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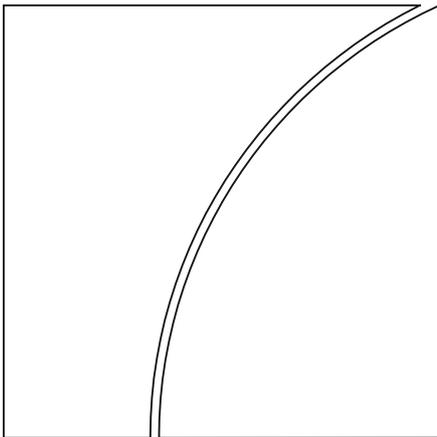
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Using financial accounts

Proceedings of the IFC – Central Bank of the Republic
of Turkey Workshop on the use of financial accounts in
Istanbul on 18-20 March 2019

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Using financial accounts – a central banking perspective

Burcu Tunç, Burcu Çakmak, Cansu Gökçe Zeybek¹ and Bruno Tissot²

Executive summary³

The development of financial accounts (FA) is high on the global policy agenda. These accounts have become an essential element of the Systems of National Accounts (SNA), drawing from the traditional description of real economic aggregates but augmented to present information on financial flows and positions. Several steps have been taken in recent years to refine important aspects of this framework, with the ultimate goal of building “integrated sectoral financial accounts”.

To this end, **two areas of focus** are important. One relates to collecting the statistics that are needed to “fill” standard economic accounts. Large data collections have been undertaken since the 2007–09 Great Financial Crisis (GFC) to build better-quality, more comprehensive and flexible data sets, which can greatly facilitate the actual compilation of FA. A second important issue is to highlight how these statistics can be useful; in particular, to show how the wealth of information provided by FA can support public policy.

These areas are of particular relevance for central banks, as both producers and users of data.

As producers, they have been highly involved in the statistical exercises launched to address the challenges highlighted by the GFC – and they are de facto in charge of the compilation of FA in most countries. As data users, central banks have a steadily increasing demand for information in order to understand, and act on, the financial system in pursuing monetary and financial stability policy objectives. FA represent a key opportunity to address these information needs.

Against this backdrop, a workshop on the “Use of financial accounts” was organised by the Central Bank of the Republic of Turkey (CBRT) with the BIS’s Irving Fisher Committee on Central Bank Statistics (IFC). Convening in March 2019 in Istanbul, Turkey, this workshop was attended by officials from central banks, international organisations and national statistical offices from almost 30 jurisdictions across the globe, as well as by representatives from other public agencies, the financial sector and academia. This proved a useful opportunity to take stock of the initiatives conducted by the central bank community and other parties to enhance the actual use of FA information in conducting financial stability and monetary policy.

Feedback from the workshop **highlighted the following points:**

- The system of financial accounts has become a **key building block** of economic statistics, reflecting the growing importance of finance in today’s life. Important steps have been taken in recent years to refine this framework. In particular, the various post-crisis initiatives for better-quality, more comprehensive and flexible granular data sets have proved instrumental.
- As a result, significant progress has been made in major advanced and emerging market economy countries. Yet many jurisdictions are still **struggling with FA compilation** in practice – which requires important human, IT and financial resources. These difficulties can be mitigated

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³ The views expressed here are those of the authors and do not necessarily reflect those of the BIS, the CBRT or the IFC.

by setting up carefully defined steps for progressively enhancing compilation and by following a long-term prioritisation plan.

- Once initial compilation efforts have been made, the **focus should turn increasingly to the user side**. This is of particular relevance for central banks in their dual role of producers and users of data. From this perspective, FA may not be sufficiently explored despite their vast potential. In particular, this information can usefully support central bank work in, for example, statistical compilation, macroeconomic analysis and monitoring, forecasting, and monetary and financial stability.
- For instance, the FA framework has proved instrumental in **assessing financial intermediation** and the role of non-traditional providers of financial services. It also provides a wealth of information for the analysis of the financial positions of economic agents that use financial services. National experience shows that this can be particularly valuable when seeking to **understand the behaviour** of households and corporates as well as in detecting potential fragilities.
- A key issue is to make sense of the data collected and **ensure that the insights gained can support policy effectively** – by transforming data into information and then knowledge. The challenges include, first, to ensure that FA information is consistent with the other types of statistics available. Second is to facilitate the combination of micro- and macro-level statistics. And a final one is to make sure that statistics based on the residency concept remain relevant in an increasingly globalised economy.
- To **address these challenges**, it is important to enhance the interaction between users and compilers as well as to strengthen internal and external communication. In addition, the compilation of national, residency-based FA can be usefully complemented by the production of global flow-of-funds data, the development of database on multinational enterprises (MNEs), the setup of consistent distributional indicators, the linking of micro- and macro-data sets, and the provision of nationality statistics.
- The increased availability of FA is likely to **trigger new demands from users** that may be difficult to predict at the current stage, putting a premium on collecting and combining granular data in a flexible way.

The **related presentations**, referred to in this overview and included in this *IFC Bulletin*, focused on various aspects related to the use of FA. They covered (1) ongoing compilation exercises to develop the FA framework; (2) FA's effectiveness as a tool to support public policy in various areas, with a focus on central bank activities; (3) the richness of this framework to address issues of current relevance in the global financial system, namely the evolving patterns of financial intermediation and the assessment of economic agents' balance sheets and associated vulnerabilities; and (4) the main challenges faced, especially as regards the combination of the real and the financial sides of the national accounts, micro- and macro-level data integration, and the impact of globalisation.

1. The financial accounts framework

The SNA/FA framework

The FA framework is built on the SNA, which aims to establish internationally agreed practices for compiling comparable measures of economic activity. While these standards were originally devoted primarily to the measurement of the "real sphere" of the economy, various additions have been brought

in subsequent years, especially with the last version of the SNA (2008 SNA; see European Commission et al (2009)).

In this context, **significant efforts have been made to compile sectoral financial accounts that are correctly integrated**, in the sense "(...) that all the consequences of a single action by one agent are necessarily reflected in the resulting accounts, including the impact on measurement of wealth captured in balance sheets" (SNA 2008, #1.2). These accounts should cover (i) all the financial transactions observed in the economy and with the rest of the world (RoW); (ii) the balance sheet positions of economic agents (especially their financial assets, liabilities and net worth); and (iii) the financial interlinkages across sectors as presented in "from-whom-to-whom" (FWTW) tables – with these three elements constituting the core of what is usually understood in the concept of "financial accounts" (for an introduction, see van de Ven and Fano (2017)). The aim is to complement the description of real economic developments – ie the "current accounts", which basically show resources transactions across sectors – with a presentation of their financial counterparts – ie the "accumulation accounts and balance sheets" – to be presented in full consistency. A central element supporting the integration of these accounts in the SNA is its underlying "quadruple-entry bookkeeping" accounting system (Tissot (2016a)).

This statistical work did not originate in a vacuum, independently of the potential usage of the data collected. In fact, the goal of the developers of the SNA framework (from the outset, almost one century ago) was to prove its **serviceability for conducting economic policy**. For instance, the "Richard Stone Report" (United Nations (1947)) clearly stated that "this system of analysis has grown out of the needs of economic policy". At that time, the SNA was seen not only as a coordinating framework for monitoring developments in the economy as a whole, but also as a tool for supporting policy – because "it is the interrelationship of transactions that is important [in the case of] the formulation of economic policy".

The expansion of FA has been much more recent compared with the "real side" of the SNA – extending only over the past few decades, with the notable exception of the US financial accounts, which cover the period since 1950s on a quarterly basis. But a key driver for this development was equally to ensure its usefulness for public authorities, especially policymakers dealing with the functioning of the financial system – including the central banks that are usually tasked with ensuring monetary and financial stability. The need to focus on the usefulness of these data was clearly recognised when the GFC occurred, as policymakers realised that "the increased availability of sectoral financial accounts and balance sheets would advance the analysis of the systemic risks and vulnerabilities" – an analysis that had clearly proved itself inadequate at that time.⁴

Ongoing compilation initiatives

In fact, the recent **expansion of FA was clearly spurred by the consequences of the GFC**, with the decision to launch various and important data collections especially in the context of the G20-endorsed Data Gaps Initiative (DGI), as recalled in the *FSB presentation*. The DGI's first phase (2009–15) focused on the formulation of a strategy "to promote the compilation and dissemination of the balance sheet approach, flow of funds, and sectoral data more generally". This initial, conceptual work triggered in 2015 the decision to foster FA compilation as a way to promote "the regular collection and dissemination of comparable, timely, integrated, high quality, and standardized statistics for policy use" during the second phase of the DGI covering 2016–21 (IMF and FSB (2015)).

In this context, G20 countries were required to "compile and disseminate, on a quarterly and annual frequency, sectoral accounts flows and balance sheet data, based on the internationally agreed template

⁴ See Financial Stability Board and International Monetary Fund (2009), esp. #52, p 23.

(...) and develop from-whom to-whom matrices for both transactions and stocks to support balance sheet analysis”⁵ (recommendation #8). The result of these compilation efforts is, for instance, available for more than 30 countries (including non-G20 ones) on the OECD website.⁶ FA information is also an important item in the IMF SDDS initiative (as an encouraged item), while the SDDS Plus standard⁷ requires “a minimum set of internationally comparable sectoral financial balance sheets with a set of subsectors and the standard financial asset and liability instrument classification derived from the SNA”.

In addition, and as analysed in the *OECD presentation*, **several other recommendations of the DGI also support the development of the FA framework**, at least to some extent. These recommendations focus on:

- The collection of financial information covering specific entities (eg #5 shadow banking), transactions (eg #5 securities financing transactions (SFT), such as repos; #6 derivatives transactions), and instruments (eg #7 debt securities).
- The compilation of statistics on international financial flows and positions (eg #10 International Investment Position (IIP); #11 international banking statistics; #12 Coordinated Portfolio Investment Survey (CPIS), #13 Coordinated Direct Investment Survey (CDIS); #14 cross-border exposures of non-bank corporations).
- The measurement of public balance sheets (eg #15 government finance statistics; #16 public sector debt).
- The collection of asset prices (eg #17 residential and #18 commercial property prices).
- The computation of distributional information (eg #3 concentration and distribution measures for Financial Soundness Indicators (FSI); #9 household distributional information).
- Organisational aspects (eg #19 international data cooperation and communication; #20 promotion of data-sharing).

Moreover, there are important synergies with other global initiatives to enhance the measurement of economic activity, for instance as regards the analysis of the digital economy or the promotion of the global Legal Entity Identifier (LEI).⁸

Much has been already achieved, and national experience shows that **FA can provide useful insights even when they are at the initial stage of their development**. Certainly, several countries around the world are still facing important problems in compiling FA, with issues such as short data length, poor timeliness and difficulties in integrating the various accounts. As emphasised in the *Conference’s opening remarks*, one successful way to address these difficulties is to set up well defined steps for progressively enhancing their compilation. Looking at the example of Turkey, even the limited information available at the start of the FA project in 2012 quickly proved its usefulness – despite the

⁵ With so-called core templates that comprise “target” and “encouraged” items, comprising three elements: current and capital accounts, financial accounts and balance sheets (with instrument and sector breakdowns) and stocks of non-financial assets (by asset type and sector). There are in addition specific requirements in terms of frequency and timeliness, as well as more advanced ambitions for shadow banking and interconnectedness (FWTW tables), at least to cover the main sectors and instruments.

⁶ See www.oecd.org/sdd/fin-stats/.

⁷ The Special Data Dissemination Standard (SDDS) was established by the IMF in 1996 to guide countries that have, or that might seek, access to international capital markets in the dissemination of economic and financial data to the public (IMF (2013)). The Special Data Dissemination Standard Plus (SDDS Plus) was established in 2012 and goes beyond the focus of the SDDS by putting an emphasis on countries that have systematically important financial sectors that are integral to the working of the international monetary system (IMF (2015)). All SDDS subscribers can, and are encouraged to, adhere to the SDDS Plus.

⁸ See FSB (2012) for an overview of the LEI initiative.

shortness of the time series and the fact that the data were available with long lags, on an annual basis, and for only a few sectors with limited coverage. Second, the Turkish FA were progressively refined at a later stage, with the move to a quarterly frequency, the extension of sectoral coverage, and then the compilation of FWTW tables. Currently, the focus has turned towards the provision of longer time series, the improvement of data awareness and the further compilation of “encouraged” breakdowns that were of a lower priority at the start of the project.

A key element behind the success of such a step-by-step approach is to develop a **consistent long-term plan to prioritise the various actions** involved, as argued in the *CBRT presentation*. Reflecting this, the ECB has a medium-term FA strategy with five main objectives – namely, addressing globalisation challenges; increasing the serviceability of FA data; enhancing household analysis; improving information on non-bank financial intermediation (NBFIs); and understanding interconnectedness at the macro level. Various related work streams have been defined to achieve these strategic objectives, reflecting the cost/serviceability trade-off, prioritisation needs, the need for close cooperation with primary statistics compilers, and developments in raw data and metadata. For instance, the “addressing globalisation challenges” objective regroups initiatives related to foreign-controlled non-financial corporations (NFCs); balance of payments (BoP)/RoW consistency; more granular functional split in RoW flows; government finance; other financial institutions (OFIs) etc.

2. FA as an analytical tool to support the conduct of central bank policies

In general, **FA offer the users of economic and financial information several benefits**, namely, their consistency over time, sectors and countries, the identification of the links between economic agents and their operations (eg production, distribution of income, and financing of spending), the impact on their balance sheets etc. As regards central banks more specifically, and as underscored by the *CBRT presentation*, national experience shows that FA can usefully support their work in various areas, such as statistical compilation, macroeconomic analysis and monitoring, forecasting, and monetary and financial stability.

Statistical compilation

Central banks’ role in the compilation of official statistics has clearly expanded in the recent decades, reflecting both the increased importance of finance in the economy and the large post-crisis data collection efforts. In practice, they are directly in charge of the compilation of FA in most countries, while National Statistical Offices (NSOs) have been dealing rather with the compilation of the “real accounts” (although there are important exceptions to this general picture). In doing so, central banks benefit from the increasingly detailed information collected on the financial system, including at the level of specific institutions, transactions or instruments. In particular, and depending on national circumstances, they now have at their disposal very large and granular loan-by-loan and security-by-security databases – representing the bulk of what is considered as “big data” by central banks (Schubert (2016); IFC (2017)). Information on derivatives transactions reported by trade repositories (TRs) is another example of the detailed data sets that are increasingly required by central banks (IFC (2018a)). Such granular information can greatly support FA compilation; for instance, detailed securities holdings statistics can ease the compilation of FWTW tables, since they provide information of the owners of the debt securities issued by debtors.

In turn, the development of FA can **support the other statistical compilation tasks** of central banks, for instance, to make existing partial estimates more exhaustive, detect data gaps, and integrate various, often disparate information sources in a consistent way. This reflects the fact that FA are based on a well defined conceptual framework, comprising comprehensive definitions and measures. The

rigour of this approach is ensured by a number of so-called identities, such as the budget identity, which provides consistency for each sector between the non-financial and financial transactions; the transaction identity, which ensures for each transaction consistency between receipts and payments; and the balance sheet identity, so that financial positions at the beginning and the end of each periods are compatible. Lastly, the information collected is designed to be coherent across countries, a precondition for developing meaningful comparisons and country aggregations.

However, compilers of statistics in central banks have to deal with a **number of shortcomings**. First, FA information can be quite complex, not sufficiently timely, subject to important revisions, and often available only in short time series; these can represent important impediments to policy use. Second, this framework may not be always consistent with the other statistics at hand for analysis (especially supervisory-type statistics when the central bank is in charge of prudential supervision), with the risk of sending inconsistent messages. Third, the actual implementation of the international standards of the SNA has to face in practice domestic exceptions and limitations.

Macroeconomic analysis and monitoring

The SNA has proved instrumental to **facilitate the analysis of the functioning of the economy as a whole** and its implications in terms of sectoral developments. The development of the FA as an increasingly important part of this SNA framework has gone hand in hand with an enhanced description of the financial sector, the economic transactions of all agents and their associated balance sheet positions. This is obviously of key interest for policymakers such as central bankers, who monitor financial developments on which to base their policy actions. As highlighted in the *ECB presentation*, FA-based information can in particular provide insights on various aspects of the national economy, supporting sectoral balance sheets assessments, financial structure analysis, and fiscal monitoring alike. At a more global level, harmonised FA concepts allow for insightful cross-country comparisons, supporting policy impact assessments as well as structural national analyses (eg the comparative size of the financial system, relative importance and composition of financial intermediation). This is obviously a key advantage for a supranational institution such as the ECB that deals with multiple domestic systems.

Another analytical advantage of the FA is the description of the **interactions between the financial and the real sides** of the economy. In particular, this helps to track the financial flows that result from saving/investment decisions in each sector and their balance sheet implications eg in terms of wealth/debt creation. Examples of central banks' use of these data include the analysis of the interactions between the current account position of the country and the specific financing needs of the domestic sectors; the measurement of the acquisition of assets throughout the economy and the tracking of the sources of funds used in their acquisition by economic agents; the role of financial intermediaries in transferring funds between borrowers and savers etc. For instance, the Central Bank of the Russian Federation (CBRF) uses FA-based information on sectoral lending/borrowing to analyse shifts in growth patterns and the evolution of economic cycles – noting that government liabilities typically increase during recessions while NFCs issue less debt.

Lastly, FA-based aggregates are increasingly **combined with micro-level insights**, representing a useful complement for authorities that need to both monitor macro aggregates and zoom in on specific areas. One of the main elements of the ECB FA medium-term strategy is to enhance the use of FA (or "serviceability") by developing micro-data-based enhancements to the aggregates compiled. Other important aspects considered from this perspective are timeliness and the provision of backdated series.

Forecasting

FA-based information is the key to a better understanding of the economy's functioning. This knowledge can greatly facilitate **macroeconomic forecasting exercises that are based on the modelling of economic agents' behaviour**. In the United States, for instance, the indicator of household sector worth derived from the FA is used in the Federal Reserve's modelling of household consumption and hence for its GDP forecasts.

The FA framework is also effective in supporting short-term forecasts, including **nowcasting exercises**. In particular, it can facilitate the work of forecasters who need to integrate partial estimations/new incoming data in a coherent way. This information can be quite complex, since a large number of economic series can be potentially used, with data provided for various frequencies, with different publication lags and revision processes, and disparate time spans.

Central bank experience has underlined the benefits of FA as an encompassing framework for incorporating most of the information available to enhance their regular monitoring of economic activity. In addition, an increasing number of central banks are relying on **big data analytics**/sophisticated statistical techniques to facilitate the digestion and summarising of incoming high-frequency data points, as well as their continuous incorporation into forecasting exercises before the release of the related official indicators – see, for instance, the US GDP and inflation nowcasting exercises conducted at the Federal Reserve Banks of New York and Cleveland (Bok et al (2017); Knotek and Zaman (2014)), or the nowcasting models (the “economist robot”) developed at the Bank of Finland⁹ that make use of the information provided by a large and diverse group of economic indicators.

Monetary stability

FA have proved to be a powerful analytical tool for supporting policies aimed at price stability, which basically rely on the **overall assessment of monetary conditions** and related economic dynamics. FA provide important contextual information, for instance, on NFC financial conditions, households' portfolio choices, housing investment and mortgage financing, and trends in the financial sector – various elements that have to be carefully considered when setting policy rates.

FA also support multiple analyses related to **how monetary policy operates**, eg to better assess its transmission mechanisms, the distributional consequences of policy decisions, and the impact of the new quantitative tools developed after the GFC (Domanski et al (2016)). For instance, the FA framework has been used by the ECB to identify among the various economic sectors the most important counterparties for its public sector asset purchase programme.

Financial stability

The FA framework provides detailed information on the accumulation of liabilities by economic agents and the financial instruments involved, facilitating the **assessment and quantification of vulnerabilities and exposures** to specific sectors and/or particular financial instruments and the related propagation mechanisms. This represents the bread and butter of financial stability risk analyses, especially for the risk assessment and surveillance exercises that sit at the core of central banks' mandates – for both those directly in charge of micro financial supervision and those focusing mainly

⁹ Including one dynamic factor model (so-called factor augmented vector autoregressive (Itkonen (2016)) and one large Bayesian VAR model (Itkonen and Juvonen (2017)) dealing with, respectively, around 70 and 50 individual series – compared to standard “bridge models” for nowcasting that are typically based on a limited number of economic statistics such as confidence survey indicators (Carnot et al (2011)).

on financial stability issues and macro financial supervision. Hence, many central banks have developed FA-based indicators on financial soundness, network analysis, and vulnerability and system risk. These approaches have brought several benefits.

First, the FA framework allows **the main risks at stake** in the financial system to be identified, in terms of vulnerabilities to potential shocks – such as a sudden shift in financial prices or a sharp rise in interest rates. For instance, the *Bank of Portugal presentation* showed that FWTW information was a key starting point when there was the need to identify financial system exposures during the euro area sovereign crisis in the early 2010s.

Second, FA provide a tool for **quantifying the risks** involved, in particular by measuring the consequences of system-wide propagation mechanisms and cross-sector spillovers (de Almeida (2015)). For instance, to calibrate the impact of a change in sovereign bond yields on economic agents' balance sheets, which can be direct – ie a decline in the value of the government debt securities in holders' portfolios – and also indirect – ie equity losses transmitted from one economic agent to another due to cross-sector holding relationships. In the Portugal case, the FWTW matrix was instrumental to simulating these contagion effects in an iterative way and tracking the progressive impact of asset devaluation through the financial network. It also helped to elucidate the mechanisms at play, and in particular to identify the importance (or "centrality") of specific counterparties in this network – for instance, to highlight the central role played by specific financial institutions in propagating shocks through the financial system.

Third, the internationally harmonised concepts supporting FA-based information is an important advantage for analysing financial stability risks with a **global systemic nature**. A global perspective is key when seeking to (i) incorporate the impact of worldwide developments in the assessment of risks faced by the domestic financial sectors; (ii) analyse the interplay between external and internal vulnerabilities; and (iii) assess cross-border contagion effects, especially in closely integrated regions such as Europe. One example relates to the European macroeconomic imbalance procedure introduced in 2011, when authorities recognised the need for globally consistent information to track how balance sheet fragilities – such as a large current account deficit or a real estate bubble – in one country could be transmitted across borders (European Commission (2016)).

