagged behind objectives. In addition, regulatory arbitrage may have transferred some intermediation activities from banks to non-MFI sectors.

Structural change in euro area financial intermediation, such as the shift from MFIs to non-MFIs, has implications for monetary policy transmission. Most of the transmission channels of monetary policy work by influencing the way in which financial intermediaries provide funding to the economy. In this setting, banks retain a major role in the euro area. However, the growing importance of non-MFIs makes them increasingly relevant for the propagation of monetary impulses. In this role, non-MFIs may react differently from banks to changes in the monetary policy stance, thereby altering the way monetary policy is transmitted through financial markets and intermediaries' balance sheets to the real economy.

In particular, some non-MFIs may accelerate the transmission of monetary policy. Specifically entities in the other financial institution (OFI) sector may react faster than banks to monetary policy impulses and changes in the economic and financial outlook. This means that they also retrench more rapidly in times of crisis. Part of this is associated with the less stringent regulation and supervision some non-MFIs are subject to. By contrast, banks as deposit-taking institutions hold reserves with central banks and act as their direct counterparties in monetary policy operations. For this reason they also generally enjoy a public sector backstop associated with extensive regulation and supervision.

Consequently, understanding trends and developments in the euro area non-MFI sectors is crucial for monetary policy. Against this background, Section 2 of this article provides a brief overview of academic findings on the role of the non-MFI sectors in monetary policy transmission. Section 3 describes and analyses the role of non-MFIs within the financial system of the euro area, while Section 4 focuses on the trends observed for the individual constituents of the euro area non-MFIs. Sections 3 and 4 both provide examples of developments that have implications for monetary policy transmission stemming from the findings presented in Section 2. Section 5 concludes.

2 The role of non-MFIs in monetary policy transmission – a review of the literature

Monetary policy affects the economy through several sectors and channels of transmission. Most of these channels work by influencing the decisions of financial intermediaries, which provide funding and investment opportunities to financial and non-financial sectors of the economy. In the euro area, MFIs, which comprise banks and money market funds (MMFs), are the main providers of financial services in the economy and therefore play a major role in the transmission of monetary policy. However, owing to their increasing relevance in the financial sector, non-MFIs have now also become more important for the transmission of monetary policy impulses.

Non-MFIs include non-MMF IFs, other financial intermediaries except ICPFs (including financial vehicle corporations, FVCs), financial auxiliaries, captive financial institutions and money lenders, and ICPFs (see Box 1 for a detailed description of non-MFIs according to the European System of Accounts 2010).

Owing to differences in business models and associated legal and regulatory requirements, non-MFIs respond differently from banks to monetary policy impulses.

Banks, as deposit taking institutions, are typically highly regulated financial intermediaries subject to capital and liquidity requirements. Together with money market funds (seen as providing close substitutes for deposits) and central banks they comprise the MFI sector, as the creator of inside and outside money respectively. The MFI sector has thus traditionally been seen as the natural starting point for analysing monetary transmission in bank-based financial systems. At the same time, banks, as depository institutions subject to minimum reserve requirements have, in times of stress, access to emergency liquidity assistance from central banks and, if they become insolvent, they are subject to an orderly resolution process that can involve public backstops. Non-MFIs are financial intermediaries that can also be involved in maturity and liquidity transformation and credit risk transfer, but they generally do not have access to public backstops or central bank liquidity.

The mechanisms through which monetary policy is transmitted have been the focus of extensive analysis and empirical investigation over the last few decades.

The main focus of this effort, especially in the early years, has been on the role of the assets and liabilities of banks, which provided the primary source of debt financing for the non-financial corporate (NFC) sector and for households in the euro area. However, some of the mechanisms featured in this research can also provide insight into the processes involving non-MFI sectors to different degrees.

Broadly speaking, the channels of monetary transmission comprise an interest rate (or cost-of-capital) channel, a broad credit channel and a risk-taking channel.⁴

While these three channels can potentially work for MFIs and non-MFIs alike, there may be differences in terms of speed and amplitude in the transmission of monetary policy impulses. This is due, for example, to the possible interactions with the different regulatory and supervisory frameworks in which financial intermediaries operate. In particular, the presence of less regulated – and therefore more flexible – non-bank intermediaries can make monetary transmission faster.⁵ This is because they can adapt their risk exposure to changes in financing conditions more quickly.⁶

⁴ For a detailed characterisation of these channels, see the article entitled "Monetary policy and loan supply in the euro area", *Monthly Bulletin*, ECB, October 2009.

⁵ ICPFs and investment funds are subject to regulatory requirements to protect policy holders. The main difference between them and the banking sector remains access to central bank liquidity and the government guarantee for bank depositors.

⁶ For a discussion on changes to monetary policy transmission in the euro area, see, for example, the article entitled "The shadow banking system in the euro area: overview and monetary policy implications", *Monthly Report*, Deutsche Bundesbank, March 2014 and Beck, G., Kotz, H.-H. and Zabelina, N., "Lost in translation? ECB's monetary impulses and financial intermediaries' responses", *White Paper*, No 36, SAFE, April 2016.

In particular, some non-MFIs seem to respond faster to changes in the business and financial cycles than banks. Indeed, some studies have shown that the leverage of security brokers and dealers is pro-cyclical and linked to monetary policy changes. Tighter monetary policy tends to lower the risk-taking of broker-dealers, leading to an increase in the pricing of risk.⁷ Concerning other intermediaries, some studies have shown that ICPFs, as long-term investors, are in principle better placed to look through short-term market volatility and play a counter-cyclical role.⁸ At the same time, such institutional investors strongly depend on stable returns from fixed income and have been shown to react relatively strongly to interest rate changes. For example, insurance corporations, which are large holders of securities, tend to engage in a search for yield, as they systematically choose riskier investments from among the assets fulfilling their regulatory requirements.⁹ This seems to be intensified when interest rates are low. In parallel, however, their long investment horizons increase their resilience to sudden changes in monetary policy rates. When looking at investment funds, the available evidence generally supports the notion that lower real interest rates shift portfolio investment towards riskier assets – out of the money market and into the riskier equity market – causing significant increases in stock prices in countries where investment home bias is strong.¹⁰

Overall, existing research suggests that the increasing role of non-MFIs in the financial sector may imply a somewhat faster transmission of monetary shocks, notably through the risk-taking channel. At the same time, recent historical analysis has shown that the relationship between credit and broad money began to decouple after the early 1970s, when financial intermediaries other than banks started to become important contributors to credit intermediation in a number of countries, but to a lesser extent in the euro area.¹¹ In line with this, it is found that non-MFIs induce higher time-variation in the velocity of money and credit, implying potentially greater instability in the transmission of monetary policy.¹² More generally, the growing role of non-MFIs affects the relative importance of different transmission channels of monetary policy.