3. Zooming in on specific financial policy issues

Financial intermediation

An important avenue for using FA relates to the **assessment of financial intermediation**. First, this framework allows for the identification of the respective roles of internal (ie savings) and external (ie change in liabilities) sources of funding for the various sectors in the economy. Second, it provides a comprehensive map of the financial links between these sectors (and with the RoW), helping to monitor financial intermediaries that are less regulated than more traditional sectors such as commercial banks or the insurance industry – for which public authorities in charge of oversight have access to specific supervisory information. Policy attention has focused on the role played by non-bank financial intermediaries – broadly defined as the system of credit intermediation involving entities and activities outside the regular banking system. This area regroups various types of entity that play an important role in credit intermediation – namely, broker-dealers, finance companies, hedge funds, mutual funds, other investment funds, trust companies etc. Their activities can incur inherent risks, especially when they are spurred by too much risk-taking and regulatory arbitrage. This was a key feature of the GFC, when excessive risks in the mortgage securitisation chain spread contagion effects to the rest of the financial system, especially banks.

Certainly, **new service providers** can be beneficial for the functioning of the financial system, by promoting financial inclusion, stimulating competition, fostering greater efficiency in the provision of banking services, and providing more opportunities for risk diversification. As underlined in the *presentation by the Central Bank of Morocco*, non-bank financing can be an attractive alternative to bank credit for many firms and households looking for funds – especially for those with restricted access to the traditional banking system, say poor households or very small enterprises (IFC (2018b)). NBFIs have thus expanded significantly in developing countries, where many economic agents can be financially excluded. In Morocco, for instance, NBFIs assets have multiplied by almost 2.5 during the last decade, led by the increased role played by investment funds in providing funding and collecting savings, in particular following the liberalisation of the 1990s.

By providing a **full picture of the financial transactions occurring in the economy**, the FA framework helps to identify the contribution of the respective providers of funding (eg between monetary financial institutions (MFIs) and OFIs), monitor those that are outside the regulatory scope, and detect potential regulatory loopholes. Not surprisingly, recommendation # 8 of the DGI initiative related to FA clearly emphasises the need to compile “data for the other (non-bank) financial corporations sector”. In Morocco, important efforts have also been made to integrate the NBFIs sector into monetary and financial statistics, starting with the inclusion of microcredit associations in 2012 and, more recently, real estate funds. These enhanced statistics have been instrumental in helping the central bank to analyse structural changes in the financial system, including the financing structure of the new intermediaries, the type of agent relying on their funding, and their interconnections with the banking system. This information has proved particularly useful for the Coordination and Systemic Risk Monitoring Committee when conducting financial stress tests and computing contagion and vulnerability indices.

FA-based balance sheet information is also a key input for the **FSB regular monitoring exercises of non-bank intermediation** (FSB (2020)). In particular, it is used to compute specific risk metrics to monitor the new providers of financial services, for instance to assess the relative importance of credit and financial assets in their balance sheet, their off-balance sheet exposures, the repartition of their short- vs long-term liabilities, their equity cushion etc. FA data on the different types of transaction and instruments involved in financial intermediation can also help identify specific liquidity, maturity, currency or credit risks. Furthermore, and as underlined in the *Bank of Portugal presentation*, this information also allows a comprehensive framework to be set up that helps to capture interconnectedness between various parts of the financial sector and possible contagion effects. To this end, the FSB has computed indicators of system-wide interconnectedness to gauge exposures between financial subsectors – say, between banks, OFIs, pension funds and insurance corporations – based on estimates of funding and borrowing flows derived from FWTW tables. Lastly, exposures to the RoW, and use of funding from the RoW, can also be computed to monitor cross-border interconnectedness due to the activities of non-traditional financial intermediaries.

However, FA-based approaches are, by construction, conducted at a related **high level of aggregation** – broadly speaking, the non-bank financial sector. Yet the policy focus has shifted to particular institutions that represent specific financial stability risks. In fact, the NBFIs universe can be quite large and varied, comprising various investment funds, securitisation vehicles, mutual funds and other financial institutions that can quickly emerge as providers of financial services, in particular by leveraging on digital innovation (ie fintech; see IFC (2020)). Within this universe, policy attention has focused in on activities that raise (i) systemic risk concerns, in particular due to maturity/liquidity transformation, leverage and imperfect credit risk transfer, and/or (ii) regulatory arbitrage concerns.

In view of these challenges, and also as part of the DGI initiative, there are ongoing international initiatives to elaborate a **template to collect more granular information** to support the assessment of shadow banks. As recalled in the *OECD presentation*, this means compiling additional, more detailed

statistics in terms of subsectors, instruments and exposures that require a more granular approach than the FA aggregates currently computed. Attention has focused first on defining further breakdowns in the financial corporations sector in the SNA, by breaking down existing subsectors such as money market funds (MMFs), OFIs, insurance corporations, and captive financial institutions. Second, there are initiatives to improve the granularity of the reporting of financial instruments. For instance, the assessment of liquidity risk would benefit from a clear identification of repurchase agreements and securities lending. Similarly, the analysis of maturity risk would be facilitated by the distinction between remaining maturity and original maturity, and credit risk transfer could be better captured by the comparison of market and nominal values for securities, the identification of non-performing loans, the provision of breakdowns between domestic and foreign currencies, and the assessment of off-balance sheet exposures arising from derivatives transactions and contingent liabilities.

Several **central banks are making progress** to enhance the details available in FA information. For instance, the Federal Reserve Board is expanding the measurement of debt securities at market values. Similarly, in its FA strategy, the ECB aims to collect more information (by sectors and instruments), with a focus on non-banks and pension funds (eg with a split between defined benefits and defined contributions schemes) and by “looking through” institutional investors so as to better identify the ultimate holders of financial assets. Yet one difficulty is that the demand for more granular information is constrained by limitations on sharing data among producers. In Morocco, for instance, the supervision of the NBF sector – and related access to granular information – is split between three distinct bodies. The challenges may be even more important at the international level, noting that shadow banks appear to be concentrated in specific places but can operate across national borders.

As regards the FSB monitoring exercises mentioned above, the starting point provided by FA-based information is complemented with a more micro approach to look at the characteristics of individual entities. To this end, the FSB has defined three main types of aggregate in analysing NBF. First, the broad monitoring universe of non-bank financial intermediation (MUNFI), which comprises in particular insurance corporations, pension funds, OFIs and financial auxiliaries and represents about half of the stock of global financial assets – a stock estimated at \$379 trillion at end-2018 (for the jurisdictions surveyed by the FSB). Second, the OFIs, which comprise all financial institutions that are not central banks, banks, insurance corporations, pension funds, public financial institutions or financial auxiliaries; these represent about one third of total financial assets. Third, **the “narrow measure” of NBF**, which includes the types of non-bank financial entity involved in credit intermediation activities that may pose bank-like financial stability risks. This narrow definition relates to what is usually referred to as the shadow banking sector, which represented about 14% of total financial assets.¹⁰ Its identification by the FSB is based on the classification of the following five economic functions: (i) collective investment vehicles features that make them susceptible to runs, such as open-ended fixed income funds, credit hedge funds and MMFs (72% of the narrow measure); (ii) non-bank financial entities engaging in loan provision that is dependent on short-term funding, such as finance companies, with elevated maturity transformation (7%); (iii) market intermediaries that depend on short-term funding or secured funding of client assets, such as broker-dealers (9%); (iv) entities involved in the facilitation of credit creation, such as financial guarantors and credit insurers (with a share in the narrow measure estimated at less than 1% but likely to be underestimated, given the difficulty in capturing their off-balance sheet exposures); and (v) securitisation-based credit intermediation (9%).

¹⁰ The term “shadow banking” has been replaced by “NBF” since the 2018 FSB monitoring report. Note that the narrow measure comprises some assets that cannot be allocated across the five economic functions as defined by the FSB.

Balance sheet effects and vulnerabilities

Obviously, the FA framework provides a wealth of information with which to **analyse the financial positions of economic agents** that use financial services as part of their activities. National experience shows that this can be particularly insightful for elucidating the behaviour of households and corporates as well as in detecting potential fragilities.

As regards **households**, the first *presentation by the Bank of Italy* showed how data compiled in the FA represent the cornerstone for the measurement of household aggregate wealth (comprising financial and real assets net of liabilities) and the analysis of its various drivers. In particular, it allows for the impact of changes in asset prices to be disentangled from “real” financial flows due to evolving saving and investment patterns. Moreover, the FA framework provides insights on the composition of household wealth, in particular as regards the allocation of financial assets by instruments (eg deposits, debt securities, equity, insurance and pension schemes), the sustainability of their liabilities (eg calculation of debt service ratios for households),¹¹ and the types of risk they are taking, including via indirect participation in institutions such as MMFs – noting that the FA framework allows for “looking through” investments in financial intermediaries to identify the final owners of the assets they manage.

This information can be very useful in assessing the state of household balance sheets and the implications. For example, the evolution of wealth can influence consumption patterns through wealth effects, and its composition can shed light on agents’ risk aversion and the characteristics (and risks) of their portfolios (eg relative importance of equity and debt instruments). The composition of household balance sheets can also provide interesting insights for structural analysis, for instance to assess the degree of financial deepening in the economy (eg difference between financial and real wealth) or the respective role of market-based versus intermediated financing – for instance to identify the importance of unquoted shares in Italy, reflecting the weight of family-owned small or medium-sized enterprises (SMEs).

Turning to **NFCs**, the second *presentation by the Bank of Italy* showed how flow-of-funds data can help elucidate the factors driving their behaviour. The corporate sector traditionally tends to run deficits in order to finance investment spending and is thus a net borrower. But this stylised fact has been questioned in many advanced economies since the mid-1990s, as a growing number of NFCs have accumulated large financial surpluses with an increase in corporate payouts (ie cash or stock dividends paid to investors), thereby becoming net lenders to the rest of the economy. FA-based information has been instrumental to shed light on the main forces driving these shifts. In particular, cross-country comparisons suggest that foreign direct investment (FDI) is positively associated with firms’ financial saving and that, in fact, globalisation affects the organisation of the production within countries, by increasing the ease of investing abroad.

Firms’ balance sheet information can also usefully support **sectoral analyses** of economic development. In the case of Russian NFCs, FA data have helped to identify their specific financing patterns – eg relative composition of equity shares, bank loans and debt securities in their liabilities, in turn supporting the assessment of the sectoral dynamics of corporate investment. Furthermore, the *Central Bank of the Russian Federation presentation* showed how various risk indicators based on balance sheet data can be developed to capture fragilities in terms of solvency risk (eg ratio of short-term liabilities to financial assets), liability/asset mismatch risks (eg in terms of currency composition, maturity profile, and capital instrument structure), and external risk (eg the significance of external debt).

¹¹ For instance, FA inputs are used by the BIS to compute debt service ratios for the private non-financial sector for a number of countries; see www.bis.org/statistics/dsr.htm?m=6%7C380%7C671.

4. Challenges

As for all types of statistics, a key objective for central banks is to **make sense of the data that are relevant** for policy and to facilitate evidence-based decision-making – putting a premium on transforming data into information and then information into knowledge (Drozdova (2017)). While new IT tools and techniques can facilitate such a transformation, there are a number of difficulties when attempting to use FA for policy purposes. **Three main challenges** can be identified from this perspective: the first is to ensure that FA information is correctly compiled so that it is consistent (or “integrated”) with the other types of statistics available on the economy; the second is to facilitate the combination of micro- and macro-level statistics, not least so as to be able to dig into aggregates when more detailed information needs arise; and the third challenge is how this information based on domestic concepts can remain relevant in an increasingly globalised economy.¹²

Compiling integrated sectoral financial accounts

As highlighted in the *CBRT presentation*, FA compilation is “a long journey in time”. A first issue is that there are **many gaps to be addressed**, with important building blocks missing in many countries, for instance as regards the ability of quarterly accounts, IIP details (eg currency composition), the identification of the OFI sector, the measurement of assets (eg collection of property prices) etc. Since government plays a key role in today’s economies, one particularly important data gap to address in many countries relates to public finances. In particular, the calculation of government debt is often influenced by national specificities, and attention can focus on the central government, the general government or even the public sector particularly in economies where authorities and firms have strong interconnections. Moreover, the selection of debt instruments can differ between the narrow, Maastricht-type measure of debt and the wider set of instruments considered in the SNA.¹³ Moreover, debt statistics do not usually capture the full government liabilities, particularly those that are implicitly related to pay-as-you-go public pension schemes as well as to guarantees to the NFC sector. Estimates by the OECD show that the size of “public” debt can vary between about 35 and 130 percentage points of GDP for a country like Canada, depending on the metric used.

In view of these difficulties, countries may prefer to **start the FA compilation journey progressively**, by first reviewing and analysing the various concepts and definitions involved, learning from best practices, and focusing on ensuring consistency between existing data sets. To make further progress, data compilers should be pragmatic and set priorities when deciding which missing blocks in the FA framework should be filled first – by designing actions adapted to domestic circumstances instead of relying on a hypothetical one-size-fits-all plan. As an example, the CBRT approach has been to develop “process tables” for priority sectors. This work was complemented with “coherence indicators” to assess the differences between the various accounts compiled from different sources and/or methods (eg accrual versus cash basis). Attention then progressively shifted to more complex objectives, especially FWTW matrices, the incorporation of more granular data sets, and the development of fully integrated tables, particularly between the non-financial and financial accounts.

¹² The challenges highlighted here refer to the policy use of FA. Needless to say, there are also important difficulties related to the actual design of the FA/SNA framework (eg to capture sustainability issues, well-being considerations, and the impact of digitisation and the role of data), which are addressed by ongoing international statistical initiatives.

¹³ For these reasons, and to facilitate international as well as cross-sectors comparisons, BIS credit indicators rely on the concept of core debt, which comprises loans, debt securities, and currency and deposits at both nominal and market values; see Dembiermont et al (2015) and www.bis.org/statistics/about_credit_stats.htm?m=6%7C380.

A second lesson is to **foster good coordination between the various agencies** producing the multiple types of data set that are used for FA compilation. One example relates to the difference observed in many jurisdictions for the measurement of the country's net lending/borrowing position derived from the financial versus non-financial accounts. Resolving this discrepancy in Turkey has required intense collaboration between the CBRT and the NSO (TurkStat), with the regular exchange of information and the organisation of technical workshops for all those involved in SNA compilation. Another important avenue for improving external sector statistics is to develop the use of "mirror data", ie of different sources capturing the same concept from alternative perspectives (including across countries; Pradhan and Silva (2019)). Because of the need to check consistency at a very detailed level, such inter-agency cooperation may require compilation teams to work together and reciprocal data access to be set up, so that observed discrepancies can be investigated with sufficient granularity. But there can be significant obstacles to effective data-sharing arrangements both within institutions (such as central banks, when these are in charge of FA compilation) as well as among national authorities (eg between central banks and NSOs (IFC (2016a)). In addition, there is a need for an adequate infrastructure to support the timely standardised transmission of data through agreed formats such as SDMX.¹⁴

A third issue is that the **viewpoint of economic agents can differ** and may therefore not be in line with the one derived from the SNA framework. A key example relates to the transfer of risks between firms (IAG (2015)). First, the measuring of risk transfers and the assessment of ultimate risk-bearing entities is prone to uncertainties. For instance, it is not always straightforward to determine whether a firm issuing debt benefits from a guarantee provided by another one. Moreover, looking through corporate parent relationships may be difficult in the absence of a consistent system of identifier (LEIROC (2016)). As an example, the extent to which a parent company is legally responsible for the liabilities of its controlled affiliates can depend on several factors, including whether the local entity is a branch or subsidiary and the nature of the guarantee provided by the parent to the affiliate (eg implicit versus legally binding commitment). Furthermore, these factors are "time-dependent" as they may play out differently depending on circumstances. For instance, a parent company may be willing to cover the liabilities of an affiliate in "normal times" – say for reputational issues – but may react otherwise if the liabilities exceed a certain threshold – for instance, if they exceed the equity stake of the parent company invested in the country (in case of failure, the parent may prefer to lose all its equity rather than cover the full liabilities of the affiliate). Hence, the parent's balance sheet could look different depending on the specific state of the economy. Another example relates to households' view of their future public pension entitlements, which may not be in line with the liabilities recognised in the balance sheets of public authorities. In the United States, for instance, significant changes have been made in the FA framework in recent years to enhance the description of household retirement assets and pension entitlements (eg claims on pension funds or sponsors). Clarifying these issues is obviously of particular importance in view of today's ageing populations.

Integrating micro data

Another challenge relates to the **reconciliation of aggregated-type information presented in the FA with the more granular data** collected from various statistical sources. A key point is that policymakers are becoming increasingly interested in the distribution of economic aggregates across classes of households – noting that the repartition of assets and liabilities can vary markedly across income and wealth deciles – and corporates – for instance, depending on their size (eg SMEs) or their degree of foreign ownership (eg FDI affiliates). Moreover, the GFC clearly highlighted the need to capture

¹⁴ Statistical Data and Metadata eXchange standard; see IFC (2016b).

developments at the level of individual firms or even of single transactions and, at the same time, take due consideration of broader macro-financial evolutions (IFC (2016c)) – in other words, “to see the forest as well as the trees within it” (Borio (2013)). There has therefore been a greater focus on micro data, as a way to go “beyond the aggregates”, as highlighted during the Eighth ECB Statistics Conference on “Central Bank Statistics: moving beyond the aggregates” in July 2016 (Tissot (2019)).

Certainly, users’ demand for complementing general economic indicators with more granular insights is not new, and the 2008 SNA clearly states the importance of considering the skewed distribution of income and wealth across households. But it recognises that getting this information is “not straightforward and not a standard part of the SNA” (2008 SNA, #24.69) and that “there would be considerable analytical advantages in having microdatabases that are fully compatible with the corresponding macroeconomic accounts” (2008 SNA, #1.59). In particular, the FA framework should be complemented with more granular information at the entity/transaction/instrument level, allowing for “drill down” analyses.

More granularity calls for **more flexible statistical frameworks** to adapt to evolving user requirements and to address them in a timely fashion. To this end, sectoral information derived from the SNA framework should be adequately linked with the underlying micro data sources (La Cava (2015)). Indeed, the second phase of the DGI explicitly asks for new statistical frameworks to combine micro- and macro-level data sets, recognising that “*policy makers are requesting improved collection of data on financial institutions and markets, including more granular data to help straddle the divide between micro and macro analysis*” (FSB and IMF (2015); #23, p 15). The implication for the statistical compilation system is to provide both generic tables computed on a systematic basis and the possibility of easily connecting the aggregates with the (micro-level) source data. Yet an important difficulty is that the original granular information is often inconsistent, so that in practice adequate “bridge tables” have to be developed to translate indicators that are not primarily collected for statistical purposes into SNA concepts.¹⁵ Typically, these adjustments will aim at amending definitions, correcting for exhaustiveness and discontinuity, and conducting so-called balancing adjustments (Eurostat (2014)).

Developing these **micro-macro linkages** can also greatly facilitate the actual compilation of macro FA aggregates, especially by making a better use of the vast amount of information available as a result of the various administrative processes set up in response to legislation and regulations (Bean (2016)). Central banks’ attention has in particular focused on the large financial data sets collected at the levels of specific instruments, such as loan-by-loan data sets (see the EU AnaCredit¹⁶ project) and security-by-security databases (see the SHS and the CSDB¹⁷ organised at the ECB). This type of granular information can serve as useful primary statistics for FA compilation, as argued in the *US central bank presentation*. For instance, FA measurement of the market value of US residential real estate has benefited from big data-type information – ie property counts derived from the census and average prices from automated valuation models. Another example of such integration has been to combine the (macro-level) household balance sheets data available in the US FA with the (micro-level) triennial survey of consumer

¹⁵ For a presentation on the use of administrative sources and the concept of “bridge tables”, see eg Eurostat (2019).

¹⁶ AnaCredit, which is an initiative developed by the ECB, stands for analytical credit data sets. It provides information on individual bank loans in the euro area; see www.ecb.europa.eu/stats/money_credit_banking/anacredit/html/index.en.html.

¹⁷ The Securities Holdings Statistics (SHS), collected on a security-by-security basis, provide information on securities held by selected categories of euro area investors, broken down by instrument type, issuer country etc; see www.ecb.europa.eu/stats/financial_markets_and_interest_rates/securities_holdings/html/index.en.html. The Centralised Securities Database (CSDB) aims to hold complete, accurate, consistent and up-to-date information on all individual securities relevant for statistical purposes; see ECB (2010).

finance¹⁸ to produce quarterly household wealth indicators with distributional information. The advantage is combine the benefits of the FA framework – eg data available with higher frequency (quarterly), timelier, more consistent with international standards – and the richness of the granular household demographic information of the survey.

Addressing economic and financial globalisation

Globalisation poses multiple challenges for statisticians compiling FA and for users of this information.¹⁹ Indeed, one of the five objectives of the ECB medium-term FA strategy is to address these globalisation challenges, with a focus on three categories: data sources, methodology and tools. As regards data sources, it is increasingly difficult for national statisticians to get relevant information on global economic activities, especially those performed by MNEs; for instance, to properly measure the localisation of their intangible assets and of their (taxable) profits.²⁰ Turning to methodology, the compilation of most standard macroeconomic indicators is affected by (real and even more so financial) globalisation, making them difficult to interpret, for instance, when assessing the global value chains of MNEs and tracking the associated financial flows and exposures (BIS (2017)). Lastly, there is a need for adequate analytical tools to monitor what is going on at the global level and the implications for domestic economies; for instance, to shed light on interconnectedness, spillovers and contagion patterns across national boundaries. As a result, current analytical frameworks such as the SNA run the risk of being both less meaningful as a means of capturing globalisation and less relevant – see the recent “quantum change” in the measurement of GDP growth in Ireland (where a number of multinational corporations attracted by low corporation tax rates have relocated their economic activities, and their underlying intellectual property), with an impressive rate reported for 2015 (OECD (2016)).