⁷ See in particular Adrian, T. and Shin, H.S. "Liquidity and Leverage", *Journal of Financial Intermediation*, 19 (3), July 2010, pp. 418-437 and, by the same authors, "Procyclical Leverage and Value-at-Risk", *Review of Financial Studies* 27(2), February 2014, pp. 373-403.

⁸ See, for example, "Procyclicality and structural trends in investment allocation of insurance corporations and pension funds", Discussion Paper by the Bank of England and the Procyclicality Working Group, July 2014.

⁹ See Becker, B., and Ivashina, V., "Reaching for Yield in the Bond Market", *Journal of Finance*, Vol. 70, No 5, October 2015, pp. 1863–1902.

¹⁰ See Hau, H. and Lai, S., "Asset Allocation and Monetary Policy: Evidence from the Eurozone", *Journal of Financial Economics*, forthcoming. Several analytical studies have also addressed how monetary policy affects the investment decisions of MMFs. Evidence is based on US MMFs, which are large liquidity providers owing to their size. Owing to their regulatory framework, including the most recent changes that will be implemented over the coming months, there seems to be little scope for these intermediaries to engage in risk-shifting (see Chodorow-Reich, G., "Effects of Unconventional Monetary Policy on Financial Institutions", *Brookings Papers on Economic Activity* (Spring), 2014, pp. 155-204, and La Spada, G., "Competition, Reach for Yield, and Money Market Funds", *Staff Reports*, No 753, Federal Reserve Bank of New York, December 2015).

¹¹ See Schularick, M. and Taylor, A.M., "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870-2008", *American Economic Review*, 102(2): 1029-61, 2012.

¹² See Adrian, T. and Liang, N., "Monetary Policy, Financial Conditions, and Financial Stability", *Staff Reports*, No 690, Federal Reserve Bank of New York, September 2014.

Box 1

Financial institutions according to the European System of Accounts 2010

The financial accounts are the framework for the analysis of the financial sector as they provide a comprehensive presentation of the financial positions, financial transactions and other flows in the economy. In the European Union, the financial accounts are compiled according to the concepts and definitions laid down in the European System of Accounts 2010 (ESA 2010) and the ECB Guideline on quarterly financial accounts, which ensure consistent recording for the euro area and comparability across countries.¹³

The ESA 2010 defines the financial sector broadly as all institutional units whose principal activity is the production of financial services.¹⁴ In addition to financial intermediaries, this definition includes financial auxiliaries, captive financial institutions and money lenders. Financial auxiliaries facilitate financial transactions, e.g. as brokers or consultants, between third parties without becoming the legal counterparty. Thus they do not put themselves at risk and their financial positions tend to be small. Captive financial institutions and money lenders are defined as institutional units most of whose assets or liabilities are not transacted on open markets. One example of such a unit is a special purpose entity (SPE) that raises funds in open markets – e.g. by issuing debt securities – but lends exclusively to a parent corporation. Conversely, trusts and money lenders may receive funds from one individual household or corporation and invest them in the financial markets.

Financial intermediaries are divided into sub-sectors according to their main type of financing. Monetary financial institutions (MFIs) comprise the ECB and national central banks, which issue currency and deposits, deposit-taking institutions and money market funds (MMFs). MMFs belong to the MFI sector, as they issue fund shares or units which are considered close substitutes for bank deposits.

Non-monetary financial institutions (non-MFIs) cannot issue deposits or money market fund shares or units. As they do not offer deposits or close substitutes to deposits to the public, non-MFIs are not subject to the same regulatory framework as MFIs. Three of the non-MFI sub-sectors can be easily characterised by their main liabilities – these are non-MMF IFs, insurance corporations and pension funds (see Table A).

¹³ See Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (OJ L 174, 26.6.2013, p. 1) and ECB Guideline on the statistical reporting requirements of the ECB in the field of quarterly financial accounts (OJ L 2, 7.1.2014, p. 34).

¹⁴ The financial accounts cover all entities resident in the euro area, but not funds resident offshore. All institutional units are covered, regardless of whether or not they belong to a bigger corporation or banking group.

Table A**MFIs and non-MFIs according to ESA 2010**

Monetary financial institutions (MFIs)	
Central bank	
Deposit-taking corporations except the central bank	
Money market funds (MMFs)	
Non-monetary financial institutions (non-MFIs)	
Other financial institutions (i.e. financial corporations other than MFIs, insurance corporations and pension funds)	
Non-MMF investment funds (non-MMF IFs)	Non-MMF collective investment schemes, includes real estate investment funds, "funds of funds", exchange traded funds (ETFs) and hedge funds. Investment funds may be open-ended or closed ended.
OFIs excluding IFs	
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.
Security and derivatives dealers	Security and derivative dealers acquiring assets and incurring liabilities on their own account (as opposed to security 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 MFIs only and central clearing counterparties.
Financial auxiliaries	
	For example, security brokers, corporations that manage the issue 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.
Insurance corporations (ICs)	
	Corporations primarily engaged in the pooling of risks in the form of direct insurance or reinsurance.
Pensions funds (PFs)	
	Corporations primarily engaged in the pooling of social risks and providing income in retirement

Non-MMF IFs raise funds almost exclusively by issuing investment fund shares or units and invest the funds in the financial markets or in real estate. Exceptions from this simple financing model are hedge funds, which may incur substantial amounts of other liabilities, such as loans and financial derivatives.

Insurance corporations and pension funds (ICPFs) collect funds by offering insurance and pension schemes. Insurance corporations may offer insurance products to the public, as well as pension schemes to groups of employees. Pension funds are restricted by law to offering pension schemes to specified groups of employees and self-employed persons. The liabilities of ICPFs consist mainly of insurance technical reserves, which are recognised in the financial accounts as life insurance and annuity entitlements and pension entitlements. Mandatory social (health or pension) security funds managed by general government are not included in this definition.