These challenges raise several types of difficulty. A first one relates to **statistical compilation**, for instance, to ensure that external sector statistics – covering eg BoP/IIP – are fully consistent with the domestic economy view provided by the SNA framework. The *ECB presentation* recalled that central banks are devoting a lot of effort to ensure such consistency, with countries encouraged to have a single compilation system for both BOP/IIP and FA. Another issue is to ensure statistical **harmonisation across countries**, a necessary condition for performing comparative analyses and computing meaningful regional and/or international aggregates. One example relates to wealth comparisons: while financial assets are internationally relatively more comparable, the measurement of real wealth could still benefit from further harmonisation across countries – a key priority since real assets are more important than financial ones in most cases. A third difficulty relates to the **relevance of the concept of residency** underlying the SNA framework. Economic agents are usually assigned to a given geographical area (the domestic economy), even though their actions can be decided by other, non-domestic entities controlling them. This can lead to important shortcomings when analysing traditional economic indicators: for instance, domestic data are insufficient to capture the full international exposures of a domestic firm operating through various affiliates including those located outside national borders.

¹⁸ The Survey of Consumer Finances (SCF) is conducted every three years by the Board of Governors of the Federal Reserve System and includes information on US families’ balance sheets, pensions, income and demographic characteristics; see www.federalreserve.gov/scf/scf.htm.

¹⁹ For a review of the current issues and new challenges related to external sector statistics, see eg IFC (2018c).

²⁰ For a discussion of the most acute challenges posed by the global business model of MNEs, such as the location of corporates’ intellectual property products (IPPs) and the growing use of special purpose entities (SPEs) as offshore financing vehicles, see IFC (2019b).

What should be the statisticians' responses to address these globalisation challenges? A first, relatively straightforward one is to **exploit all the possibilities offered by the SNA framework**, for instance, by identifying clearly the contributions of direct investors and foreign-controlled affiliates in each economy. FA provide a useful framework for such approaches, as they allow the NFC sector between domestically and foreign-owned firms to be disentangled, and cross-border assets and liabilities to be assessed via detailed instrument and currency breakdowns.

A second response is to aim for a better representation of **FA-type information at the global level** so as to assess the full network between economic agents, for instance, by developing so-called global flow of funds network charts, ie a worldwide FWTW matrix that encompasses the different types of economic sector and their geographical repartition (Zhang and Xiuzhen (2019)). Such information would be very valuable when seeking to assess and understand the interactions between economic sectors located in different jurisdictions, in turn facilitating the monitoring of the global financial system, international risk exposures, and country-to country and sector-to-sector interconnectedness.

A third approach would be to develop so-called **nationality-based statistics**. To do so, one needs to identify the control structure of firms and assign a nationality to each – with nationality being defined as the country of residence of the entity controlling this firm (Tissot (2016b)). Going one step further, one could consider not only the nationality of the institutional units resident in a given country but also their balance sheets on a consolidated basis – by including all the activities performed by corporate groups of a given nationality, independently of the location of their controlled affiliates; see IAG (2015). For instance, the international banking statistics of the BIS provide a “locational” perspective that combines information on the residency as well as on the nationality of the reporting banks located in a given jurisdiction. In addition, these statistics are also presented on a “consolidated” basis, ie by aggregating across all jurisdictions the affiliates controlled by a national banking group. A similar dual approach has been followed for the compilation of the BIS international debt securities statistics.²¹

Such a nationality-based perspective can **usefully complement the domestic view provided by the “traditional”, residency-based FA/SNA framework**. On the real side, the monitoring of global, “border-less” corporate indicators could help to track global value chains and also shed light on MNEs' role in channelling investment across borders. On the financial side, the BIS banking statistics, for example, have helped to shed light on the functioning of the global financial system and the development of financial stress during the GFC.

One key lesson is that external financial conditions can have a key impact on the balance sheets of domestic agents, through the direct effect of cross-border capital flows on domestic credit and the indirect determination of the full spectrum of asset prices, including for real assets. This underlines the **role of global liquidity**, a concept detailed in the *BIS presentation*, which seeks to gauge the ease of financing in global financial markets to assess the provision of liquidity by financial institutions to securities markets (through their trading activities) and borrowers (through their lending activities). Changes in such global liquidity conditions can reflect the interactions between market participants as well as the impact of prudential and macroeconomic policies, with important implications for economic growth and financial stability alike.²² For instance, excess liquidity could be associated with the build-up of the types of domestic vulnerability (eg leverage, surging asset prices, and various asset/liability mismatches) that are often associated with unusually rapid increase in private debt. Of particular importance from this perspective is the international component of credit – in the form of cross-border

²¹ For an overview of these various BIS statistical data sets, see BIS (2015), as well as the data available on www.bis.org/statistics/about_banking_stats.htm.

²² See the BIS global liquidity indicators (GLIs) available on www.bis.org/statistics/about_gli_stats.htm?m=6%7C333%7C689.

lending and local lending denominated in foreign currencies – which has often provided the marginal source of financing in the run-up to past financial crises.

Looking forward

Significant progress has already been achieved on the compilation of FA across major advanced and emerging countries, even though important work remains to be done, as highlighted during the workshop. A clear message is that, once initial compilation efforts are complete, **the focus should turn more to the user side**. From this perspective, there is a general feeling that FA information is still not fully explored, despite its potential usefulness.

One way to **promote a more effective use of FA data is to enhance the interaction between users and compilers**. For instance, users can benefit from compilers' knowledge on the definitions, availability and the quality of the data. On the other hand, compilers can modify the presentation of their statistics to make them more user-friendly, for instance, by enhancing their visualisation with new IT tools. Efforts should also focus on improving data timeliness and reliability. Timeliness could be increased by making more use of micro data and nowcasting techniques to replace the data sources that have long lags, not least by leveraging on artificial intelligence (AI) and machine learning techniques (IFC (2019a)). As regards reliability, increased transparency through the provision of methodological documentation and metadata information would be helpful – not least to ensure users' awareness that more rapidly available data can be subject to more frequent revisions.

Another important avenue is to **strengthen the internal and external communication** of FA data. In Russia, the CBRF has focused its internal communication efforts on the setup of business intelligence (BI) systems (eg dashboards), for instance, to provide FA-based insights on the respective roles of specific types of financial instrument (IFC (2019c)). External communication has been strengthened too, with the expansion of published indicators and the reduction of publication time lags. Turning to Turkey, the CBRT has developed blogs to communicate on specific statistical news derived from the FA framework, such as household indebtedness, the total debt of resident sectors etc. Moreover, FA-based information is published in various dedicated reports eg financial stability and inflation reports. Similarly, the ECB has also enhanced its related publications, for instance with the launch of a quarterly household sector report.

Third, instead of fundamentally changing the whole FA framework, ways can be explored to **complement it with additional sets of information**, in particular by aggregating institutional sectors across countries, producing global flow-of-funds data, setting up a global database on MNEs, developing distributional indicators, explicating the underlying micro-macro data linkages, and complementing FA-type residency-based information with nationality statistics. Rather than completely changing the framework, this calls for “enhancing” FA, so that more information of the “memo items” type is presented.

Of course, this is a never-ending process, since the increased use of FA is likely to trigger new demands from users. While these demands are difficult to predict, one key requirement is likely to be for greater **data granularity and availability**. For central banks as key producers of information on the financial system, this calls for a careful review of how statistics are produced, a process that needs to be flexible enough to adapt to evolving user needs.

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IFC – Central Bank of the Republic of Turkey Workshop on the “Use of financial accounts”, Istanbul, Turkey, 18-20 March 2019

Opening remarks by Gülbin Şahinbeyoğlu, Executive Director, Statistics Department, Central Bank of the Republic of Turkey

On behalf of the Central Bank of Turkey and the Irving Fisher Committee, I would like to extend my warm welcome to you all to this workshop on the “Use of Financial Accounts”. It is a great pleasure for us to host you once again in İstanbul for another joint event with the IFC on financial accounts. Our first workshop was in May 2014 and the theme was “Developing and Improving Sectoral Financial Accounts”. Even the titles of these two subsequent events denote the progress in this area in the last five years.

Back in those days, we were reviewing the concepts and definitions in financial accounts, trying to learn from the best practices in compiling sectoral data, discussing ways for consistency between data sets, organizational issues and ways to improve coordination between partner institutions. All these efforts were targeted to the construction of the financial accounts statistics.

Although some of these topics are still on our agenda, we now focus much more on the user side of the statistics; hence, with this workshop, we bring together key representatives from central banks and national authorities, standard-setting bodies and leading international organizations. We will review and investigate the extent of the use of financial accounts in assessing financial stability and conduct of monetary policy. I am sure this will be a good opportunity for us, as compilers and users of statistics, to conclude with certain agendas in improving our data provision, also consumption and use.

Having said that, let me now briefly mention the Turkish experience in the production and the use of quarterly financial accounts statistics. As the Central Bank of Turkey, we have been producing the financial accounts statistics since 2012. It has been a long journey. The first publication included only two sectors: the financial sector and the Central Government with limited coverage. The data was annual and publication took place with a long lag. Today, a complete set of indicators covering each individual sector and financial instrument is available on a quarterly and timely basis. I want to highlight that inclusion of the indicators for non-financial corporations and households has been one of the major contributions of financial accounts in the Turkish macroeconomic databases, given that these sectors are not very well captured in other statistics.

All financial accounts compilers are aware that compiling financial accounts for all sectors and reaching a figure for net financial worth is not the end of the story. The challenge then begins to maintain consistency with the non-financial accounts. When the case involves more than one institution, the consistency issue becomes

even more challenging and the process starts from scratch, checking consistency in data sources and methodology and covering all the related accounts to be compared.

For this purpose, the CBRT has initiated a project and is working together with TurkStat on the integration of non-financial and financial accounts. Our aim is to review each data module and set the necessary methodological revisions to ensure consistency between the two fundamental approaches. We plan to produce "integrated sectoral accounts" and publish a joint bulletin by the TurkStat and the CBRT, hopefully by the end of this year. This will be a further attempt to close a substantial data gap in the Turkish economy through strong institutional coordination.

Dear guests,

I believe this two-day workshop will enhance awareness of the importance of financial accounts as a tool for analyzing the linkages between the real economy and the financial system, for understanding interconnectedness across countries, and for constructing indicators of financial vulnerabilities. I should also emphasize the significance of this event for those of us in Turkey who, as national data compilers and producers, want to promote the use of financial accounts in economic analysis such as assessing financial stability.

Finally, before starting this event, I would like to take a few moments to thank the IFC Secretariat for giving us this valuable opportunity to host such an important gathering and give special thanks to the CBRT staff who organized this workshop.

And I should like to once again voice my deep thanks to all of you who have set aside your precious time to take part in this workshop. And although your time in Turkey will be short, I want to wish you all a productive but also enjoyable stay in Istanbul.

Thank you for your attention.

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

G20 Data Gaps Initiative (DGI) Overview of the Second Phase of the G-20 DGI (DGI-2)¹

Yasushi Shiina,
FSB – Financial Stability Board

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

The logo for the Financial Stability Board (FSB), consisting of the letters 'FSB' in a bold, white, sans-serif font inside a dark blue square.

FINANCIAL
STABILITY
BOARD

G20 Data Gaps Initiative (DGI)

Overview of the Second Phase of the G-20 DGI (DGI-2)

Yasushi Shiina, Member of Secretariat

18 March 2019

Note: This document is prepared to provide a brief overview on the status.

1. Background: G20 Data Gaps Initiative (DGI)
2. DGI-2 work in 2018
3. Next steps: DGI-2 in 2019

Background: The G20 Data Gaps Initiative (DGI)

- The 2007-08 global financial crisis highlighted the need for timely and accurate information/data for policy makers and market participants to develop effective responses to events.
- In response to the G20 request to explore data gaps and strengthen data collection, the first phase of the Data Gaps Initiative (DGI-1) was launched in October 2009 that include 20 recommendations covering:
 - the build-up of risk in the financial sector;
 - international financial network connections;
 - vulnerability of domestic economies to shocks; and
 - communication of official statistics.
- DGI-1 recs focused on development of conceptual frameworks in areas where data collection did not exist (e.g. linkages among G-SIFIs) and improvement of data collection in areas where frameworks already existed (e.g. Financial Soundness Indicators).
- DGI-1 concluded in 2015 with most of the recommendations completed or advanced.
 - However, some areas were identified as in need of further efforts – sectoral accounts (divergence in the implementation of statistical frameworks and the need of coordination at the national-level) and government finance statistics.

An overview of the second phase of the G20 Data Gaps Initiative (DGI-2)

- The second phase of the G20 DGI (DGI-2) was launched in September 2015 to consolidate the progress made, and to promote regular data collection especially in areas conceptual frameworks have been developed.
 - 20 new/revised recommendations were developed to implement “the regular collection and dissemination of comparable, timely, integrated, high quality, and standardized statistics for policy use”.
 - The DGI-2 recs focus on: (i) *monitoring risk in the financial sector*; (ii) *analysis of vulnerabilities, inter-connections and spillovers*; and (iii) *data sharing and communication of official statistics*.
- Horizon for implementation is 2021.
 - As in DGI-1, main developments are reported annually to the G20 in a Progress Report prepared by the FSB Secretariat and IMF Staff, in coordination with IAG.
 - A monitoring framework (e.g. traffic lights dashboard) is in place since 2017 to keep track of the progress.
- Possible synergies with other relevant global initiatives are monitored (e.g. measurement of the digital economy, promotion of the Global LEI, adherence to the Special Data Dissemination Standard Plus, dialogue with the G20 IFA WG).

Overview of G20 DGI-2 Recommendations

DGI-I Recommendations	DGI-II Recommendations
I.1: Mandate	II.1: Mandate
Build-up of risk in the financial sector	Monitoring risks in the financial sector
I.2: Financial Soundness Indicators (FSI) ● I.3: Tail risk ● I.4: Aggregate Leverage and Maturity Mismatches ● I.5: Credit Default Swaps (CDS) ● I.6: Structured Products ● I.7: Securities data ●	II.2: Financial Soundness Indicators (FSI)* II.3: FSI Concentration and Distribution Measures (CDM) II.4: Data for Global Systemically Important Financial Institutions (G-SIFIs) II.5 Shadow Banking II.6 Derivatives II.7 Securities Statistics*
Cross-border financial linkages	Vulnerabilities, Interconnections, and Spillovers
I.8 & I.9: Data for Global Systemically Important Financial Institutions (G-SIFIs) ● I.10 & I.11: Coordinated Portfolio Investment Survey (CPIS) ● and International Banking Statistics (IBS) Participation ● & Enhancement ● I.12: International Investment Position (IIP) ● I.13 & I.14: Financial and Non-financial corporations' cross border exposures ●	II.8: Sectoral accounts* II.9: Household Distributional Information II.10: International Investment Position (IIP) II.11: International Banking Statistics (IBS)* II.12: Coordinated Portfolio Investment Survey (CPIS)* II.13: Coordinated Direct Investment Survey (CDIS) II.14: Cross border exposures of non-bank corporations II.15: Government Finance Statistics (GFS)* II.16: Public Sector Debt Database (PSDS)* II.17: Residential Property Prices (RPPI) II.18: Commercial Property Prices (CPPI)
Vulnerability of domestic economies to shocks	
I.15: Sectoral accounts ● I.16: Distributional Information ● I.17: Government Finance Statistics (GFS) ● I.18: Public Sector Debt ● I.19: Real Estate Prices ●	
Communication of Official Statistics	Communication of Official Statistics
I.20: Principal Global Indicators ●	II.19: International Data Cooperation and Communication II.20: Promotion of Data Sharing

● Recommendations that are completed based on the targets that were introduced in 2014.

● Recommendations where significant progress was made and are close to completion pending participation by all G-20.

● Recommendations where progress was slow.

* Indicates priority areas identified by the G-20 economies and international agencies in 2015.

Common priorities of the G20 DGI-2 recommendations

- Disseminating consistent and comparable Financial Soundness Indicators. [Rec II.2]
- Ensuring regular collection of the International Banking Statistics and the Coordinated Portfolio Investment Survey. [Recs II.11-12]
- Providing consistent securities statistics. [Rec II.7]
- Improving the availability of sectoral accounts data. [Rec II.8]
- Disseminating timely and comparable general government operations and debt data. [Recs II.15-16]

- **DGI-2 Annual Global Conference and thematic workshops**
 - **Annual Global Conference (Basel, 30-31 May 2018)**
 - **Three thematic workshops (January – March 2018):**
 - Residential/Commercial property price indexes (Recs. II.17-18)
 - Institutional sector accounts (Rec. II.8)
 - Securities statistics (Rec. II.7)
- **Technical-level meetings** are also held to take forward some DGI-2 recommendations (e.g. Rec. II.5 on Non-Bank Financial Intermediation (NBFIs), Rec II.6 on OTC derivatives)
- **Dissemination of reporting guidelines/templates and technical guidance** for several DGI-2 recommendations (e.g. Reporting Guidelines on securities financing data (Rec II.5); technical guidance on UTI/UPI* (Rec II.6)).

Main findings from the DGI-2 work in 2018

- Main findings from the 2018 progress report on the implementation of DGI-2 recommendations include the followings:
 - Considerable progress was made by the DGI-2 participating economies during its second year. This includes, among others, *NBFI monitoring, reporting of G-SIBs data, improved sectoral accounts data (coverage, timeliness, periodicity)*. All G20 now report their *International Investor Position (IIP)* quarterly and core *Coordinated Portfolio Investment Survey (CPIS)* data semi-annually.
 - Key challenges remain and high-level political support is crucial to overcome them. Such challenges include: adequate resource allocation (e.g. skills, IT); appropriate infrastructure for data access and data sharing; as well as strengthened inter-agency coordination at the national level.
 - In terms of specific DGI-2 recommendations, some key challenges remain, for example, with *the compilation of quarterly institutional sectoral accounts, government deficit and debt, IIP currency breakdown for non-financial corporations, identification of other financial corporations in the IIP and NBFI monitoring, and commercial property price index.*
 - Overcoming these challenges is key to further advancement with DGI-2 implementation.
 - Further progress in implementing the DGI-2 is expected from the participating economies.

Overall implementation status of the DGI-2 Recommendations

Rec. II.8 Sectoral accounts: As in 2017, further progress is expected for countries with less developed statistical systems.

Rec. II.9 Household distributional information: Progress is yet to be made as sources and compilation methods are under development.

Rec. II.10 International Investment Position (IIP): 6 economies are reporting the currency composition data.

Rec. II.18 Commercial Property Price Index (CPPI): No harmonised methodological framework nor detailed methodological guidance available yet.

Rec. II.18 CPPI: Action plan still to be elaborated.

Recommendation	Overall assessment and progress made	Status	
		2017	2018
#II.2 FSI	<ul style="list-style-type: none"> 15 G20 economies report seven FSIs expected from the SDDS Plus adherents, of which four economies report with more than a quarter lag. Other four economies report six FSIs, of which one reports with more than a quarter lag. Ongoing work on expanding the FSI list and on the revised FSI Guide. 		
#II.3 CDM	<ul style="list-style-type: none"> Collection of CDMs broadly supported by FSI compilers. Appropriate guidance for CDM reporting is being incorporated in the revised FSI Guide. Reporting template prepared. 		
#II.4 G-SIFIs	<ul style="list-style-type: none"> G-SIFIs Phase 3 data reporting has started or it is about to start in almost all jurisdictions. Action plan for G-SIFIs postponed in light of the new IAIS workplan on systemic risk assessment. 		
# II.5 Shadow banking	<ul style="list-style-type: none"> FSB is conducting annual monitoring exercises on the global shadow banking system. Technical and governance work for global SFT data collection and aggregation largely completed. Preparation for reporting has now started. 		
#II.6 Derivatives	<ul style="list-style-type: none"> All G20 economies participated in the 2016 Triennial Survey, including reporting new data on CCPs. Work completed in 2018 on UTI/UPI technical guidance. Work ongoing on UTI/UPI governance. Economies are taking actions on barriers to OTC derivatives trade data reporting. 		
#II.7 Securities statistics	<ul style="list-style-type: none"> All G20 economies provided self-commitments. All G20 economies confirmed to fully or mostly implement the self-commitments for the 2018 intermediate target. Some economies will implement also additional series. 		
#II.8 Sectoral accounts	<ul style="list-style-type: none"> Much progress has been made in the past year. Number of economies compiling and disseminating data is growing. As in 2017, further progress is expected for countries with less developed statistical systems. 		
#II.9 Household distrib. Info.	<ul style="list-style-type: none"> Progress is yet to be made as sources and compilation methods are under development. 		
#II.10 IIP	<ul style="list-style-type: none"> As in 2017, 20 G20 economies report quarterly data on a <i>BPM6</i> basis. 15 G20 economies identify OFCs. 6 economies are reporting the currency composition data. 		
#II.11 IBS	<ul style="list-style-type: none"> 17 G20 economies report the locational banking statistics. 12 G20 economies implemented the agreed LBS enhancements. 10 G20 economies implemented the agreed CBS enhancements. 		
#II.12 CPIS	<ul style="list-style-type: none"> All G20 economies now report core CPIS data on a semi-annual basis, with one economy recently moving from annual to semi-annual reporting. As in 2017, 16 G20 economies report the sector of holder table. 		
#II.13 CDIS	<ul style="list-style-type: none"> With one additional reporter, now 18 G20 economies report inward data (one provides only equity). 15 G20 economies report outward data. One economy has started to report the equity/debt split. 		
#II.14 Cross-border exposures	<ul style="list-style-type: none"> 11 G20 economies report NFC sector in LBS. 9 G20 economies report complete data for OFCs, six via the SRF 4SR and three via the ECB. Of the remaining 10 economies, three report with incomplete coverage and two with a long lag. 		
#II.15 GFS	<ul style="list-style-type: none"> 11 G20 economies report quarterly general government data based on <i>GFSM 2014</i>. 		
#II.16 PSDS	<ul style="list-style-type: none"> 17 economies report central government debt, 12 economies report general government debt. Progress made to broaden instrument and sectoral coverage. 		
#II.17 RPPI	<ul style="list-style-type: none"> At least one RPPI is available for 19 G20 economies. Progress on methodological issues affecting RPPI comparability is being made. Template for internationally comparable RPPI data and related housing indicators endorsed. 		
#II.18 CPPI	<ul style="list-style-type: none"> 10 G20 economies report CPPI data. Publication of "Commercial Property Price Indicators: Sources, Methods and Issues" in December 2017 by Eurostat. Eurostat launches Task Force on Commercial Real Estate Indicators in 2018. No harmonized methodological framework nor detailed methodological guidance available yet. Action plan still to be elaborated. 		
#II.19 Data coop/coordination	<ul style="list-style-type: none"> Exchange of GDP and population data is implemented. Sector accounts data exchange was tested in late 2017, with implementation planned for 2018. Balance of payments data exchange is under investigation. 		
#II.20 Promotion of data sharing	<ul style="list-style-type: none"> Monitoring of progress is being prepared at international and national level, through a questionnaire. 		

Fully or nearly completed workstream.

Significant progress made, workstream broadly on track.

Early stage of implementation or lack of timely progress.

Next steps: DGI-2 work in 2019

- FSB and IMF, in coordination with the IAG and in consultation with the participating economies, are preparing the fourth Progress Report for submission to the G-20 in October 2019.
 - As in previous Reports, the 2019 Report will be based on survey responses and inputs from DGI-2 participating economies and IAG members.
- To facilitate progress in implementing the challenging DGI-2 recommendations, the DGI-2 work programme in 2019 include:
 - thematic workshops (on CPPI, sectoral accounts, and government finance and debt statistics);
 - other technical-level workshops and meetings (e.g. FSB-BIS workshop on securities financing data collection and aggregation); and
 - the annual DGI Global Conference.
- Dialogue with the potential users of data is essential and will aim to enhance the relevance of the DGI-2.

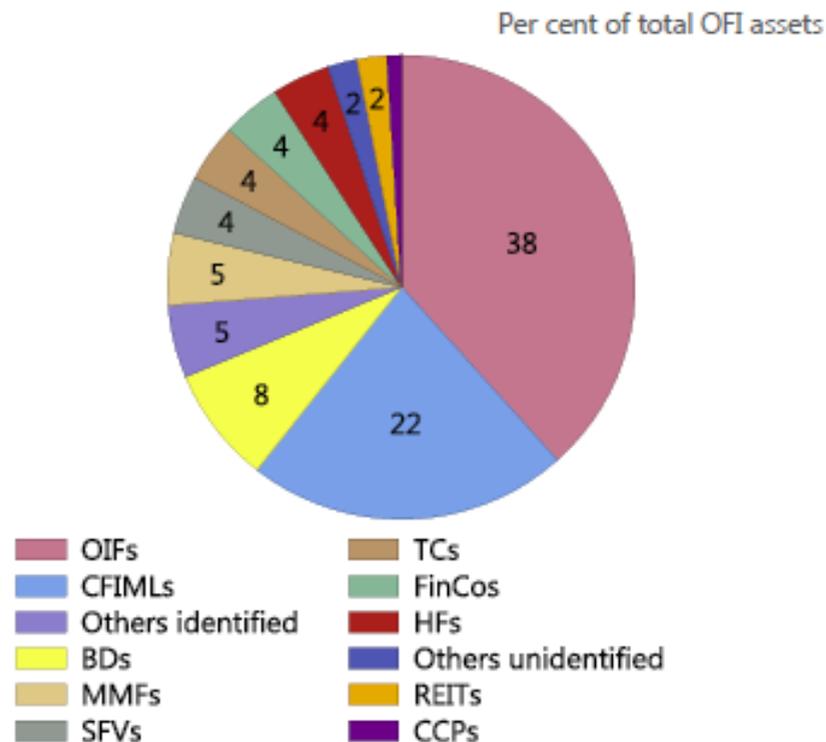
Using financial sector balance sheet data for NBFIs monitoring (1)

Major OFI sub-sectors

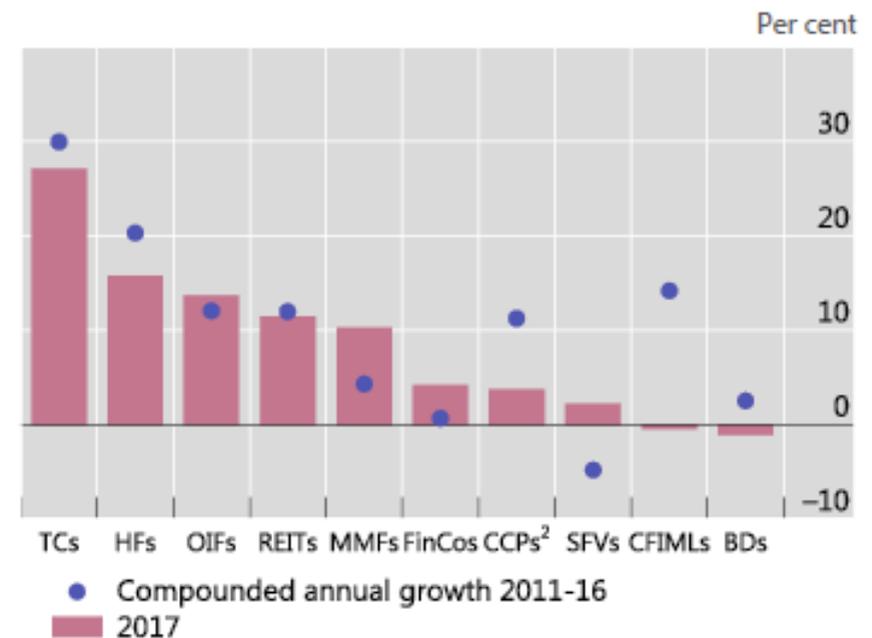
29-Group

Exhibit 2-9

At end-2017



Annual growth¹



BDs = broker-dealers; FinCos = finance companies; HFs = hedge funds; OIFs = Investment funds other than MMFs and hedge funds; TCs = Trust companies. ¹ Some exchange rate effects have been netted out by using a constant exchange rate (from 2017). ² CCP growth rates exclude one jurisdiction where assets grew substantially in 2017 due to an accounting change at a CCP.

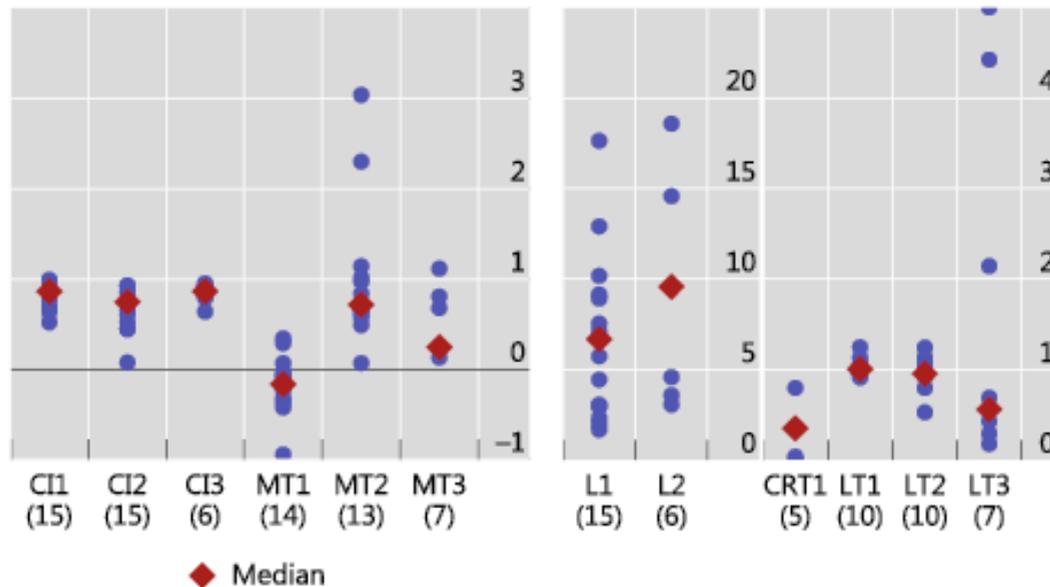
Sources: Jurisdictions' 2018 submissions (national sectoral balance sheet and other data); FSB calculations.

Using financial sector balance sheet data for NBF1 monitoring (2)

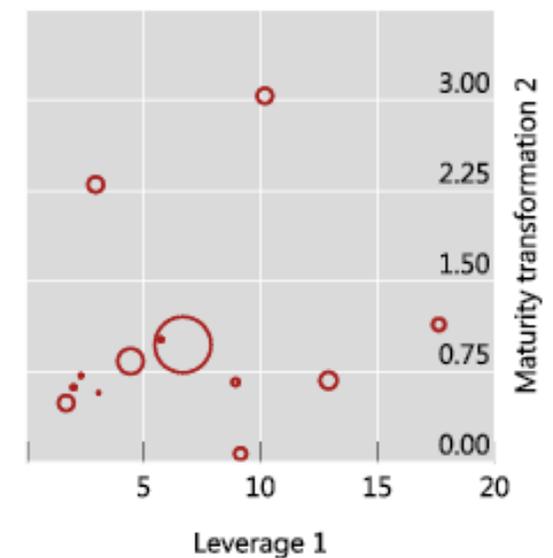
Risk metrics for finance companies

Exhibit 4-19

Selected risk metrics¹



MT2 vs leverage²



At end-2017. Each blue dot represents a jurisdiction's overall metric, with total sample size denoted in parentheses below the risk metric label on the x-axis. Each jurisdiction's data submission reflects data from many individual entities within that jurisdiction. ¹ CI1 = credit assets / total financial assets; CI2 = loans / total financial assets; CI3 = (credit assets + credit off balance sheet exposures) / (AUM + total off balance sheet exposures); MT1 = (long-term assets - long-term liabilities - equity) / total financial assets; MT2 = short-term liabilities [≤ 12 months] / short-term assets [≤ 12 months]; MT3 = short-term liabilities [≤ 30 days] / short-term assets [≤ 3 months]; LT1 = (total financial assets - liquid assets [narrow] + short-term liabilities [≤ 30 days]) / total financial assets; LT2 = (total financial assets - liquid assets [broad] + short-term liabilities [≤ 30 days]) / total financial assets; LT3 = short-term liabilities [≤ 30 days] / liquid assets [broad]; CRT = credit off balance sheet exposures / (total financial assets + total off balance sheet exposures); L1 (Leverage 1) = total financial assets / equity; L2 = (total financial assets + total off balance sheet exposures) / equity. Some risk metrics included data from entities prudentially consolidated into banking groups, as some jurisdictions' granular data do not distinguish between consolidated and non-consolidated entities. ² Size of bubble denotes the sector's absolute size. Only jurisdictions which provided data for both the L1 metric and the MT2 metric appear in this chart.

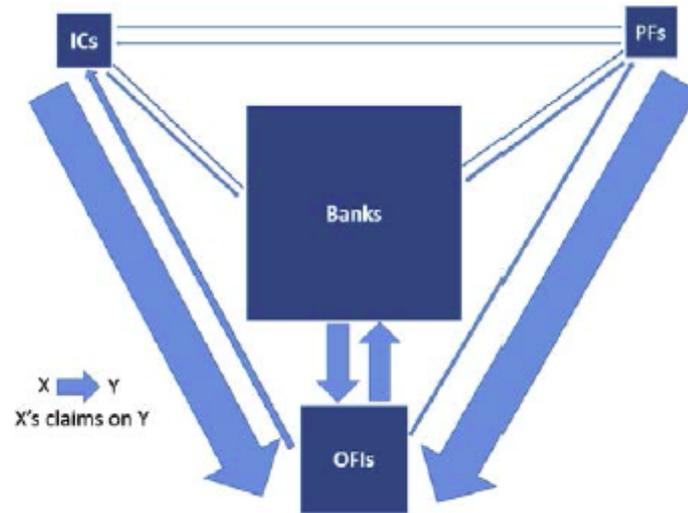
Sources: Jurisdictions' 2018 submissions (national sectoral balance sheet and other data); FSB calculations.

Using financial sector balance sheet data for NBFIs monitoring (3)

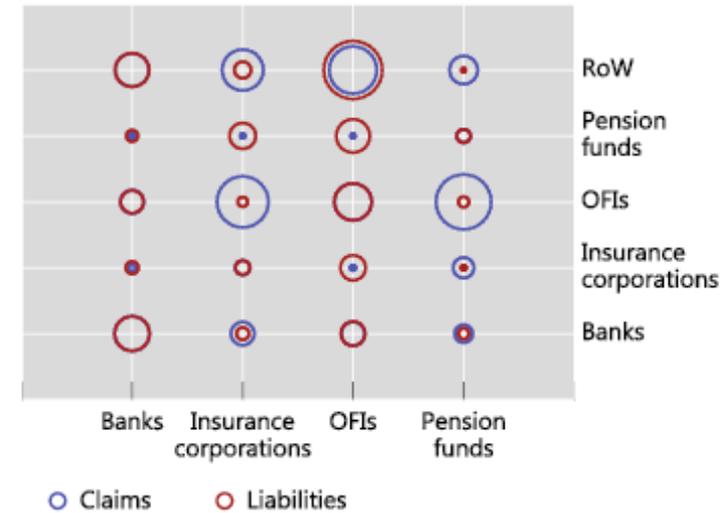
Interconnectedness among sectors¹

Exhibit 3-2

Aggregate linkages among sectors²



Aggregate linkages, as a per cent of financial assets³



Borrowing and funding centrality, and linkages as a percentage of total linkages⁴

	Funding centrality	Total claims over total linkages (%)	Borrowing centrality	Total liabilities over total linkages (%)
Banks	0.32	0.33	0.43	0.35
Insurance corporations	0.13	0.13	0.01	0.04
OFIs	0.37	0.36	0.55	0.61
Pension funds	0.18	0.19	0.00	0.00

¹ This exhibit illustrates high-level observations from the analysis of interconnectedness between banks, OFIs, pension funds and insurance corporations. ² The thickness of the arrows reflects the absolute size of the exposures from a certain financial sector to the other. Cross-border exposures are not included (discussed in more detail in Section 3.4). ³ This matrix shows X's claims on and liabilities to Y, measured as a % of X's assets. Data were aggregated across jurisdictions where both linkage and asset data are available. ⁴ Funding and borrowing centrality measured as the left- and right eigenvectors of the aggregated whom-to-whom matrix. The output is normalised. Cross-border exposures are not taken into account. The computed measures do not capture risks from indirect interconnectedness and do not take into account important qualitative aspects, such as the difference between secured and unsecured liabilities.

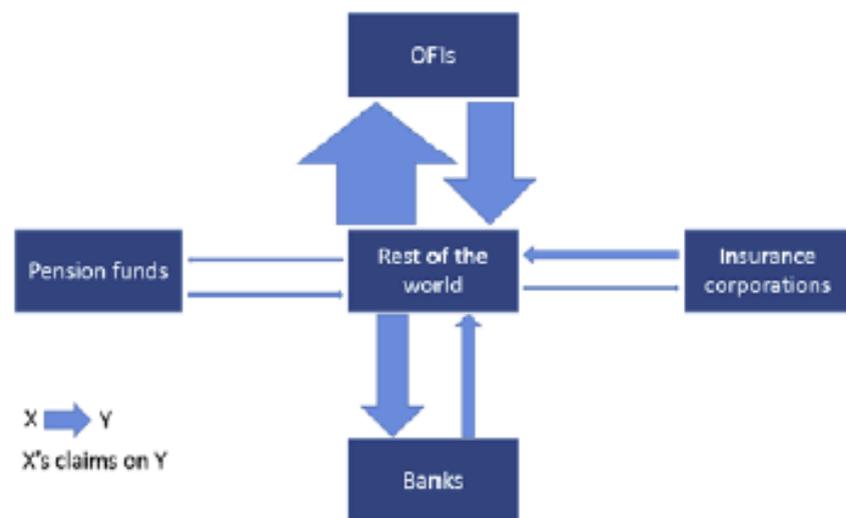
Sources: Jurisdictions' 2018 submissions (national sectoral balance sheet and other data); FSB calculations.

Using financial sector balance sheet data for NBFIs monitoring (4)

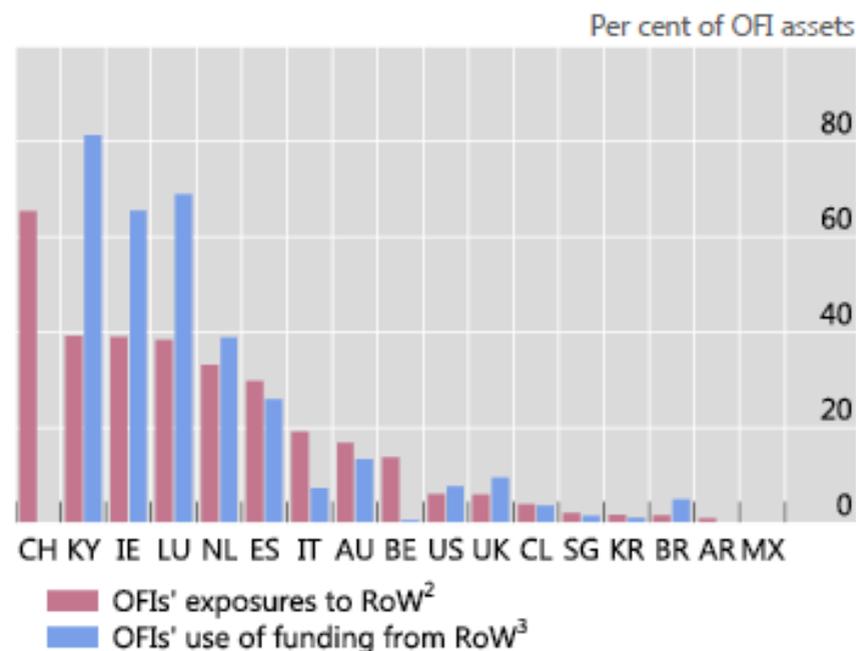
Cross border interconnectedness

Exhibit 3-13

Aggregate exposures between financial intermediaries and the rest of the world (RoW)¹



OFIs' cross-border interconnectedness, at end-2017



¹ RoW exposure is the aggregate cross-border exposures reported by 21 jurisdictions and the euro area, where data were available. This exhibit illustrates high-level observations from the analysis of the cross-border linkages of OFIs, pension funds and insurance corporations. The thickness of the arrows reflects the absolute size of the cross-border exposures from a certain financial sector. ² OFIs' exposures to the rest of the world as a share of OFI assets. ³ OFIs' liabilities to the rest of the world as a share of OFI assets. This figure is not available for CH, and was reported as zero by AR and MX.

Sources: Jurisdictions' 2018 submissions (national sectoral balance sheet and other data); FSB calculations.

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

G-20 DGI recommendations relevant to the use of financial accounts¹

Peter van de Ven,
OECD

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



G-20 DGI RECOMMENDATIONS RELEVANT TO THE USE OF FINANCIAL ACCOUNTS

Workshop on the Use of Financial Accounts
Istanbul, March 18 – 20, 2019

Peter van de Ven
Head of National Accounts, OECD



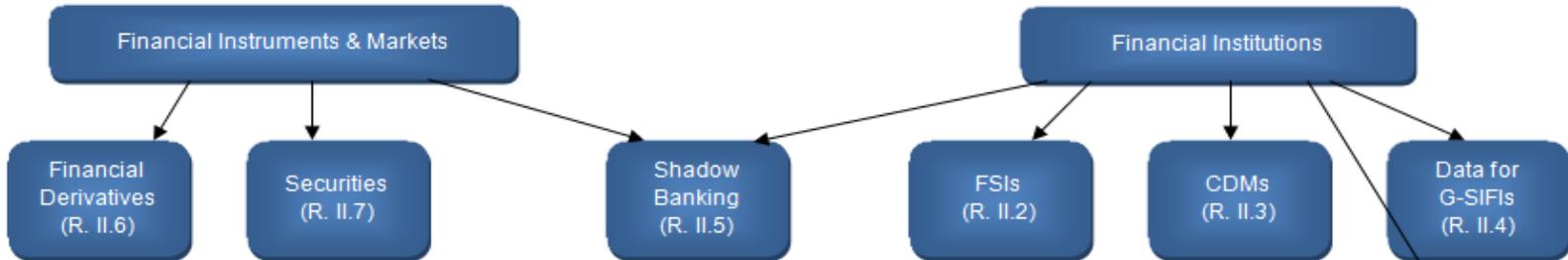
Introduction



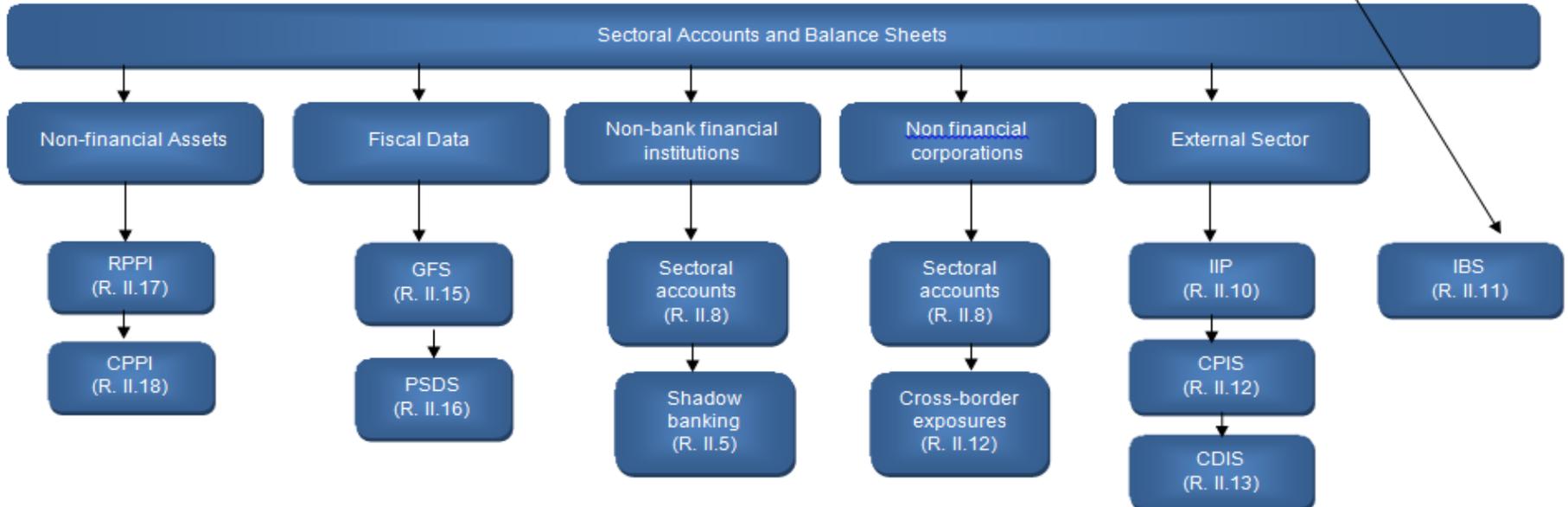


G-20 Data Gaps Initiative

I. Monitoring risk in the financial sector



II. Vulnerabilities, Interconnections, and Spillovers





G-20 DGI Recommendation #8 on Institutional Sector Accounts

- **G-20 DGI Phase II Recommendation # 8**

*“The G-20 economies to compile and disseminate, on a **quarterly** and **annual** frequency, **sectoral accounts flows and balance sheet data, based on the internationally agreed template**, including data for the other (non-bank) financial corporations sector, and develop from-whom to-whom matrices for both transactions and stocks to support balance sheet analysis. The IAG, in collaboration with the Inter-Secretariat Working Group on National Accounts (ISWGNA), to encourage and monitor the progress by G-20 economies.”*