A fourth group of financial intermediaries is determined residually as "other financial intermediaries", which together with financial auxiliaries and captives are referred to as "other financial institutions excluding non-MMF ifs". This sub-sector is very heterogeneous and includes, for example, FVCs engaged in securitisation transactions, security and derivatives dealers, financial corporations engaged in lending (mainly financial leasing or factoring companies) and other specialised financial corporations. These institutions are less regulated and their

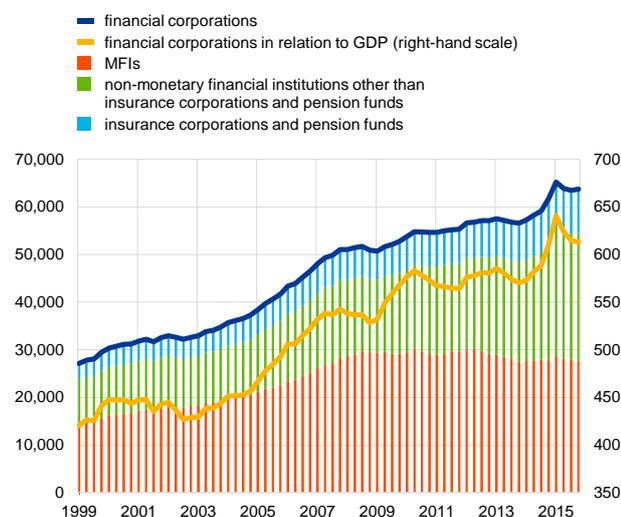
economic and financial importance varies widely between countries. Euro area statistics for these institutions are typically based on indirect information, e.g. from securities markets or counterparty sector information (e.g. MFI loans to other financial institutions). Euro area-wide data collection exists only for FVCs and is based on an ECB regulation. FVCs are created to purchase assets, such as portfolios of loans originated by an MFI or other lender. FVCs finance the purchase of such assets from the original holder by issuing asset-backed securities (ABSs).¹⁵ FVCs thus increase the liquidity of the original holder and allow the purchasers of the ABSs to invest in a specified pool of assets. Owing to the lack of harmonised data sources that would allow the separate identification of these sub-sectors, other financial intermediaries are, for the purpose of the euro area financial accounts, grouped together with financial auxiliaries and captives.

3 The role of non-MFIs within the euro area financial system

Chart 1

Total financial assets held by euro area financial corporations

(outstanding amounts; left-hand scale: EUR billions; right-hand scale: percentages of nominal GDP)



Source: ECB.

Notes: Financial corporations and MFIs excluding the Eurosystem. The latest observations are for the fourth quarter of 2015.

In the years preceding the crisis, both bank and non-bank financial intermediaries boosted risk taking and credit growth and facilitated a rapid expansion of the financial sector (see Chart 1).

Financial intermediaries exploited securitisation as a means of managing their balance sheets more flexibly and thereby increased overall credit supply. At the same time, (risky) illiquid loans were transformed into short-term, money-like marketable instruments, which were perceived to be almost risk-free and were held by banks or sold on to households, firms and institutional investors. The outbreak of the sub-prime crisis in the United States in 2007 revealed that these developments were unsustainable. In the years that followed, the collapse of securitisation via non-MFI conduits, often sponsored by banks, contributed, among other factors, to the sharp contraction in the flow of bank credit. Banks were no longer able to transfer risk off their balance sheets, a process that had facilitated further loan origination, or even had to bring risks that had been moved off their books back onto their balance sheets. This experience illustrates the capacity of accounting and regulatory changes to blur

¹⁵ For a precise description, see the background note on FVC statistics collected under Regulation ECB/2013/40, which is available on the ECB's website at <https://www.ecb.europa.eu/stats/money/fvc/html/index.en.html>

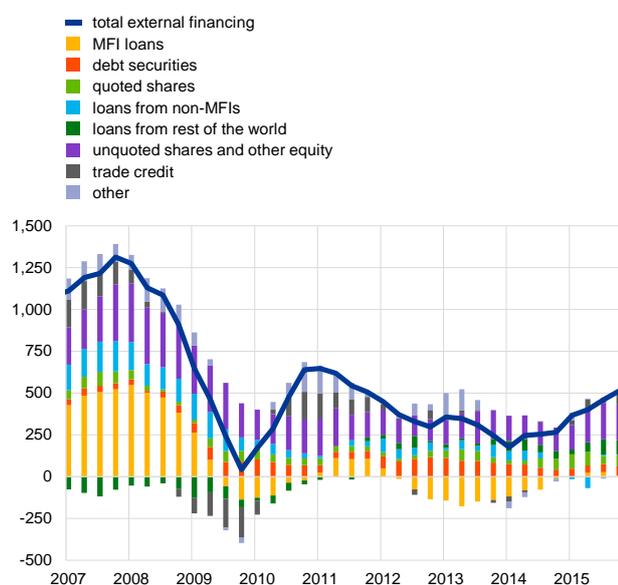
the line between bank and non-bank lending, boosting the risk-taking channel and altering the transmission of monetary policy.¹⁶

The size of the euro area financial sector has continued to increase since the global financial crisis, but at a slower pace and with diverging developments across MFIs and non-MFIs. Between the end of 2008 and the end of 2015, financial assets held by euro area financial corporations increased from €51 trillion (528% of GDP) to €64 trillion (613% of GDP). The share of these assets held by MFIs fell from 58% to 43% over this period. By contrast, the share held by non-MFIs rose from 42% to 57%. Of this, non-MFIs other than ICPFs accounted for a 42% share (up 11.8 percentage points when compared with the end of 2008), with ICPFs accounting for 15% (up 2.7 percentage points).

Chart 2

Total external financing of euro area NFCs

(annual flows; EUR billions)



Source: ECB.

Notes: "Other" is the difference between the total and the instruments included in the chart and includes inter-company loans and the rebalancing between non-financial and financial accounts data. The latest observations are for the fourth quarter of 2015.

Banks have experienced a slowdown in balance sheet growth or a shedding of assets as a result of the global financial crisis and the euro area sovereign debt crisis and associated regulatory changes.

In particular, on the credit supply side, the fragile economic environment triggered a surge in non-performing loans and a marked deterioration in the balance sheets of banks. At the same time, stricter regulation and supervision, coupled with feeble growth and low interest rates, have challenged the existing business models of banks, forcing them to adapt. However, the ECB's non-standard measures have provided liquidity and supported credit, mitigating the risks of disorderly deleveraging in the banking sector as a whole. On the credit demand side, economic weakness and depressed asset prices lowered the collateral value underpinning loans to the non-financial private sector. Together, this resulted in a net tightening of credit standards and a restriction of bank credit to NFCs and households in 2008 and 2009, and again in 2011 and 2012.

While the net flow of finance from MFIs to NFCs contracted in 2009 and 2010, and again between

2012 and 2014, the flow of finance from non-MFIs remained positive (see Chart 2). Over this period, the primary form of financing offered by non-MFIs took the form of market and non-market-based equity financing, the issuance of debt securities and the provision of loans. The sustained provision of funding from non-MFIs after

¹⁶ See also Altunbas, Y., Gambacorta, L. and Marqués-Ibáñez, D., "Securitisation and the bank lending channel", *European Economic Review*, 53(8): 996-1009, 2009 and Moutot, P. et al, "The role of other financial intermediaries in monetary and credit developments in the euro area", *Occasional Paper Series*, No 75, ECB, Frankfurt am Main, October 2007.

the crisis hit was supported by a range of factors and has had a stabilising impact on the euro area economy.¹⁷

- **First, very low interest rates and the associated search for yield by investors have supported financial intermediation by non-MFIs.** Specifically, the activities of non-MFIs were helped by factors impacting the portfolio choices on the asset side of the non-financial sectors, such as lower returns on bank deposits, falling risk premia and a recovery in a range of asset markets. On the liability side, progress on repairing balance sheets allowed firms in the euro area to tap financing sources other than bank credit, such as equity and corporate debt issuance. Insofar as these developments were related to the low interest rates resulting from the ECB's monetary policy, they provide another illustration of the mechanics of the risk-taking channel for monetary policy transmission.
- **Second, structural factors, such as demographic trends, have also benefited financial intermediation by non-MFIs.** Population ageing has led to a rise in purchases of life insurance and pension investment products, partly reflecting households' increased concerns about the sustainability of both public and private pension schemes in view of lower potential growth, high sovereign debt levels and low returns on existing pension schemes.
- **Third, some non-MFIs have been less exposed to regulatory tightening than banks, opening opportunities for regulatory arbitrage.** However, large parts of the non-MFI sector in the euro area, such as ICPFs, are in fact subject to extensive regulation and supervision. As a result, regulatory arbitrage is likely to have played at best a secondary role in the observed shift of financial asset holdings from banks to non-MFIs in these cases.
- **Fourth, the rising share of non-MFIs in the euro area financial sector also reflects methodological changes.** The transition to the ESA 2010 implied the assimilation of a large set of entities, such as financing SPEs, into the group of non-MFIs, having previously been classified in the NFC sector alongside the firms they are typically serving. In fact, the rapid expansion of financing SPEs explains some 15% of the overall increase in the size of the financial sector between the end of 2008 and the end of 2015.

Data improvements over time will make it possible to isolate and analyse in greater detail financial flows across sectors. In future, a more conclusive assessment might be feasible once longer time series of new data providing a "who-to-whom" breakdown of marketable instruments become available. The ECB began publishing such data in April 2016 (see Box 2). These statistics may be used, for instance, to conduct detailed analyses of the role of various institutional sectors in providing direct and indirect financing to the different parts of the economy. Together with macroeconomic, financial market and confidence indicators, these data can also

¹⁷ See also the articles entitled "The interplay of financial intermediaries and its impact on monetary analysis", *Monthly Bulletin*, ECB, January 2012 and "The financial crisis in the light of the euro area accounts: a flow-of-funds perspective", *Monthly Bulletin*, ECB, October 2011.

provide a better insight into the portfolio investment behaviour of different economic sectors.

Box 2

Extension of the euro area accounts (EAA) with new data on a “who-to-whom” basis for marketable securities

In April 2016, the ECB began publishing quarterly data on securities on a “who-to-whom” basis as part of the financial accounts within the euro area accounts (EAA) framework.¹⁸

Data on a “who-to-whom” basis refer to financial transactions and positions for which both the creditor sector (asset holder) and debtor sector (issuer of the corresponding liability) are simultaneously identified. They represent an important extension of the traditional presentation of the financial accounts. In the traditional presentation, the financial portfolio of a sector is presented, distinguishing instrument type and maturity where applicable, but without detail regarding the counterparty issuing sectors (i.e. the sectors for which the financial claims in the portfolio are liabilities). Similarly, the liabilities of each sector are broken down by instrument and maturity where applicable, but no detail is offered as to which counterparty sectors are the creditors of those liabilities. The “who-to-whom” presentation, therefore, enhances the information provided in the financial accounts by revealing the full web of linkages between holders and issuers at the institutional sector level.

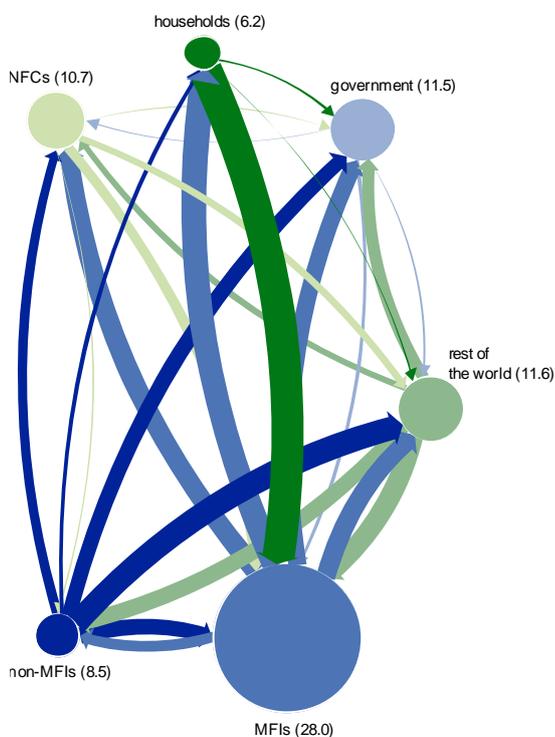
The data are available as quarterly time series for the euro area, starting in the fourth quarter of 2013, and comprise outstanding amounts, financial transactions and revaluations. Three instrument types are distinguished, namely debt securities (differentiating short-term from long-term, based on their maturity at issuance), listed shares and investment fund shares/units (which combine shares/units issued by MMFs and those issued by non-MMF IFs). Euro area residents are categorised into eight institutional sectors (households, NFCs, MFIs, non-MMF IFs, other financial intermediaries, insurance corporations, pension funds and general government), both as holders and as issuers of securities. Non-euro area residents are then added as holders of securities issued by the various resident sectors. Non-residents are also considered with regard to securities they have issued if the securities are held by any of the resident sectors.

¹⁸ The data will be published every quarter as part of the second and complete press release on euro area economic and financial developments by institutional sector.

Chart A

"Who-to-whom" funding relationships (loans, deposits and debt securities)

(outstanding amounts in the fourth quarter of 2015; EUR trillions)



Notes: The size of the nodes is proportional to the combined liabilities of each sector in the form of loans, deposits and debt securities (including intra-sector claims). The amounts outstanding of these combined liabilities are indicated in brackets. Deposits can only be liabilities for the MFI sector, the government and the rest of the world. The width of the arrows linking two sectors indicates the total amount of funding from one sector to another sector when combining those instruments. Only combined funding relationships larger than €150 billion are plotted.