- **Key features**

- Integrated set of institutional sector accounts, both non-financial and financial
- Focus on financial accounts and balance sheets
- Encouraged item in SDDS, required item in SDDS Plus
- Most of the items also part of current international collection of data on national accounts



Objectives of the templates

- **Templates set the scope of institutional sector accounts that countries should preferably compile and disseminate:**
 - Meant to guide the implementation of the accounts
 - Ensure internationally coordinated efforts towards producing and disseminating internationally comparable sectoral accounts
- Should have a **long-term horizon** and be valid as long as the current statistical standard (2008 SNA/ESA 2010) is expected to remain valid
- Should **allow reporting** by countries that compile data **with varying levels of detail**
- Recognises the broad nature of the SNA framework, but also establishes priorities to ensure international comparability



Elements of the templates

- **Core templates:** distinction between “target” items and “encouraged” items, with classifications for:
 - ✓ Sectors and sub-sectors
 - ✓ Transactions in current and capital accounts
 - ✓ Transactions in and positions of financial instruments
 - ✓ Non-financial assets
- **More advanced ambitions:**
 - ✓ **Shadow banking**
 - ✓ **Interconnectedness (from-whom-to-whom)**



Core templates



Elements of the core templates

- **Three different templates:**
 - ✓ Current and capital accounts
 - ✓ Financial accounts and balance sheets
 - ✓ Stocks of non-financial assets
- **Frequency:** annual and, with the exception of stocks of non-financial assets, quarterly
- **Timeliness:** 4 months for quarterly data, and 9 months for annual data



Elements of the core templates

- **Three different templates:**
 - ✓ Current and capital accounts
 - ✓ **Financial accounts and balance sheets**
 - ✓ **Stocks of non-financial assets**
- **Frequency:** annual and, with the exception of stocks of non-financial assets, quarterly
- **Timeliness:** 4 months for quarterly data, and 9 months for annual data



Financial stocks and transactions: instrument breakdown

Requirements:

Financial instruments: assets and liabilities (when applicable according to SNA definition)

Timeliness: T+4 months for Q and T+9 months for A (encouraged)

Measure: current prices, non-seasonally adjusted (target)

Consolidation: non-consolidated data for all sectors + consolidated data for S13 as a target (and on an encouraged basis for all other sectors)

	Quarterly	Annual
F1 Monetary gold and SDRs		
F11 Monetary gold		
F12 SDRs		
F2 Currency and deposits		
Of which: Domestic currency *		
F21 Currency		
F22 Transferable deposits		
F221 Interbank positions		
F229 Other transferable deposits		
F29 Other deposits		
F3 Debt securities		
Of which: Domestic currency *		
F31 Short-term		
F32 Long-term		
With remaining maturity of one year or less *		
With remaining maturity of more than a year *		
F4 Loans		
Of which: Domestic currency *		
F41 Short-term		
F42 Long-term		
With remaining maturity of one year or less *		
With remaining maturity of more than a year *		

	Quarterly	Annual
F5 Equity and investment fund shares		
F51 Equity		
F511 Listed shares		
F512 Unlisted shares		
F519 Other equity		
F52 Investment fund shares/units		
F521 Money market fund shares/units		
F522 Non-MMF investment fund shares/units		
F6 Insurance, pension and standardized guarantee schemes		
F61 Non-life insurance technical reserves		
F62 Life insurance and annuity entitlements		
F63+F64+F65 Retirement entitlements		
F63 Pension entitlements		
F64 Claim of pension fund on pension managers		
F65 Entitlements to non-pension benefits		
F66 Provisions for calls under standardized guarantees		
F7 Financial derivatives and employee stock options		
F71 Financial derivatives		
F711 Options		
F712 Forwards		
F72 Employee stock options		
F8 Other accounts receivable/payable		
Of which: Domestic currency *		
F81 Trade credits and advances		
F89 Other accounts receivable/payable		

= Target

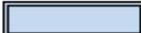
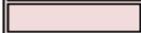
= Encouraged

* : item only relevant for stocks, not requested for flows



Financial stocks and transactions: sector breakdown

	Quarterly	Annual
S1 - Total Economy		
S11 - Non-financial corporations		
S11D0 - Domestically controlled non-financial corporations		
S11001 - Public non-financial corporations		
S110011 - Of which: Public non-financial corporations, which are part of domestic multinationals		
S11002 - Private, national non-financial corporations		
S110021 - Of which: National private non-financial corporations, which are part of domestic multinationals		
S11003 - Foreign-controlled non-financial corporations		
S12 - Financial corporations		
S121+S122+S123 - Monetary financial institutions		
S121 - Central bank		
S122 - Other deposit-taking corporations		
S123 - Money-market funds		
S124+S125+S126+S127 - Other financial corporations		
S124 - Non-MMF investment funds		
S125 - Other financial Intermediaries except Insurance corporations and pension funds		
S126 - Financial Auxiliaries		
S127 - Captive financial institutions and money lenders		
S128+S129 - Insurance corp. and pension funds		
S128 - Insurance corporations		
S129 - Pension funds		
S12D0 - Domestically controlled financial corporations		
S12001 - Public financial corporations		
S120011 - Of which: Public financial corporations, which are part of domestic multinationals		
S12002 - Private, national financial corporations		
S120021 - Of which: National private financial corporations, which are part of domestic multinationals		
S12003 - Foreign-controlled financial corporations		
S13 - General government		
S1314 - Of which: Social Security Funds		
S14+S15 - Households and NPISHs		
S14 - Households		
S15 - NPISHs		
S2 - Rest of the World		

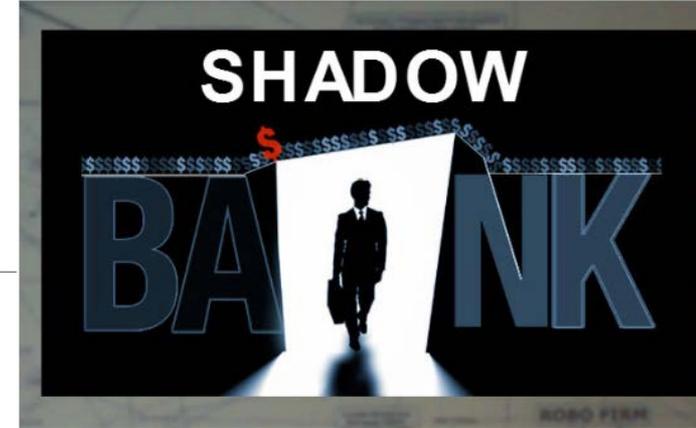
 = Target
 = Encouraged



More advanced ambitions: shadow banking



Introduction



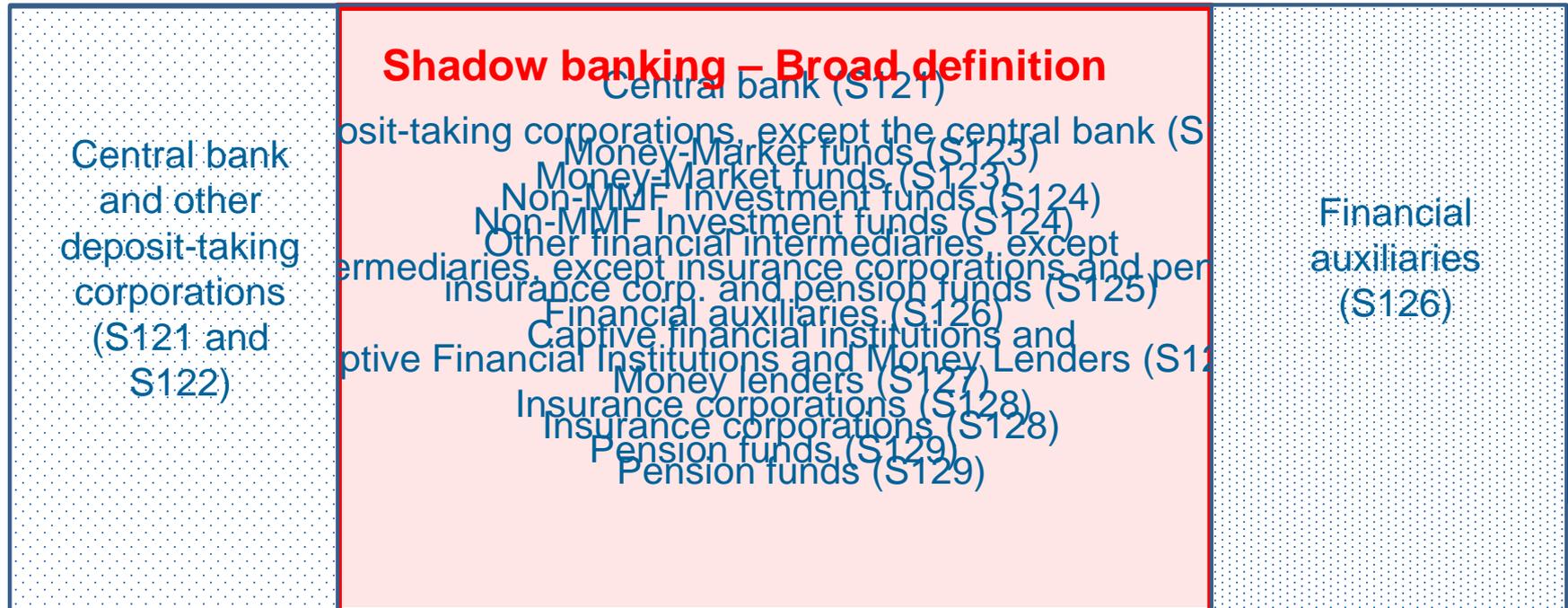
- Financial crisis increased interest in trends in financial world
- **Shadow banking is regarded as one of main sources of financial stability concerns**
- Users look at National Accounts to provide insight in the relevant trends at an aggregated level
- Recommendation II.5 of DGI:
*“The OECD, in coordination with the FSB and the BIS, will investigate the possibilities for **further breakdowns of the financial corporations’ sector** in SNA-based sectoral accounts **in order to approximate shadow banking from a macro-perspective**, and come up with a concrete proposal by the end of 2016”*



Defining and capturing shadow banking

Capturing shadow banking in national accounts is relatively easy starting from the FSB's broad definition: ***“The system of credit intermediation involving entities and activities outside of the regular banking system”***

Financial corporations





Defining and capturing shadow banking

- Capturing shadow banking in national accounts using the FSB's narrow definition is more complicated:
 - “A system of credit intermediation that involves entities and activities **outside the regular banking system**, and raises i) **systemic risk concerns**, in particular by maturity/liquidity transformation, leverage and imperfect credit risk transfer, and/or ii) **regulatory arbitrage concerns**”
 - ⇒ **Characteristics of individual entity determine whether it qualifies as ‘shadow bank’ (micro approach)**
- National accounts can still provide useful information on sectors involved in shadow banking and on main related instruments; however, **to have more insight in different types of activities and types of risks, additional breakdowns are needed** with regard to sectors, instruments and interconnectedness



Defining and capturing shadow banking: breakdown into sectors

Sectors involved starting from the FSB's Policy Framework:

Economic function	Definition	Typical entity types	Primary subsector in SNA
EF1	Management of collective investment vehicles with features that make them susceptible to runs	Fixed income funds, mixed funds, credit hedge funds, real estate funds	MMFs and non-MMF investment funds (S123 + S124)
EF2	Loan provision that is dependent on short-term funding	Finance companies, leasing companies, factoring companies, consumer credit companies	Other financial intermediaries and captive financial institutions (S125 + S127)
EF3	Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets	Broker-dealers	Other financial intermediaries (S125)
EF4	Facilitation of credit creation	Credit insurance companies, financial guarantors, monolines	Insurance corporations (S128)
EF5	Securitisation-based credit intermediation and funding of financial entities	Securitisation vehicles	Other financial intermediaries and captive financial institutions (S125 + S127)
Other	Related to one of the five economic functions, but not attributable due to their residual nature	Shadow banking not classified into economic functions	S12 except S121, S122 and S126



Defining and capturing shadow banking: breakdown into instruments

- Current instrument breakdown already provides rather detailed information. However, **additional breakdowns may provide further insights with respect to the following financial risks:**
 - **Liquidity risk:**
 - Need to distinguish repurchase agreements, securities lending and margin lending in short term loans (F41)
 - **Maturity risk:**
 - Include data on remaining maturity (F3 and F4), in addition to original maturity
 - **Credit risk transfer:**
 - Nominal value for debt securities (F3) (liability side), in addition to market value
 - ‘Of which’-item in loans (F4) for ‘non-performing loans’
 - Breakdowns into domestic and foreign currency
 - **Credit risk transfer and leverage:**
 - Include possible exposure with regard to financial derivatives and other contingent liabilities



Defining and capturing shadow banking: general

- **Non-consolidated stocks of financial assets and liabilities**
- **Frequency: annual and quarterly**
- Distinction between “**tier 1**” items; and “**tier 2**” items, ... to guide countries when setting priorities for data compilation
- General purpose:
 - To **encourage data compilers** to start compiling and providing additional information in line with these more advanced ambitions
 - To **streamline countries’ efforts** ensuring the **highest possible level of cross-country comparison and consistency**



New financial trends, including shadow banking: instruments (stocks only)

More advanced ambitions (all encouraged):

Financial instruments: assets and liabilities (when applicable according to SNA definition)

Measure: current prices, non-seasonally adjusted

Consolidation: non-consolidated data for all sectors

	Quarterly	Annual
AF1 Monetary gold and SDRs		
AF11 Monetary gold		
AF12 SDRs		
AF2 Currency and deposits		
Of which: Domestic currency		
AF21 Currency		
AF22 Transferable deposits		
AF221 Interbank positions		
AF229 Other transferable deposits		
AF29 Other deposits		
AF3 Debt securities		
Of which: Domestic currency		
AF31 Short-term		
Of which: Nominal value (for liabilities)		
AF32 Long-term		
Of which: Nominal value (for liabilities)		
With remaining maturity of one year or less		
With remaining maturity of more than a year		
AF4 Loans		
Of which: Domestic currency		
Of which: non-performing loans		
AF41 Short-term		
Of which: repurchase agreement, securities lending and margin lending		
AF42 Long-term		
With remaining maturity of one year or less		
With remaining maturity of more than a year		
AF5 Equity and investment fund shares		
Of which: Domestic currency		
AF51 Equity		
AF511 Listed shares		
AF512 Unlisted shares		
AF519 Other equity		

	Quarterly	Annual
AF52 Investment fund shares/units		
AF521 Money market fund shares/units		
AF522 Non-MMF investment fund shares/units		
AF6 Insurance, pension and standardized guarantee schemes		
Of which: Domestic currency		
AF61 Non-life insurance technical reserves		
AF62 Life insurance and annuity entitlements		
AF63+AF64+AF65 Retirement entitlements		
AF63 Pension entitlements		
AF64 Claim of pension fund on pension managers		
AF65 Entitlements to non-pension benefits		
AF66 Provisions for calls under standardized guarantees		
AF7 Financial derivatives and employee stock options		
Of which: Domestic currency		
AF71 Financial derivatives		
AF711 Options		
AF712 Forwards		
AF72 Employee stock options		
AF8 Other accounts receivable/payable		
Of which: Domestic currency		
AF81 Trade credits and advances		
AF89 Other accounts receivable/payable		

Memorandum item	Quarterly	Annual
Possible exposure with regard to:		
Financial derivatives		
Options		
Forwards		
Other contingent liabilities		
Financial guarantees		
Credit risk insurance		

 = Already part of current data collection and target in the DGI-2 general template for financial stocks and flows

 = Tier 2 (encouraged, second level of priority)



New financial trends, including shadow banking: sector breakdown

	Quarterly	Annual
S12 - Financial corporations		
S121+S122+S123 - Monetary financial institutions		
S121 - Central bank		
S122 - Deposit-taking corporations except the central bank		
S123 - Money market funds		
S123A - Stable NAV MMFs		
S123B - Floating NAV MMFs		
S124+S125+S126+S127 - Other financial institutions (other than MFIs, ICs and PFs)		
S124 - Non-MMF Investment Funds		
S124A - Open end funds		
S124A1 - Real estate funds		
S124A2 - Equity funds		
S124A3 - Bond funds		
S124A4 - Mixed or balanced funds		
S124A5 - Hedge funds		
S124A9 - Other funds		
S124B - Closed end funds		
S124B1 - Real estate funds		
S124B2 - Equity funds		
S124B3 - Bond funds		
S124B4 - Mixed or balanced funds		
S124B5 - Hedge funds		
S124B9 - Other funds		

	Quarterly	Annual
S125 - Other financial intermediaries except ICs and PFs		
S125A - Financial vehicle corporations engaged in securitisation		
S125B - Financial corporations engaged in lending		
S125C - Security and derivative dealers		
S125D - Specialised financial corporations		
S125D1 - of which clearing houses		
S125E - Other OFIs		
S126 - Financial auxiliaries		
S127 - Captive financial institutions and money lenders		
S1271 - Trusts, estate and agency accounts		
S1272 - Brass plate companies		
S1273 - Special Purpose Entities or conduits		
S1274 - Other captive finance companies and money lenders		
S128+S129 - Insurance corporations and pension funds		
S128 - Insurance corporations		
S1281 - Non-life insurance corporations		
S1282 - Life insurance corporations		
S129 - Pension funds		
S129A - Defined benefit funds		
S129B - Defined contribution funds		

 = Already part of current data collection and target in the DGI-2 general template for financial stocks and flows

 = Tier 1

 = Tier 2



**More advanced ambitions:
interconnectedness
(from-whom-to-whom)**



Background

- From-whom-to-whom information to be compiled according to the SNA 2008:
 - for both **transactions and positions**
 - on a **non-consolidated** basis
 - for both **annual and quarterly** frequencies
- Considered as a **more advanced ambition**, so no binding targets for dissemination
- **Initial proposal:**
 - Three levels of (sub)sector details proposed, based on the varying levels of resources and current capabilities: levels 1, 2, & 3
 - Each financial instrument allocated to a given sector level





Final proposal on f-w-t-w tables

- Data generally **only available for the main sectors**
- **Final recommendations:**
 - Only main sectors to be included in the template
 - All instruments included; split by tier 1 and tier 2
 - Both annual and quarterly frequency



From-whom-to-whom: instruments and sectors

More advanced ambitions (all encouraged):

Measure: current prices

Consolidation: non-consolidated data for all sectors

Sector breakdown
S1 - Total Economy
S11 - Non-financial corporations
S12 - Financial corporations
S13 - General government
S14+S15 - Households and NPISHs
S2 - Rest of the World



Instrument		Issuer						
		S1					S2	Total
Holder	S1	S11	S12	S13	S14	S15		
		S11						
		S12						
		S13						
		S14_S15						
Total								
S2								
Total								

Instrument breakdown	Quarterly	Annual
F - Total assets/liabilities		
F1 - Monetary gold and SDRs		
F2 - Currency and deposits		
F21 - Currency		
F22_F29 - Deposits		
F3 - Debt securities		
F31 - Debt securities, short-term		
F32 - Debt securities, long-term		
F4 - Loans		
F41 - Loans, short-term		
F42 - Loans, long-term		
F5 - Equity and investment funds shares		
F51 - Equity		
F511 - Listed shares		
F512+F519 - Unlisted shares and other equity		
F52 - Investment funds shares or units		
F6 - Insurance, pension and standardized guarantee schemes		
F61 - Non-life insurance technical reserves		
F62 - Life insurance and annuity entitlements		
F63 - Pension entitlements		
F64 - Claim of pension funds on pension managers		
F65 - Entitlements to non-pension benefits		
F66 - Provisions for calls under standardised guarantees		
F7 - Financial derivatives and employee stock options		
F71 - Financial derivatives		
F72 - Employee stock options		
F8 - Other accounts receivable/payable		
F81 - Trade credits		
F89 - Other accounts receivable/payable excluding trade credits		

= Tier 1
 = Tier 2

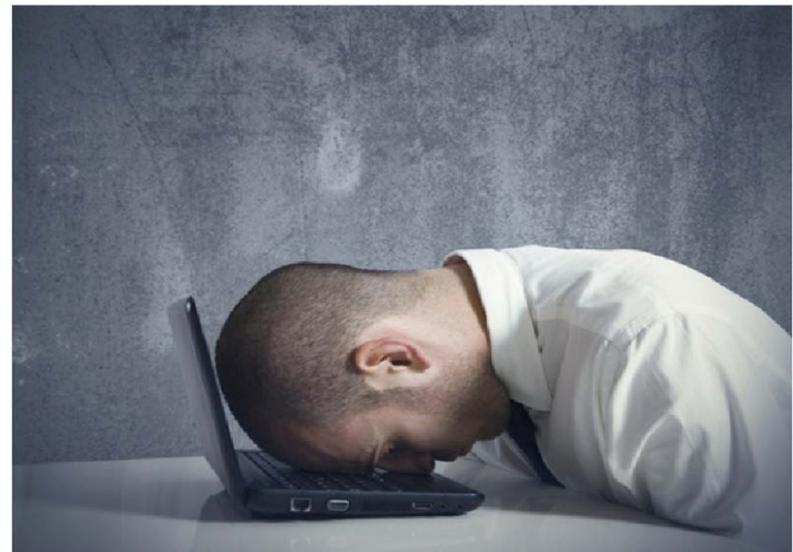


Way forward



Way forward

- Templates **endorsed** by the G-20 Contact Group
- **Rolled out in the course of 2019**
- Not only for G-20 economies, for also for **other EU and OECD Member states** => update of the general national accounts templates
- **Goal: implementation by 2021**, although not all G-20 economies may be able to produce and disseminate quarterly data





Thank you for your attention!





Additional slides on data availability



Non-financial assets – data Availability

Stocks of Non-Financial Assets: Sectors and Asset Types	S1	S11	S12	S128+S129	S13	S14+S15	S14	S15
AN1 Produced non-financial assets	High	Medium	Medium	Low	Medium	Medium	Medium	Medium
AN11 Fixed assets	High	High	High	Low	High	High	Medium	Medium
of which: AN111 Dwellings	High	High	High	Low	High	High	Medium	Medium
of which: AN112 Other buildings and structures	High	High	High	Low	High	High	Medium	Medium
AN1121 Buildings other than dwellings	High	High	High	Low	High	High	Medium	Medium
AN1122 Other structures	High	High	High	Low	High	High	Medium	Medium
of which: AN117 Intellectual property products	High	High	High	Low	High	High	Medium	Medium
AN12 Inventories	High	High	High	Low	High	High	Medium	Medium
AN13 Valuables	Low	Low	Low	Low	Low	Low	Low	Low
AN2 Non-produced non-financial assets	Low	Low	Medium	Low	Medium	Low	Low	Low
AN21 Natural resources	Low	Low	Low	Low	Low	Low	Low	Low
of which: AN211 Land	Medium	Medium	Medium	Low	Medium	High	Medium	Medium
of which: AN2111 Land underlying buildings and structures	Medium	Medium	Medium	Low	Medium	Medium	Low	Low
of which: AN21111 Land underlying dwellings	Medium	Medium	Medium	Low	Medium	Medium	Low	Low
of which: AN211121 Land underlying buildings other than dwellings	Low	Low	Low	Low	Low	Low	Low	Low
of which: AN212 Mineral and energy reserves	Medium	Low	Low	Low	Low	Low	Low	Low
AN22 Contracts, leases and licenses	Low	Low	Low	Low	Low	Low	Low	Low
AN23 Goodwill and marketing assets	Low	Low	Low	Low	Low	Low	Low	Low

	Target
	Encouraged

Shadow banking: data availability:

- Sectors covered by existing data collections (i.e. Financial Balance Sheets and Institutional Investors): high to medium
- Other sectors (not covered by existing data collections): medium to low

Institutional sectors	Capturing relevant trends in the financial world (including shadow banking)					
	quarterly			annual		
	yes	no	data availability	yes	no	data availability
- Central Bank (S121)	89%	11%	High	83%	17%	High
- Deposit taking corporations except the central bank (S122)	94%	6%	High	89%	11%	High
- Money market funds (S123)	72%	28%	High	72%	28%	High
Stable NAV MMFs	22%	78%	Low	28%	72%	Low
Floating NAV MMFs	28%	72%	Low	33%	67%	Low
- Non-MMF investment funds (S124)	72%	28%	High	72%	28%	High
Open end funds	50%	50%	Medium	56%	44%	Medium
Bond funds	39%	61%	Low	44%	56%	Medium
Equity funds	44%	56%	Medium	50%	50%	Medium
Mixed or balanced funds	44%	56%	Medium	50%	50%	Medium
Real estate funds	50%	50%	Medium	56%	44%	Medium
Hedge funds	33%	67%	Low	39%	61%	Low
Other funds	44%	56%	Medium	50%	50%	Medium
Closed end funds	44%	56%	Medium	50%	50%	Medium
Bond funds	17%	83%	Low	22%	78%	Low
Equity funds	22%	78%	Low	28%	72%	Low
Mixed or balanced funds	22%	78%	Low	28%	72%	Low
Real estate funds	33%	67%	Low	39%	61%	Low
Hedge funds	17%	83%	Low	22%	78%	Low
Other funds	28%	72%	Low	33%	67%	Low
- Other financial intermediaries except ICPF (S125)	72%	28%	High	72%	28%	High
Financial vehicle corporations engaged in securitisation	56%	44%	Medium	56%	44%	Medium
Financial corporations engaged in lending	50%	50%	Medium	56%	44%	Medium
Security and derivative dealers	44%	56%	Medium	50%	50%	Medium
Specialised financial corporations	22%	78%	Low	28%	72%	Low
of which: Clearing houses	11%	89%	Low	17%	83%	Low
Other OFIs	39%	61%	Low	44%	56%	Medium
- Financial auxiliaries (S126)	61%	39%	Medium	61%	39%	Medium
- Captive financial institutions (S127)	56%	44%	Medium	56%	44%	Medium
Trusts, estate and agency accounts	6%	94%	Low	11%	89%	Low
Brass plate companies	11%	89%	Low	17%	83%	Low
Special Purpose Entities or conduits	11%	89%	Low	17%	83%	Low
Other captive finance companies and money lenders	17%	83%	Low	22%	78%	Low
- Insurance corporations (S128)	83%	17%	High	83%	17%	High
Non-life insurance corporations	67%	33%	Medium	67%	33%	Medium
Life insurance corporations	67%	33%	Medium	67%	33%	Medium
- Pension funds (S129)	72%	28%	High	72%	28%	High
Defined benefit funds	28%	72%	Low	28%	72%	Low
Defined contribution funds	28%	72%	Low	28%	72%	Low

Tier 1

Tier 2

Shadow banking: data availability:

- Instruments covered by existing data collections (i.e. Financial Balance Sheets and Institutional Investors): high to medium
- Other instruments (not covered by existing data collections): medium (for a couple of countries) to low (for most of the respondent countries)

Capturing relevant trends in the financial world (including shadow banking)

	quarterly			annual		
	yes	no	data availability	yes	no	data availability
Financial instruments (stocks)						
- Monetary gold and deposits (AF.1)						
- Currency and deposits (AF.2)						
- Debt securities (AF.3)						
Short term (AF.31)						
Nominal value (for liabilities)	56%	44%	Medium	53%	47%	Medium
Long term (AF.32)						
With remaining maturity of one year and less	33%	67%	Low	29%	71%	Low
Nominal value (for liabilities)	39%	61%	Low	41%	59%	Medium
With remaining maturity of more than a year	33%	67%	Low	29%	71%	Low
Nominal value (for liabilities)	39%	61%	Low	35%	65%	Low
- Loans (AF.4)						
of which: non-performing loans	33%	67%	Low	35%	65%	Low
Short term (AF.41)						
o.w.: repurchase agreement, securities lending and margin	44%	56%	Medium	47%	53%	Medium
Long term (AF.42)						
With remaining maturity of one year and less	17%	83%	Low	18%	82%	Low
With remaining maturity of more than a year	17%	83%	Low	18%	82%	Low
- Equity and investment fund shares (AF.5)						
of which: Domestic currency	50%	50%	Medium	53%	47%	Medium
- Insurance, pension and standardized guarantees (AF.6)						
of which: Domestic currency	33%	67%	Low	35%	65%	Low
- Financial derivatives and employee stock options (AF.7)						
of which: Domestic currency	39%	61%	Low	41%	59%	Medium
- Other accounts receivable payable (AF.8)						
- Memorandum item: Possible exposure with regard to						
Financial derivatives	28%	72%	Low	29%	71%	Low
Options	22%	78%	Low	24%	76%	Low
Forwards	22%	78%	Low	24%	76%	Low
Other contingent liabilities	11%	89%	Low	12%	88%	Low
Financial guarantees	11%	89%	Low	12%	88%	Low
Credit risk insurance	11%	89%	Low	12%	88%	Low

Tier 1

Tier 2



Sector details of the initial proposal

- Sector level 1: breakdown of main sectors' financial assets by resident (S1) and non-resident (S2) counterparties with of-which items for resident counterparties belonging to S12 and S13
- Sector level 2: breakdown of total economy (S1) into the main sectors (S11, S12, S13, S14_S15) and S2
- Sector level 3: further breakdowns of sectors S12, S13, S14_S15, and S2

Sector level 1			Sector level 2					Sector level 3		
Total economy (S1) of which: Financial corporations (S12) of which: General government (S13) Rest of world (S2)			Total economy (S1) Non-financial corporations (S11) Financial corporations (S12) General government (S13) Households and NPISHs (S14_S15) Rest of world (S2)					Total economy (S1) Non-financial corporations (S11) Financial corporations (S12) Monetary financial institutions (S121+S122+S123) Non-MMF investment funds (S124) Other financial institutions (S125+S126+S127) Insurance corporations and Pension funds (S128+S129) Insurance corporations (S128) Pension funds (S129) General government (S13) Central government (S1311) State government (S1312) Local government (S1313) Social security funds (S1314) Households and NPISHs (S14_S15) Households (S14) NPISHs (S15) Rest of world (S2) of which: Non-financial corporations (S11) of which: Financial corporations (S12) of which: General government (S13) of which: Households and NPISHs (S14_S15)		

Instrument		Issuer								
		S1					S2	Total		
Holder	S1	S11	S12	S13	S14_S15	Total				
			S11							
			S12							
			S13							
			S14_S15							
		Total								
		S2								
	Total									



Instrument details of the initial proposal

	Sector level 1	Sector level 2	Sector level 3
F - Total assets/liabilities	X		
F1 - Monetary gold and SDRs	X	X	
F2 - Currency and deposits	X		
F21 - Currency	X		
F22_F29 - Deposits	X	X	X
F3 - Debt securities	X	X	
F31 - Debt securities, short-term	X	X	
F32 - Debt securities, long-term	X	X	
F4 - Loans	X	X	X
F41 - Loans, short-term	X	X	
F42 - Loans, long-term	X	X	
F5 - Equity and investment funds shares	X		
F51 - Equity	X		
F511 - Listed shares	X	X	
F512+F519 - Unlisted shares and other equity	X		
F52 - Investment funds shares or units	X	X	
F6 - Insurance, pension and standardized guarantee schemes	X		
F61 - Non-life insurance technical reserves	X	X	
F62 - Life insurance and annuity entitlements	X	X	
F63 - Pension entitlements	X	X	
F64 - Claim of pension funds on pension managers	X		
F65 - Entitlements to non-pension benefits	X		
F66 - Provisions for calls under standardised guarantees	X		
F7 - Financial derivatives and employee stock options	X		
F71 - Financial derivatives	X	X	
F72 - Employee stock options	X		
F8 - Other accounts receivable/payable	X		
F81 - Trade credits	X	X	X
F89 - Other accounts receivable/payable excluding trade credits	X		



Initial proposal: availability of data

From-whom-to-whom (f-w-t-w) information			
Instrument/proposed sector levels	Sector level 1	Sector level 2	Sector level 3
F - Total assets/liabilities	Medium	Low	Low
F1 - Monetary gold and SDRs	Medium	High	Low
F2 - Currency and deposits	Medium	Low	Low
F21 - Currency	Medium	Low	Low
F22 F29 - Deposits	Medium	High	Medium
F3 - Debt securities	High	High	Low
F31 - Debt securities, short-term	Medium	High	Low
F32 - Debt securities, long-term	Medium	High	Low
F4 - Loans	High	High	Medium
F41 - Loans, short-term	Medium	Medium	Low
F42 - Loans, long-term	Medium	Medium	Low
F5 - Equity and investment funds shares	Medium	Low	Low
F51 - Equity	Medium	Low	Low
F511 - Listed shares	Medium	Medium	Low
F512+F519 - Unlisted shares and other equity	Medium	Low	Low
F52 - Investment funds shares or units	Medium	Medium	Low
F6 - Insurance, pension and standardized guarantee schemes	Medium	Low	Low
F61 - Non-life insurance technical reserves	Medium	Medium	Low
F62 - Life insurance and annuity entitlements	Medium	Medium	Low
F63 - Pension entitlements	Medium	Medium	Low
F64 - Claim of pension funds on pension managers	Medium	Low	Low
F65 - Entitlements to non-pension benefits	Low	Low	Low
F66 - Provisions for calls under standardised guarantees	Low	Low	Low
F7 - Financial derivatives and employee stock options	Low	Low	Low
F71 - Financial derivatives	Low	Low	Low
F72 - Employee stock options	Low	Low	Low
F8 - Other accounts receivable/payable	Medium	Low	Low
F81 - Trade credits	Low	Low	Low
F89 - Other accounts receivable/payable excluding trade credits	Low	Low	Low

	Tier 1
	Tier 2



IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey

18-20 March 2019, Istanbul, Turkey

Financial Accounts-Turkey: A Journey in Time¹

Adnan Eken and Burcu Çakmak,

Central Bank of the Republic of Turkey

¹ This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Financial Accounts-Turkey:

A Journey in Time

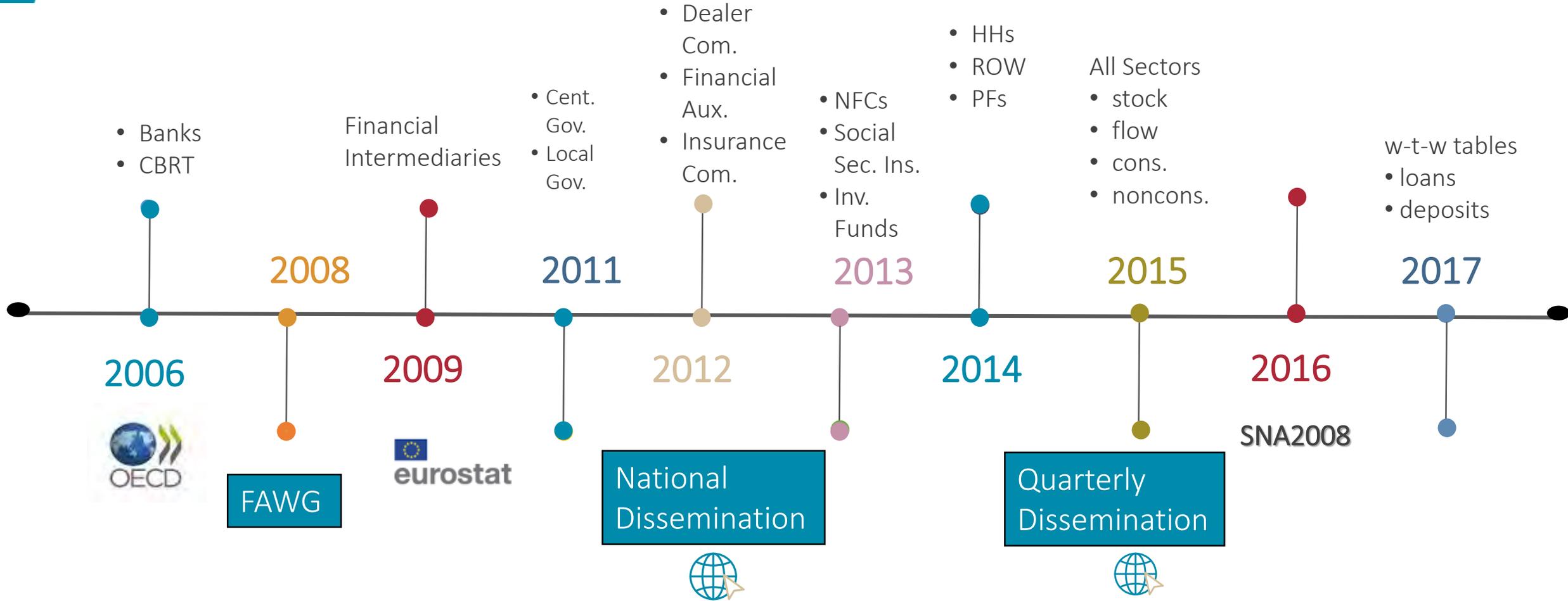
Adnan Eken

Burcu Çakmak

CBRT Statistics Department

March 18 -20, 2019 | İSTANBUL

Timeline



Data provision and publications...

Financial Accounts 2012

Central Bank of the Republic of Turkey

Contents

- I. Introduction..... 3
- II. Financial Institutions..... 5
- III. General Government..... 6

CENTRAL BANK OF THE REPUBLIC OF TURKEY
STATISTICS DEPARTMENT
Monetary and Financial Data Division

Financial Accounts Report 2018-III

Contents

1. EVALUATIONS
2. FROM WHOM TO WHOM (DEPOSITS AND LOANS)
3. HOUSEHOLDS
4. NON-FINANCIAL CORPORATIONS
5. TOTAL DEBT OF RESIDENT SECTORS

Summary

Financial balance sheets of assets of the Turkish economy reached TRY 14,8 billion in the third quarter of 2018 and the rest of the world increased TRY 2,007 billion.

Financial flows between the rest of the world and Turkey reveal that net transaction with the rest of the world was a net valuation decrease worth TRY 2,007 billion in the third quarter of 2018.

A cross-country comparison of the debt/GDP ratio of Turkey with the rest of the world maintained its place among the countries with the lowest debt/GDP ratio in the third quarter of 2018.

Türkiye Cumhuriyeti Merkez Bankası

5. Total Debt of Resident Sectors

The ratio of resident sectors' financial accounts-defined total debt, which is the sum of the total debt of the resident sectors and the debt securities they issue, to GDP was 165% in 2018Q3 (Chart 21).

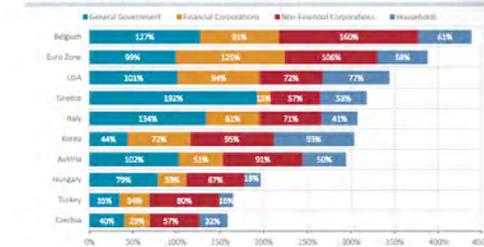
Chart 21: Total Debt of Sectors/GDP, (%) **



(*) Debts are composed of loans and government (SES) securities.
Source: CBRT, TÜRKSTAT

A cross-country comparison of this indebtedness ratio reveals that the total debt of Turkey was low in 2018Q3 (Chart 22).

Chart 22: Cross-Country Comparison of Debt/GDP Ratio by Sectors (%) (2018Q3) **



Source: CBRT, TÜRKSTAT, OECD.
(*) Other country data is as of 2018Q2.
(**) Debts are composed of loans and government debt securities.

2012

2019

Publications...

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The primary objective of the Bank is to achieve and maintain price stability.

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Core Functions

Reports

Monthly Price Developments

Inflation Report

Financial Accounts Report

Financial Stability Report

Balance of Payments and International Investment Position Report

Annual Reports

Discontinued Publications

+ Monetary and Exchange Rate Policy Texts

+ Central Bank Review

+ Research

CBRT Blog

+ Istanbul School of Central Banking

+ Books, Booklets and Factsheets

Reports

The Central Bank factors affecting...
The Bank also sh...
outlook with the...
By signing up to...
Central Bank.

FINANCIAL MARKETS 27/06/2018

HOUSEHOLD INDEBTEDNESS FROM A COMPARATIVE PERSPECTIVE

Household indebtedness in Turkey is...
importance for a balanced growth the...
stability, current account balance, an...
account when managing this process.

Central Bank of the Republic of Turkey Head Office

Hacı Bayram Mah. İstiklal Cad. No:10 06050 Ulus Altındağ Ankara Phone : (+90 312) 431 90 00

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Impact of Agricultural Banking on Agricultural Productivity

On Turkey's Total Debt

EDITOR'S CHOICE

FINANCIAL STABILITY 01/12/2016

ON TURKEY'S TOTAL DEBT

The total debt of resident sectors in Turkey is mostly driven by internal debts and its ratio to GDP has been on the decline since the third quarter of 2015, remaining at low levels compared to the selected countries.



International seminars and workshops...

29 May 2014, 1

09:00 - 09:15

09:15 - 09:45

09:45 - 10:30

10:45 - 12:30

14:00 - 15:45

1.1.

1.2.

16

ISTANBUL SCHOOL OF CENTRAL BANKING

Seminar: Sectoral Financial Accounts

ISTANBUL SCHOOL OF CENTRAL BANKING (CATALAN) 2019

SEMINAR

SECTORAL FINANCIAL ACCOUNTS

DATE & PLACE: April 8-10, İstanbul
APPLY BY : February 22

DESCRIPTION

As an important tool for analyzing financial flows between domestic sectors and with the rest of the world, sectoral financial accounts provide a way of examining the financial effects of economic policy and a map of financial flows to be used to analyze sectoral behavior in times of financial crisis. The seminar mainly aims to improve participants' knowledge of statistical methodology underlying the financial accounts, linkages, compilation methods, practical issues and future developments. The seminar will also cover how the CBRT compilers harmonize and bridge national statistics and the requirements of System of National Accounts (SNA 2008) and the European System of Accounts (ESA 2010). Moreover, organizational issues within the compiler agency and with other agencies will be considered. Sessions will be devoted to the work of national compilers of financial accounts at sector level with particular attention paid to difficult areas and subjects that need to be improved. Also, group exercises will enhance the knowledge of particular classification issues.

TARGET AUDIENCE

The seminar is designed for experts who are responsible for compiling financial accounts. Participants are encouraged to share their country experiences with short presentations in each session on the compilation of financial accounts.