Data on a “who-to-whom” basis are

compiled in an analogous way to other

financial accounts data.

This means that different source statistics are prioritised and combined, filling any coverage gaps in them and ensuring that the classification and valuation of all transactions and positions is consistent with the ESA 2010. Data on a “who-to-whom” basis for loans and deposits have been available within the EAA since 2010. For marketable securities, various ECB source statistics have for some time already contained sufficient detail on counterparties to also allow a derivation of “who-to-whom” data for several combinations of holder and issuing sectors. Many gaps still existed, but they have now been closed with the collection of securities holdings statistics by the ECB since early 2014.¹⁹ A “who-to-whom” presentation of the financial accounts that also covers marketable securities has therefore only recently become possible.

Notwithstanding the central role of the MFI sector in the financing of all sectors in the euro area economy, non-MFI financial institutions are also an important source of direct funding, especially for the government and NFC sectors. This is evident from Chart A, which depicts the network of inter-sector claims resulting from combining all instruments

available on a “who-to-whom” basis representing debt – i.e. loans, deposits and debt securities. The significant funding of MFIs by non-MFIs also hints at an indirect role for non-MFIs in the provision of credit to other sectors. Finally, non-MFIs are pivotal in the channelling of credit between the euro area and the rest of the world.

4 The role of various non-MFI sectors in the euro area

Other OFIs constitute the largest group of non-MFIs. This is a residual group comprising a very heterogeneous set of institutions.²⁰ Together this group holds a

¹⁹ See also the article entitled “Who holds what? New information on securities holdings”, *Economic Bulletin*, Issue 2, ECB, March 2015.

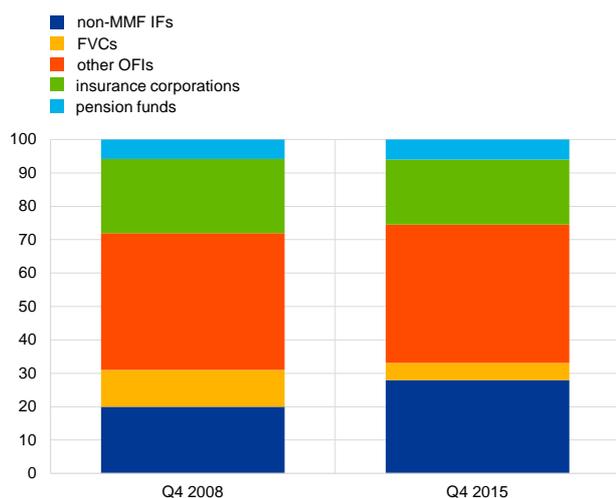
²⁰ For the purpose of this section, the category “other OFIs” is defined differently from the classification presented in Table 1 of Box 1. Owing to data limitations, only non-MMF IFs and FVCs can be singled out. Consequently, the assets held by other OFIs have been calculated as a residual by subtracting the assets held by non-MMF IFs and FVCs from the assets held by the aggregate OFI sector.

41% share in the total financial assets of non-MFIs (see Chart 3). Non-MMF IFs and insurance corporations (ICs) account for 28% and 19% respectively, while FVCs and pension funds (PFs) play a significantly smaller role.

Chart 3

Share of total financial assets held by euro area non-MFIs by sector

(outstanding amounts; percentages)



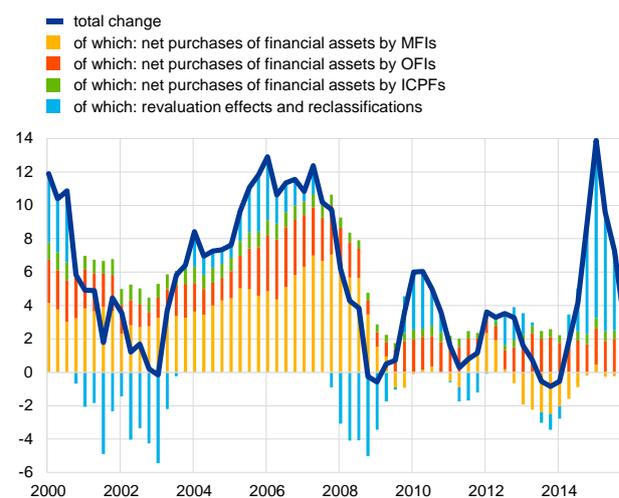
Source: ECB.

Notes: The assets held by other OFIs have been calculated by subtracting the assets held by non-MMF IFs and FVCs from the assets held by the aggregate OFI sector.

Chart 4

Changes in total financial assets held by euro area financial corporations

(outstanding amounts; annual percentage changes; percentage point contributions)



Source: ECB.

Note: Financial corporations and MFIs excluding the Eurosystem. The latest observations are for the fourth quarter of 2015.

Half of the increase in the size of the financial sector between the end of 2008 and the end of 2015 can be attributed to actual transactions by OFIs

(see Chart 4). Most of the other half was due to revaluation effects associated with the recovery and the subsequent sharp increase in stock and bond prices. Within OFIs, 40% of the net accumulation of financial assets was concentrated in non-MMF IFs, with other OFIs accounting for the remainder.

4.1 Non-money market fund investment funds (non-MMF IFs)

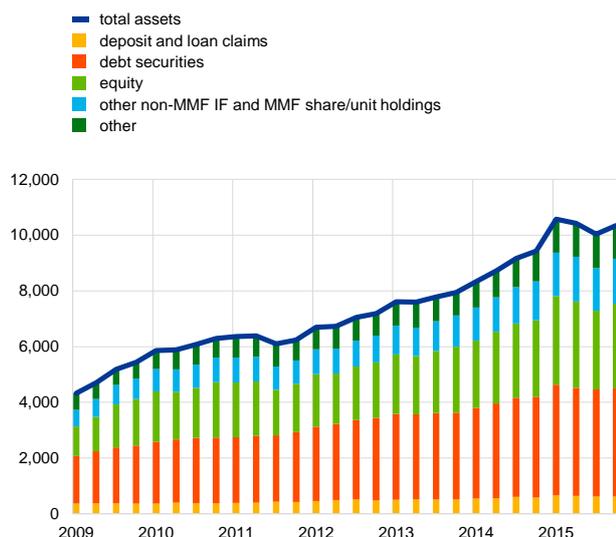
Non-MMF IFs account for an increasing share – currently 28% – of the total financial assets held by euro area non-MFIs (see Chart 3). They thus play a significant and increasing role in providing market-based financing to euro area banks and NFCs.²¹ The assets of non-MMF IFs are primarily concentrated in debt securities and equity holdings (see Chart 5). Non-MMF IFs hold around 13% and 9% of the debt securities issued by euro area NFCs and banks respectively (see Chart 6). Moreover, non-MMF IFs also hold around 14% of the quoted shares issued by these two sectors. Importantly, however, 40% of their debt security holdings and 60% of their shares and other equity holdings consist of securities

²¹ See also the article entitled "Harmonised ECB statistics on euro area investment funds and their analytical use for monetary policy purposes", *Monthly Bulletin*, ECB, August 2010.

issued by the rest of the world. This may reflect both an investor preference for holding globally diversified portfolios and the small size of euro area stock and bond markets relative to global securities markets.