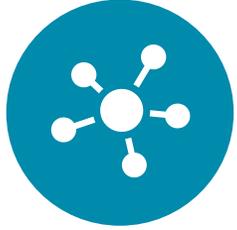
MAIN TOPICS

- Key concepts, definitions and methodology
- Institutional responsibilities, data sources
- Accounts of institutional sectors: Theory and practice (financial and non-financial corporations, government, households, rest of the world)
- Use of financial accounts



2013-2019

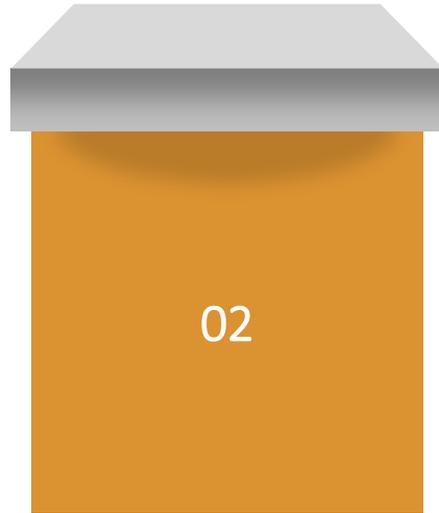
We are working on...



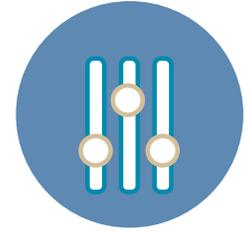
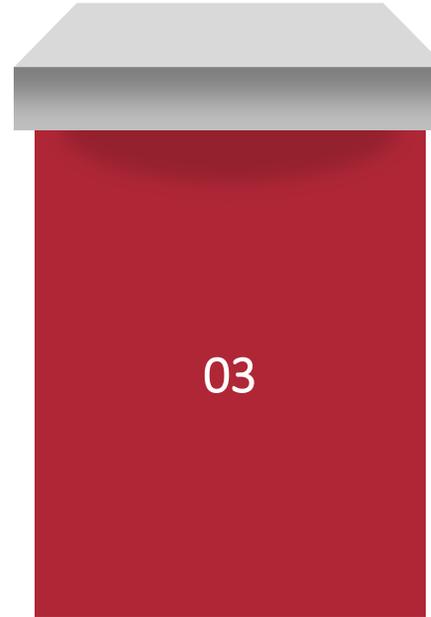
Users' Training
Activities



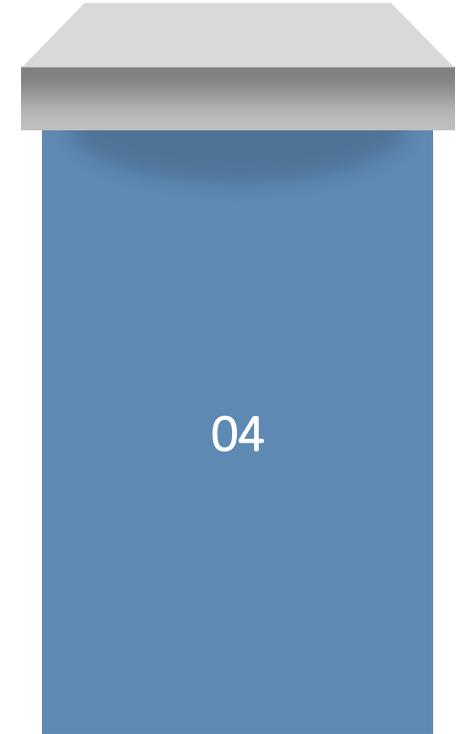
Integrated Sectoral
Accounts
CBRT-TurkStat



G20 DGI
Compliance with
additional breakdowns



IT improvement
New database



Turkish Experience in Financial Accounts: A time journey

Adnan Eken
CBRT Statistics Department

March 18 -20, 2019 | İSTANBUL

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Use of Financial Accounts at the Central Bank of the Republic of Turkey¹

Cansu Gokce Zeybek,
Central Bank of the Republic of Turkey

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Use of Financial Accounts at CBRT

Cansu Gokce Zeybek

MARCH,18 2019 | ISTANBUL,TURKEY

Outline



Use of Financial Accounts in Turkey

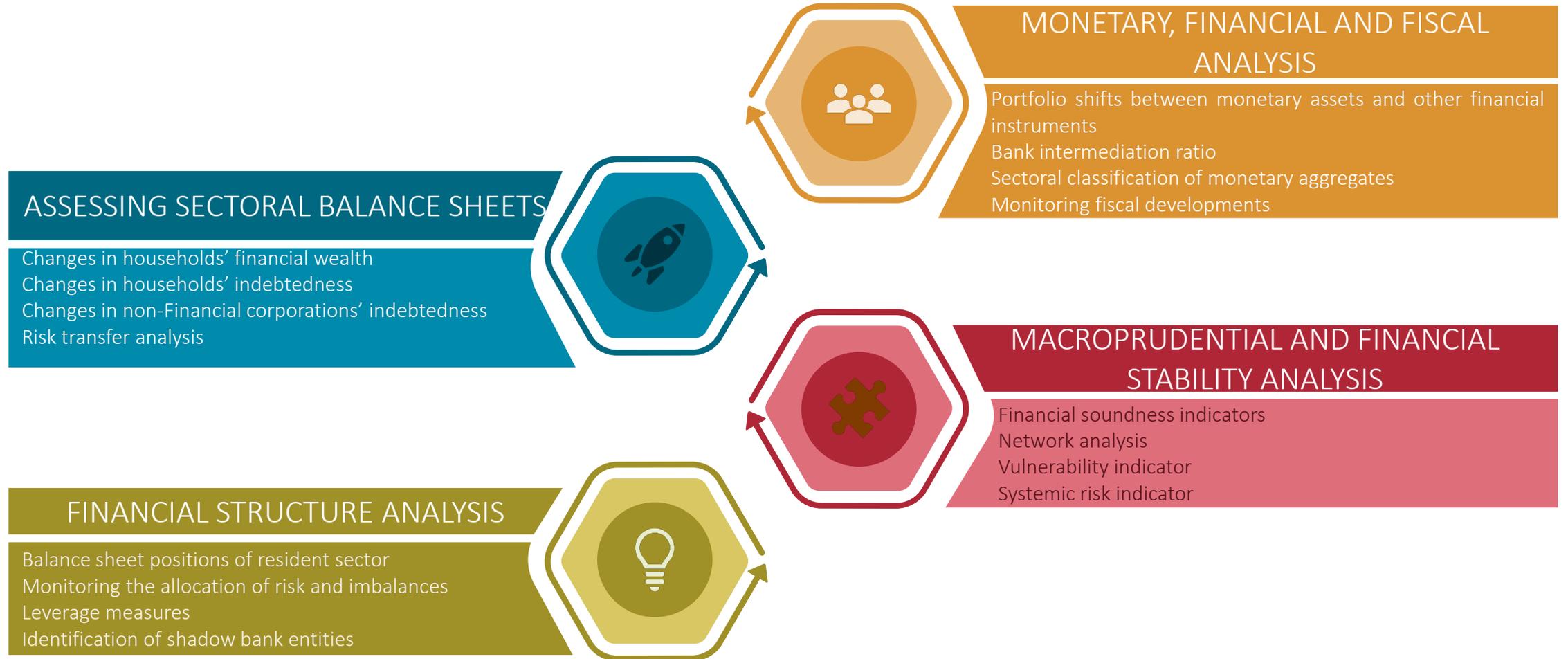


Future Work

Use of Financial Accounts in Turkey

An abstract graphic in the top right corner consisting of a dense, overlapping grid of thin blue lines. The lines are arranged in a way that creates a sense of depth and movement, resembling a wireframe model of a complex object or a stylized architectural structure. The lines are more concentrated in some areas, creating darker shades of blue, while other areas are more sparse, appearing lighter.

Use of Financial Accounts



FA in Reports

01 FINANCIAL ACCOUNTS

Financial balance sheets of sectors indicate that total Financial assets of the Turkish economy were TRY 12,798 billion, while its liabilities reached TRY 14,805 billion in 2018Q3. Net liabilities to the rest of the world increased by TRY 197 billion quarter-on-quarter to TRY 2,007 billion.

Financial flows between the second and third quarter of 2018 reveal that net transactions amounted to TRY 125 billion while a net valuation decrease worth TRY 322 billion was observed due to the change in exchange rates and market prices.

A cross-country comparison in terms of indebtedness ratios of households and non-financial corporations suggests that Turkey maintained its place among countries with low indebtedness levels in the third quarter.

02 FINANCIAL STABILITY REPORT

Against this background, Turkey's household debt to GDP ratio reached 16.6 percent in March 2018 (Chart III.1.16). Accordingly, Turkey ranks below selected EMEs that have a household indebtedness of 29.2 percent on average. Moreover, the spreads of the last two years reveal that Turkey's household indebtedness decreased at a faster rate than the average for selected EMEs.

03 INFLATION REPORT

Total debt of sectors/GDP,%

Total debt of sectors/GDP, Country Comparison

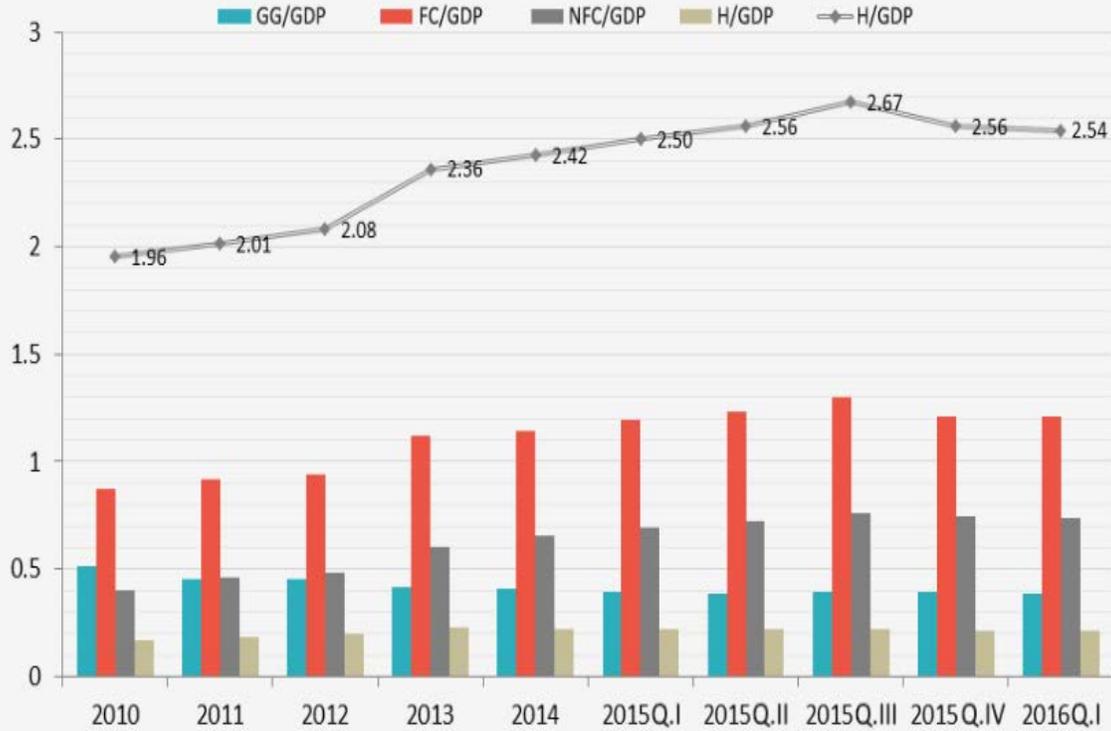
for Inflation Report Presentation.

Cakmak and Dursun (2016)



Chart 1. Total Debts* By Sectors/GDP (2010-2016 Q1)

CBRT Blog



*Debts are composed of currency and deposits, debt securities and loans.

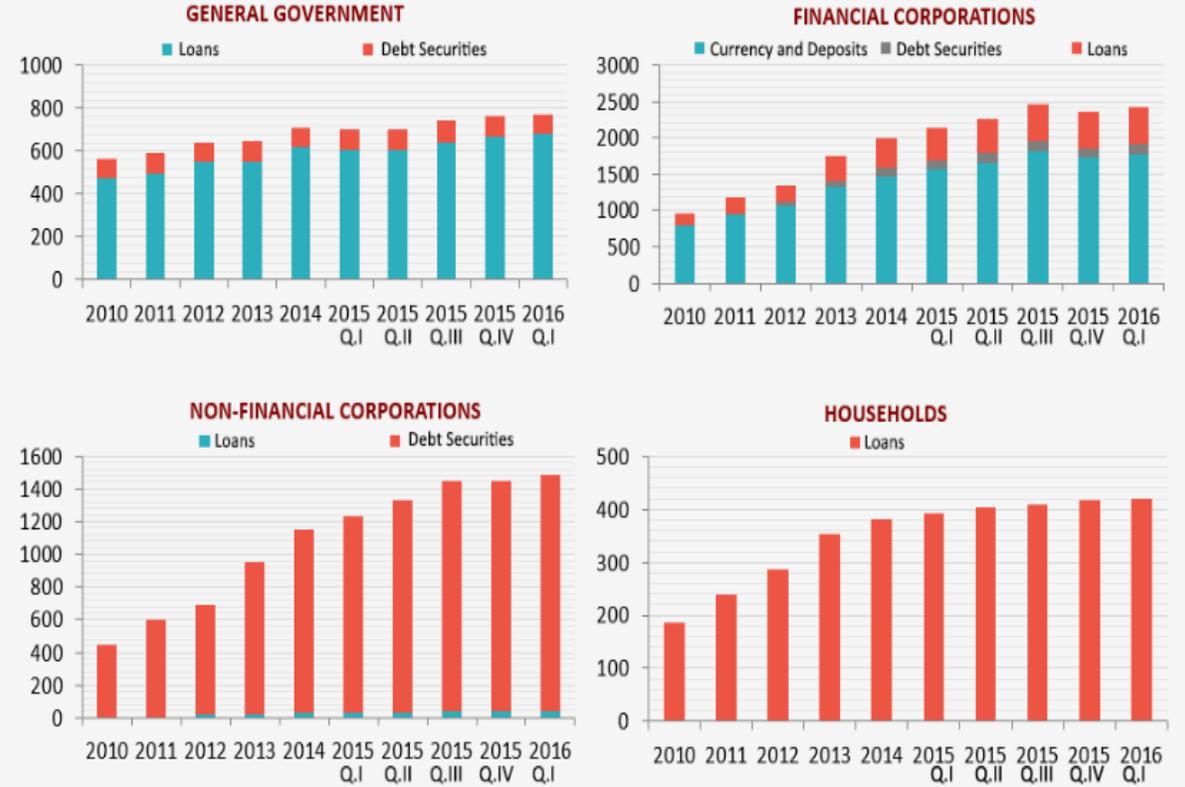
GG: General Government, FC: Financial Corporations, NFC: Non-Financial Corporations, H: Households, GDP: Gross Domestic Product

Source: CBRT



Chart 2. Debt Structure By Sectors (Billion TL)

CBRT Blog



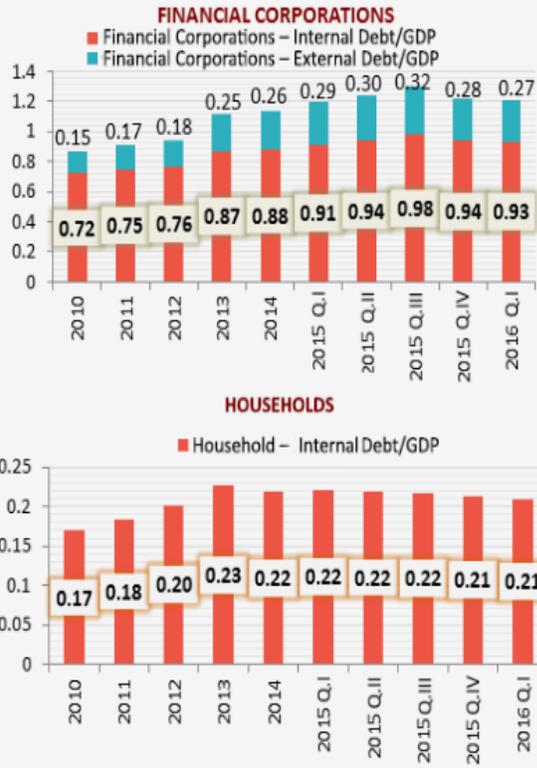
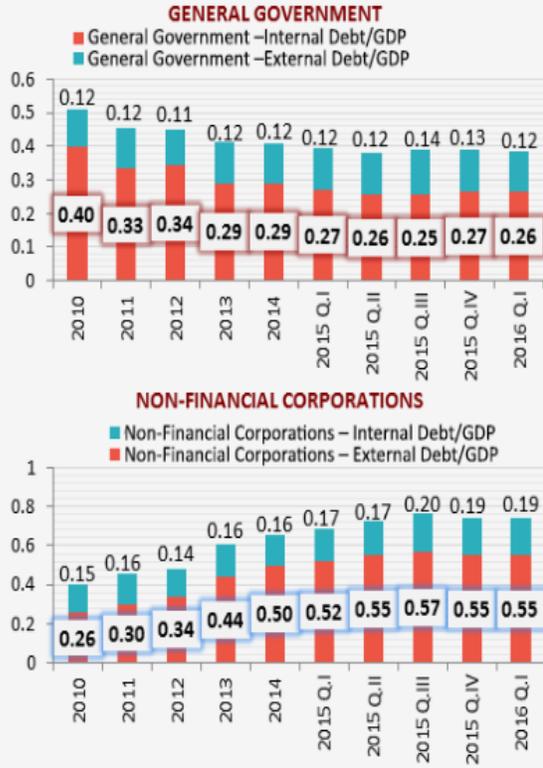
Source: CBRT

Cakmak and Dursun (2016)



Chart 3. Debt Structure By Sectors (Billion TL)

CBRT Blog

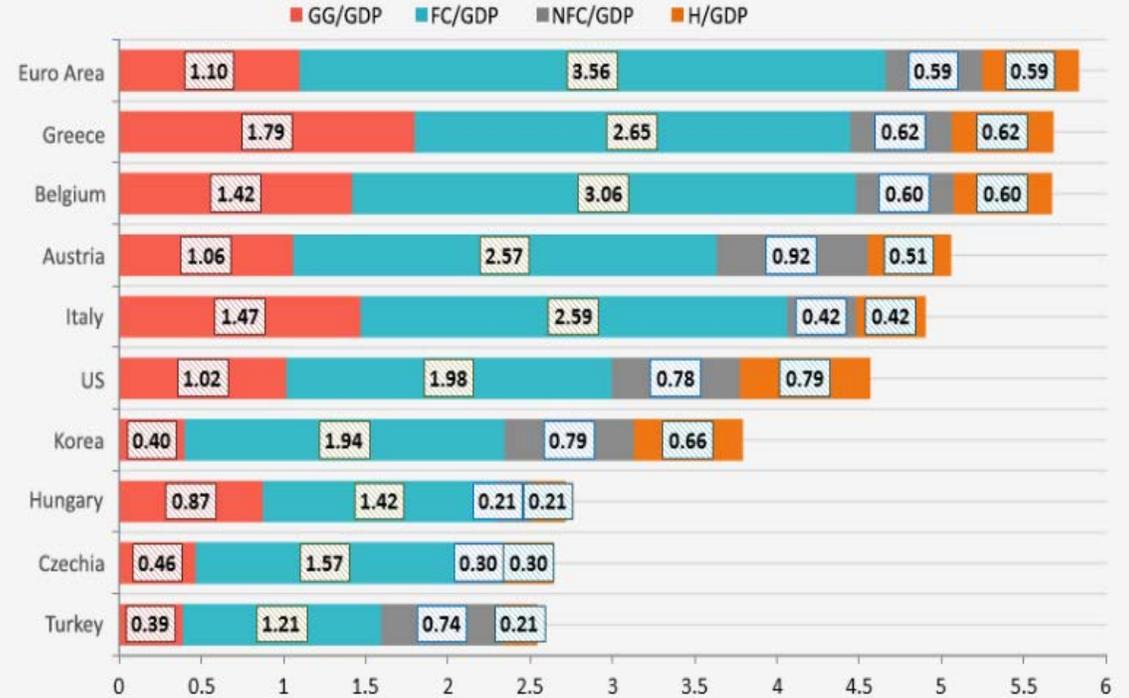


Source: CBRT,
Undersecretariat of
Treasury



Chart 4. Country Comparison – Total Debts By Sectors*/GSYH (2016 Q1)

CBRT Blog



*Debts are composed of currency and deposits, debt securities and loans.