Chart 5
Financial assets held by euro area non-MMF IFs

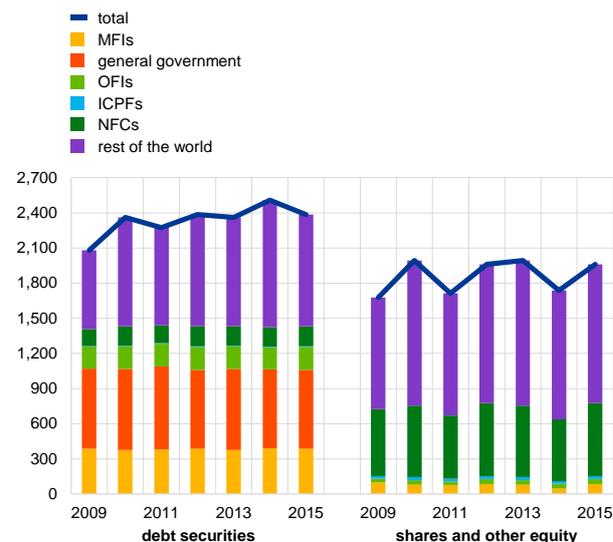
(outstanding amounts; EUR billions)



Source: ECB.
Note: The latest observations are for the fourth quarter of 2015.

Chart 6
Euro area non-MMF IFs' holdings of securities, by sector

(outstanding amounts; EUR billions)



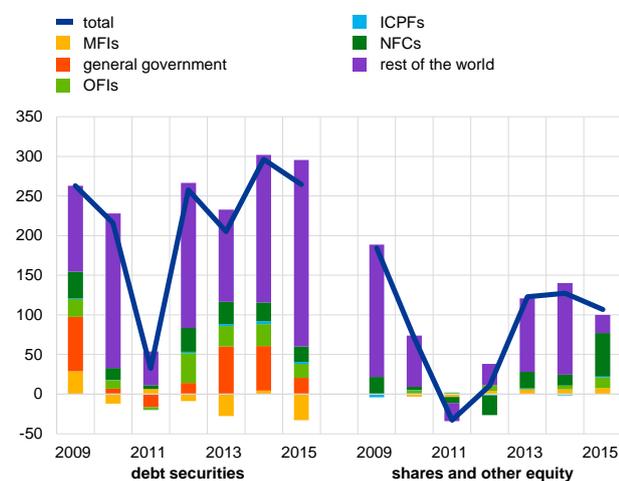
Source: ECB.
Note: The latest observations are for the fourth quarter of 2015.

Possible reasons for the increased role of the non-MMF IF sector since the global financial crisis include the low interest rate environment and demographic dynamics. In particular, low deposit rates have enhanced the attractiveness of investing in securities, thereby benefiting the business of non-MMF IFs. Similarly, monetary policy measures have facilitated a reduction in risk premia, a rise in investor confidence and a decrease in investor risk aversion, all of which support stronger inflows into non-MMF IFs. This would seem to be in line with the mechanics of the risk-taking channel of monetary policy transmission that was discussed in Section 2. Finally, non-MMF IFs have profited from concerns among euro area households about their future pension benefits. Such concerns have led to higher savings which, in the face of low interest rates, have been channelled towards riskier assets to achieve the level of return that enables households to accomplish the desired degree of lifetime consumption smoothing.

Chart 7

Euro area non-MMF IFs' net purchases of securities, by sector

(annual flows; EUR billions)



Source: ECB.

Note: The latest observations are for the fourth quarter of 2015.

Since the peak of the global financial crisis at the end of 2008, non-MMF IFs' holdings of equity securities have risen more than their holdings of debt securities (see Chart 5). Valuation effects,

specifically the sharp recovery in stock prices since the lows seen after the collapse of Lehman Brothers, are the main explanation for the strong increase in equity holdings. In fact, net purchases of debt securities by non-MMF IFs have been considerably larger than net purchases of equities (see Chart 7).

Moreover, non-MMF IFs have tended to favour foreign investments (see Chart 7), possibly in relation to some waning of euro area investors' home bias during the peak of the sovereign debt crisis. They have also modestly scaled back their exposure towards the euro area banking sector. To some extent, this can be explained by the declining financing needs of euro area banks owing to their deleveraging efforts and their ability to obtain funding through customer deposits and central bank facilities.

4.2 Financial vehicle corporations (FVCs)

The financial asset holdings of FVCs have fallen steadily since the global financial crisis, reflecting the decline in securitisation transactions that previously allowed banks to shift risk off their balance sheets (see Chart 8).²²

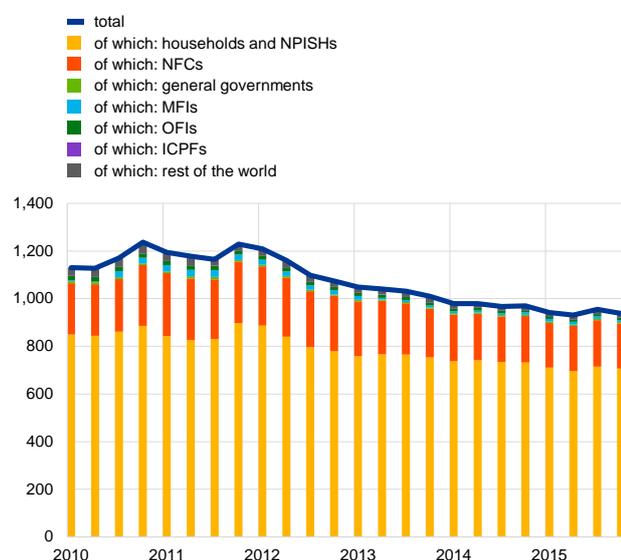
Primarily involved in the securitisation of loans to households, FVCs hold 12% of the total loan claims on euro area households. For loan claims on euro area NFCs, the share of FVCs is smaller at 3%.²³

²² See also the article entitled "New features in monetary and financial statistics", *Economic Bulletin*, Issue 8, ECB, December 2015.

²³ Both figures are reported net of intra-sectoral loans.

Chart 8**Securitised loans originated by euro area MFIs, by borrowing sector**

(outstanding amounts; EUR billions)



Source: ECB.

Note: The latest observations are for the fourth quarter of 2015.

Possible drivers of the decline of FVCs include deleveraging pressures and the stigma attached to these instruments in the wake of the global financial crisis. As banks and the non-financial private sector consolidated their balance sheets, the credit growth necessary to sustain the continued securitisation of loans evaporated. At the same time, the prominent role of FVCs in the financial market turmoil of 2008 and 2009, regulatory developments and other structural factors triggered a decline in securitised products, irrespective of the potential of simpler, more transparent and more robust securitisation to enhance financial intermediation.²⁴

4.3 Other OFIs

Among non-MFIs in the euro area, financial assets of other OFIs have grown significantly in recent years, accounting for 41% of the total, with about a quarter of this share attributable to financing SPEs.²⁵ In order to benefit from a favourable tax regime and financial technology, financing SPEs – which are subsidiaries of another company – are typically located in a country, within or outside the euro area, which is different from the domicile of their parent.²⁶ Bond market financing obtained by financing SPEs and returned to their parent in the form of loans account for close to one-third of the increase in total financial assets held by other OFIs since the global financial crisis.

Other OFIs mainly hold equity and loan claims on their asset side (see Chart 9). This is due to the fact that the other OFI sector is generally dominated by highly specialised business models. Venture capital corporations, development capital companies and holding companies provide risk capital to firms, whereas financial leasing companies and financing SPEs provide loans.

²⁴ See "The case for a better functioning securitisation market in the European Union", Bank of England and European Central Bank staff, May 2014.

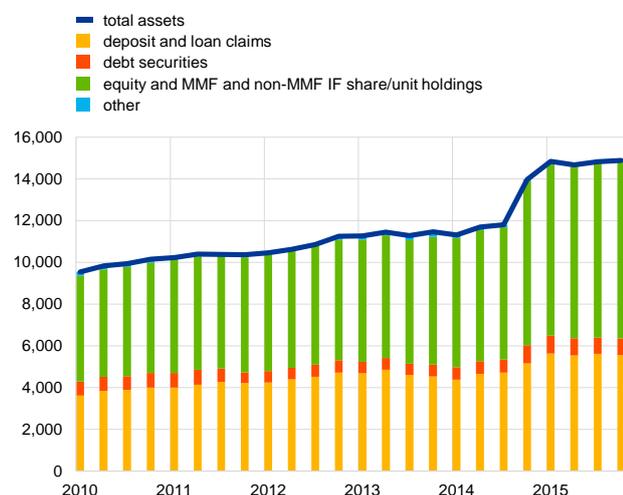
²⁵ See also van der Veer, K., Klaaijzen, E. and Roerink, R., "Shedding a clearer light on financial stability risks in the shadow banking system", *Occasional Studies*, Vol. 13, No 7, De Nederlandsche Bank, 2015.

²⁶ According to the ESA 2010, domestic financing SPEs are classified as subsidiaries in the OFI sector only if they are independent institutional units (i.e. they enjoy autonomy of decision), while those located in a foreign country always belong to the OFI sector.

Chart 9

Financial assets held by other OFIs resident in the euro area

(outstanding amounts; EUR billions)



Source: ECB.

Notes: The assets held by other OFIs have been calculated by subtracting the assets held by non-MMF IFs and FVCs from the assets held by the aggregate OFI sector. The latest observations are for the fourth quarter of 2015.

As more granular data on other OFIs are scarce and the category encompasses a very heterogeneous set of entities, comprehensive analysis is challenging.

However, it is likely that reductions in risk aversion and improvements in investor confidence since the global financial crisis have bolstered the business of at least some other OFIs, such as venture capital corporations, as was highlighted in Section 2. In addition, in the same way that tax arbitrage is one of the motives for the establishment of financing SPEs, regulatory arbitrage might be one of the factors shaping trends in the other OFI sector, although firm evidence of this is not easily available.

4.4 Insurance corporations and pension funds (ICPFs)

The financial assets of ICPFs account for 25% of total assets held by euro area non-MFIs.

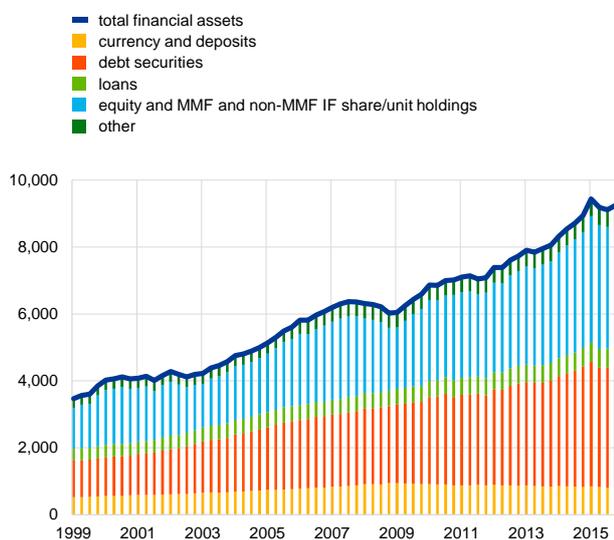
The portfolios of ICPFs are primarily invested in debt securities, particularly of governments, and equities (see Charts 10 and 11). This reflects their attempts to match their assets with their liabilities, which mostly consist of life insurance and pension claims with a long residual maturity. The preference of ICPFs for government bonds is largely due to their institutional asset allocation policies and the relatively small size of the euro area corporate bond market.

ICPFs are also an important source of funding for the private sector. They hold 19% and 15% of the debt securities issued by euro area NFCs and banks, respectively, in addition to around 3% of the quoted shares issued by these sectors. At the same time, ICPFs hold 20% of the debt securities issued by euro area sovereigns. By contrast, loans by ICPFs to households and NFCs in the euro area are relatively marginal, accounting for a mere 3% and 1%, respectively, of the total loan claims against these borrowers.²⁷ However, in some euro area countries insurance corporations have started to compete with banks in the household mortgage market, as new legislation and technological innovation have enabled the provision of loans via specialised internet platforms.

²⁷ Figures on loans are reported net of intra-sectoral exposures.

Chart 10**Financial assets held by euro area ICPFs**

(outstanding amounts; EUR billions)

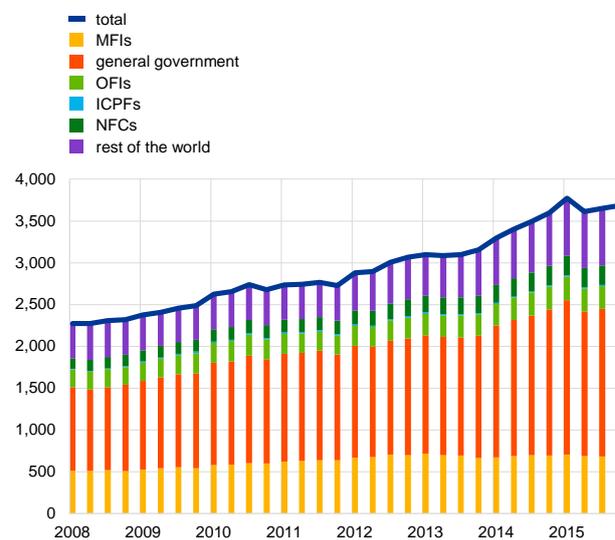


Source: ECB.

Note: The latest observations are for the fourth quarter of 2015.

Chart 11**Euro area ICPFs' holdings of debt securities, by issuing sector**

(outstanding amounts; EUR billions)

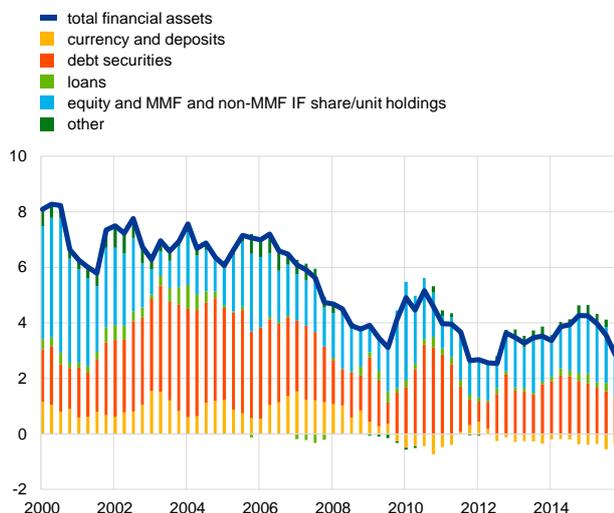


Source: ECB.

Note: The latest observations are for the fourth quarter of 2015.

Chart 12**Financial investment by euro area ICPFs**

(annual percentage changes; percentage point contributions)



Source: ECB.

Note: The latest observations are for the fourth quarter of 2015.

After declining modestly in the immediate aftermath of the global financial crisis, the financial assets of ICPFs have significantly expanded in recent years.

The drivers of this development are likely to be similar to those mentioned in the case of non-MMF IFs and include factors related to population ageing and the positive effects of an accommodative monetary policy on confidence, risk taking and the prices of securities. In this environment, ICPFs have increased their risk exposure – within the limits posed by statutory requirements – by investing in equities and the shares/units of non-MMF IFs rather than in debt securities (see Chart 12). In fact, annual flows from ICPFs into these instruments in 2014 and 2015 reached levels similar to those observed in 1999 and 2000. Again, this exemplifies the functioning of the monetary policy transmission channels described in Section 2.

A look at the period before the global financial crisis provides further evidence that the portfolio choices of ICPFs respond to financial cycles.²⁸ In particular, between 2003 and 2008, ICPFs increased

²⁸ Time series for ICPFs go back to the beginning of the millennium, which is further than for the other non-MFI sectors covered in Section 4.

their debt securities holdings significantly more than their exposure to equities, in spite of favourable stock markets and a flattening of the yield curve (see Chart 12). This behaviour reflected a change in risk appetite among ICPFs after the losses incurred in the wake of the bursting of the dotcom bubble in 2000 forced them to repair their balance sheets. In addition, the response of ICPFs to a variety of regulatory, valuation and accounting changes also played a role.²⁹

5 Concluding remarks

With euro area banks cutting back the supply of credit in the wake of the global financial and the euro area sovereign debt crises, the role played by the non-MFI sectors in financial intermediation has increased and has helped to mitigate the effects of the crises on the euro area economy. This trend was facilitated by very low interest rates leading to a search for yield by investors, structural factors, such as an ageing population in the euro area, and some scope for regulatory arbitrage. In this environment, non-MMF IFs and ICPFs have been particularly prominent in increasing their role in euro area financial intermediation in recent years. As large holders of debt securities and equity, these entities have provided a significant amount of financing to the real economy, although not exclusively to the benefit of the euro area, as they are generally holders of globally diversified portfolios. Among other OFIs, venture capital corporations are likely to have profited from a search for yield, while the activities of financing SPEs are often related to tax arbitrage by sponsoring corporations.

These developments have implications for monetary policy transmission. As Section 2 has shown, the channels of monetary policy transmission to the real economy apply – in different forms – to MFIs and non-MFIs alike. However, differences in the business models between these two groups of euro area financial intermediaries, also reflected in terms of regulation and supervision, imply that the generally larger role for non-MFIs may speed up the – indirect – transmission of monetary policy.

The increased role of non-MFIs calls for a more integrated analysis of the interplay between different financial intermediaries and transmission channels that complement or substitute the traditional bank lending and interest rate channels. As regards individual sectors among non-MFIs, non-MMF IFs and ICPFs may have less significant implications for monetary policy transmission. Like MFIs, they are subject to regulation and supervision, implying that impulses from monetary policy are likely to find their way to the real economy in a manner similar to MFIs, albeit via different channels. By contrast, the same is not necessarily true for the other OFI sector. As some other OFIs are not subject to the same level of scrutiny as banks, they warrant special monitoring, because the financing they provide has the

²⁹ See also “ESRB report on the regularity treatment of sovereign exposures”, European Systemic Risk Board, March 2015, “Risk transfer and the insurance industry”, Global Financial Stability Report, *World Economic and Financial Surveys*, International Monetary Fund, April 2004 and “Risk management and the pension fund industry”, Global Financial Stability Report, *World Economic and Financial Surveys*, International Monetary Fund, September 2004.

potential to be of a more cyclical nature, with implications for the stability of monetary policy transmission. However, specifically in this corner of the euro area financial system, data are scarce, although longer time series and new statistics, such as the "who-to-whom" data presented in Box 2 of this article, may remedy some of these shortcomings in the future.