GG: General Government, FC: Financial Corporations, NFC: Non-Financial Corporations,
H: Households, GDP: Gross Domestic Product

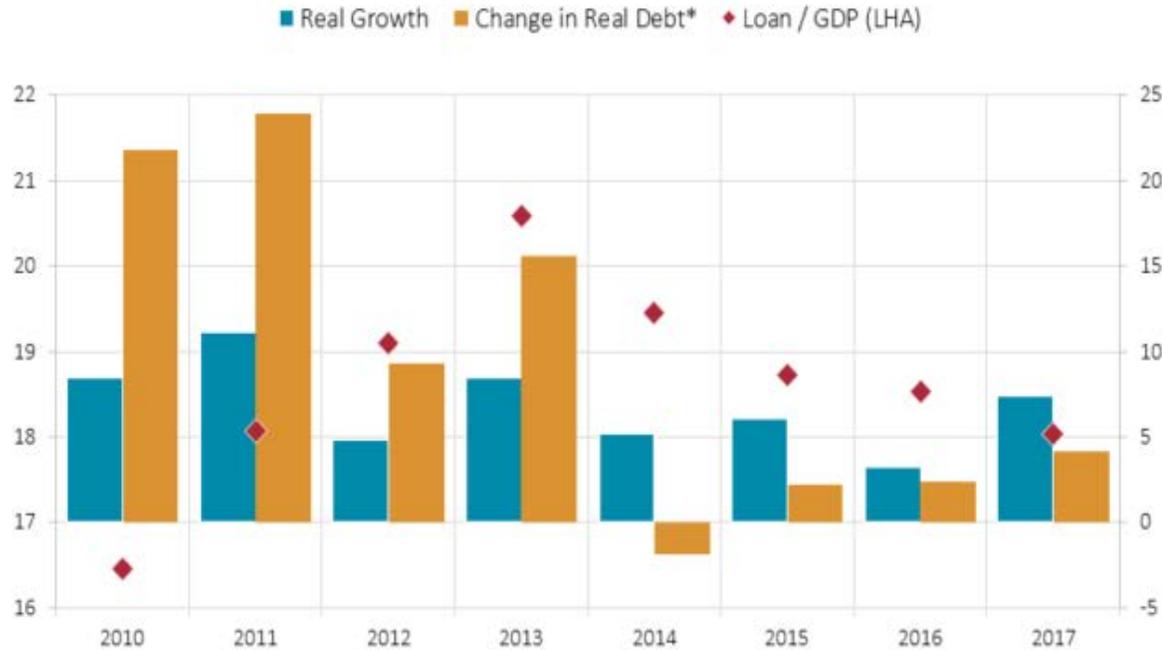
Source: CBRT,
OECD Statistics
Portal



Kilic and Egemen (2018)



Chart 1. Change in Household Indebtedness in Turkey (%)



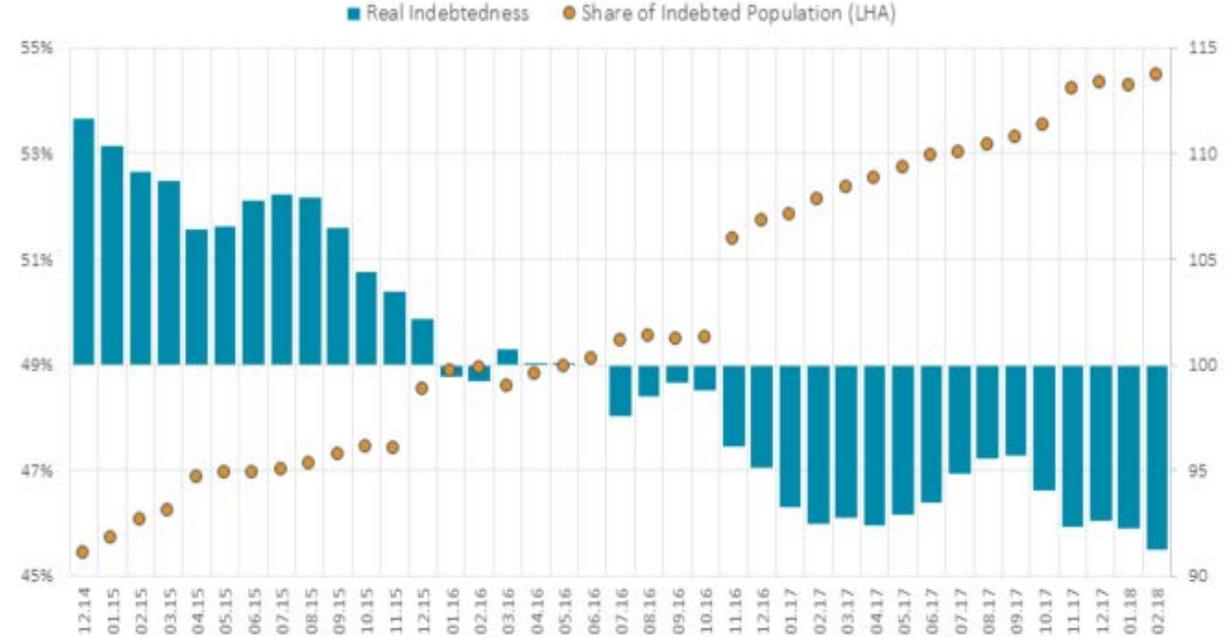
* Household debt stock has been deflated by the CPI.

Source: Financial Accounts, Central Bank of the Republic of Turkey; Turkish Statistical Institute

CBRT Blog



Chart 2. Retail Loan Debt and Share of Indebted Population



Retail loans include housing, vehicle, and general-purpose loans as well as individual credit card balances of banks and financing companies. Real indebtedness shows the inflation-adjusted indebtedness level per borrower calculated by indexing the analysis period average to 100. Share of indebted population is the ratio of the total number of borrowers to the segment of population older than 15 years of age estimated via linear interpolation.

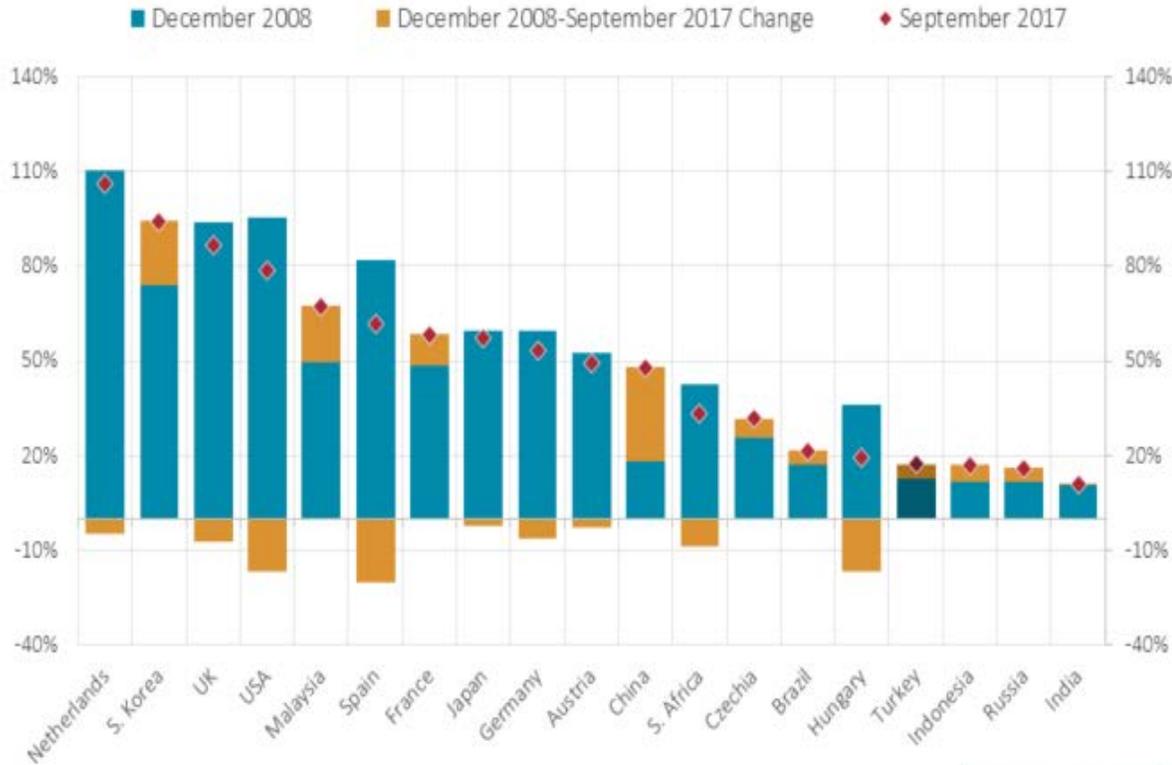
Source: The Banks Association of Turkey Risk Center; Turkish Statistical Institute

CBRT Blog

Kilic and Egemen (2018)



Chart 3. Household Indebtedness as a Percentage of GDP



CBRT Blog



Chart 4. Retail Loans and Current Account Balance (as a percentage of GDP)

CBRT Blog



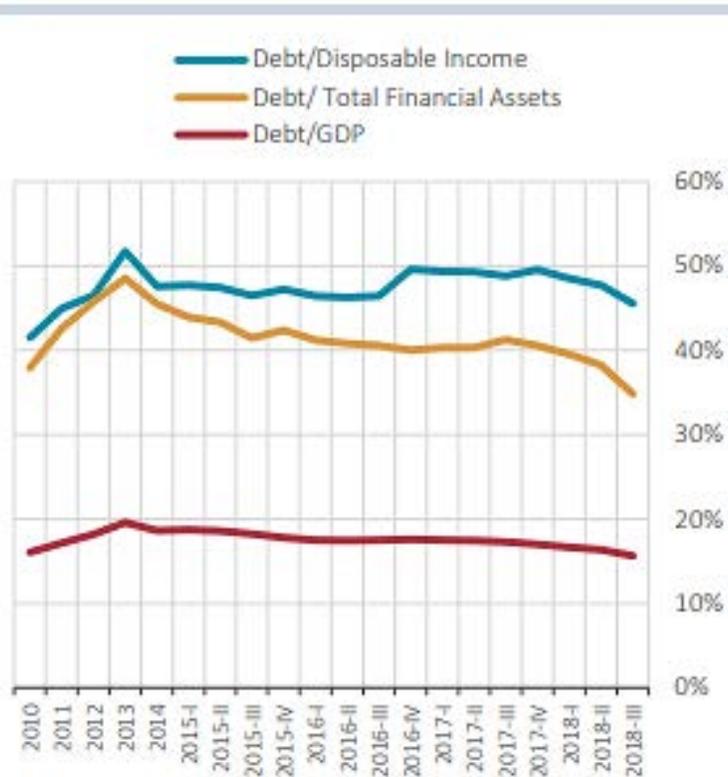
* Calculated via dividing the retail loan balance differences by GDP levels in the same month of the previous year.

Source: Bank for International Settlement

Source: BRSA, CBRT

Assessing Sectoral Balance Sheets

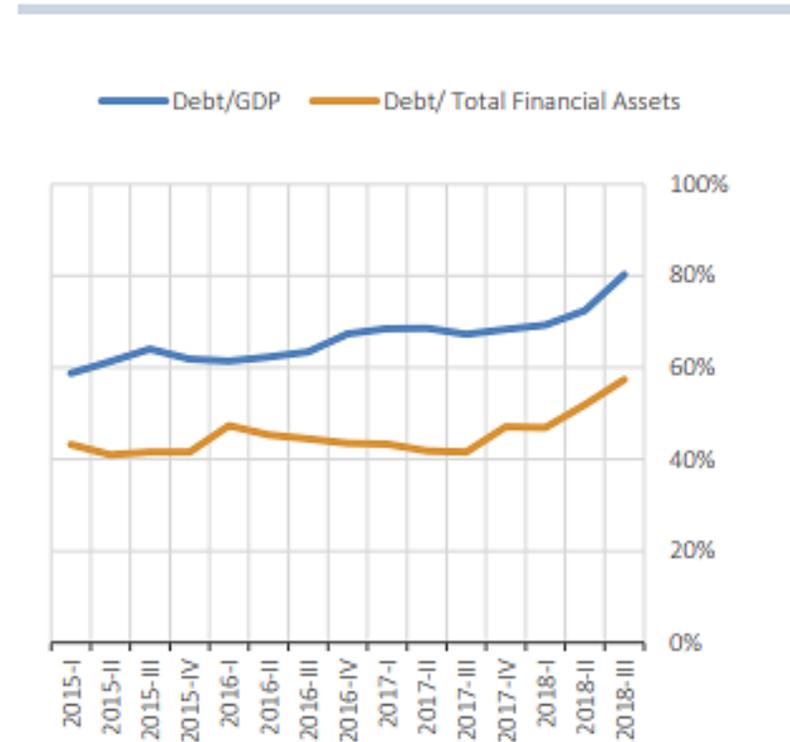
Chart 12: Household Debt* (%)



Source: CBRT, TURKSTAT

*Household debt is composed of loans.

Chart 19: Non-Financial Corporations' Debt * (%)



Source: CBRT, TURKSTAT.

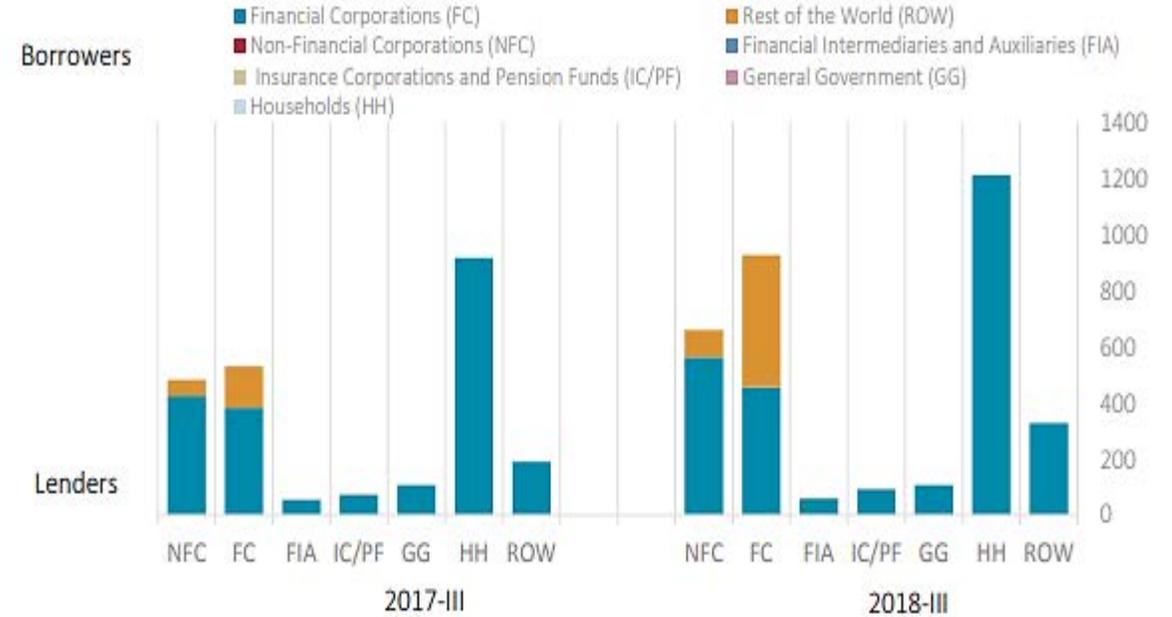
(*) Debts are composed of loans and government debt securities

Macroprudential and Financial Stability Analysis

Chart 5: Loans, From-Whom-to-Whom (2018Q3, TRY Billion)²



Chart 6: Deposits, From-Whom-to-Whom (2018Q3, TRY Billion)²



Financial Balance Sheet Risk Indicators (2018Q3)

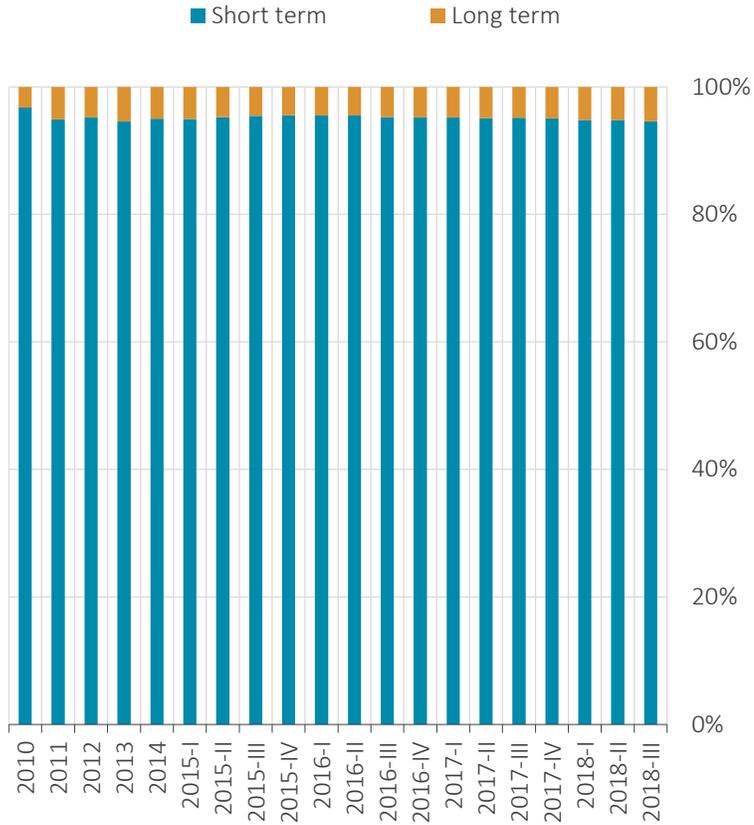
		MFI	OFC	NFC	HH
Solvency Risk	Net Financial Worth (Billion TRY)	212	24	-2,585	1,023
	Liabilities/ GDP	1.32	0.13	2.12	0.17
	Liabilities/ Financial Assets	0.96	0.95	1.52	0.38
Capital Structure Mismatch	Debt/GDP	0.66	0.04	0.8	0.16
	Debt/ Equity	5.03	1.11	1.54	-
External Risk	Net External Financial	-353	-60	-1,175	-
	External Liabilities/ GDP	0.35	0.02	0.45	-
	External Liabilities/ Liabilities	0.26	0.14	0.21	-

Risk Indicators/ Maturity Mismatch

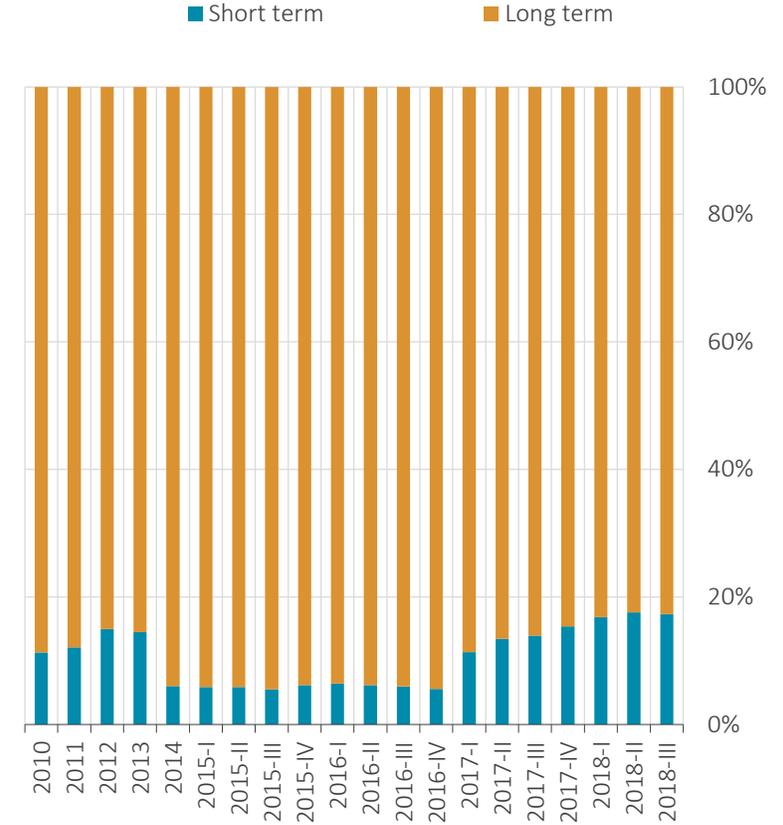
Total loans by maturity(%)



Total deposits by maturity(%)

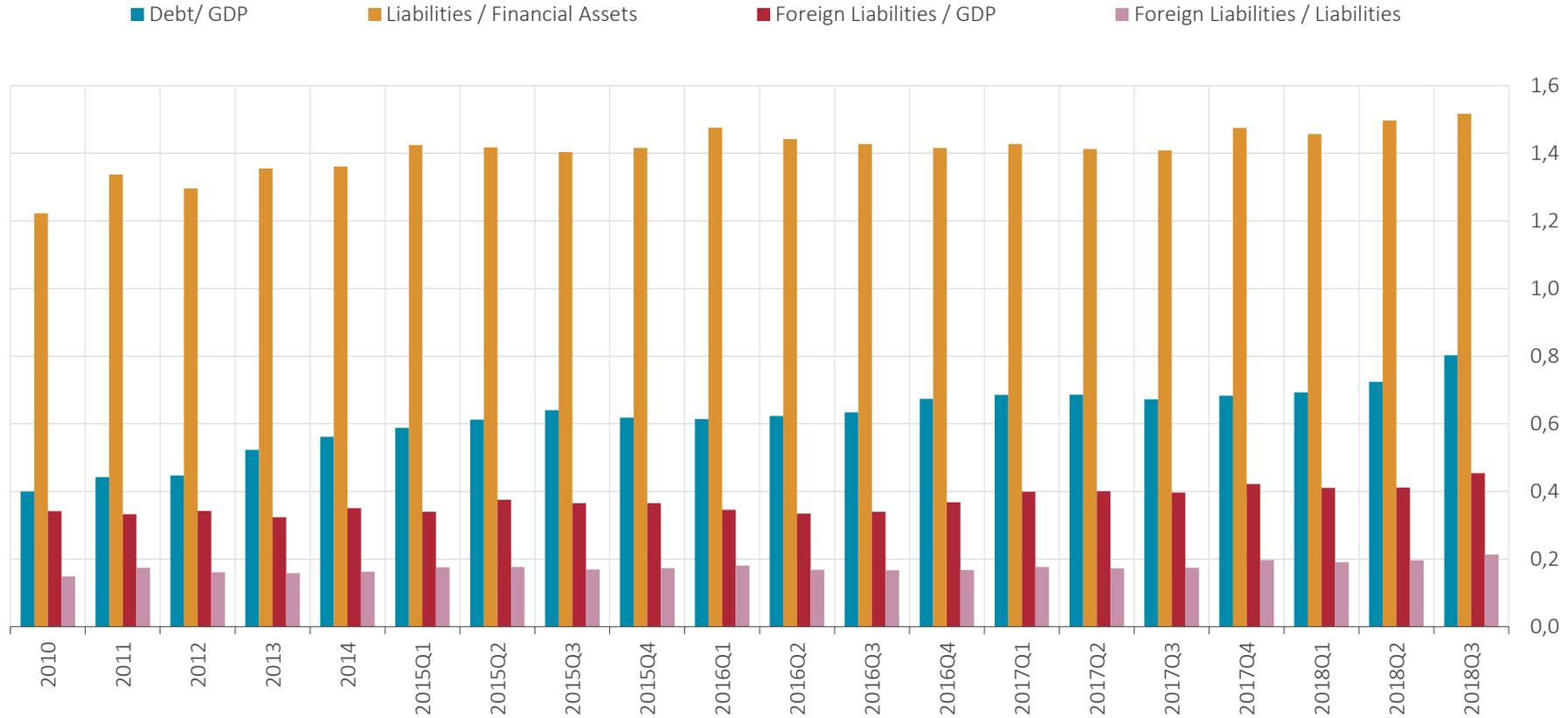


Total debt securities by maturity(%)



Risk Indicators

Non-Financial Corporations

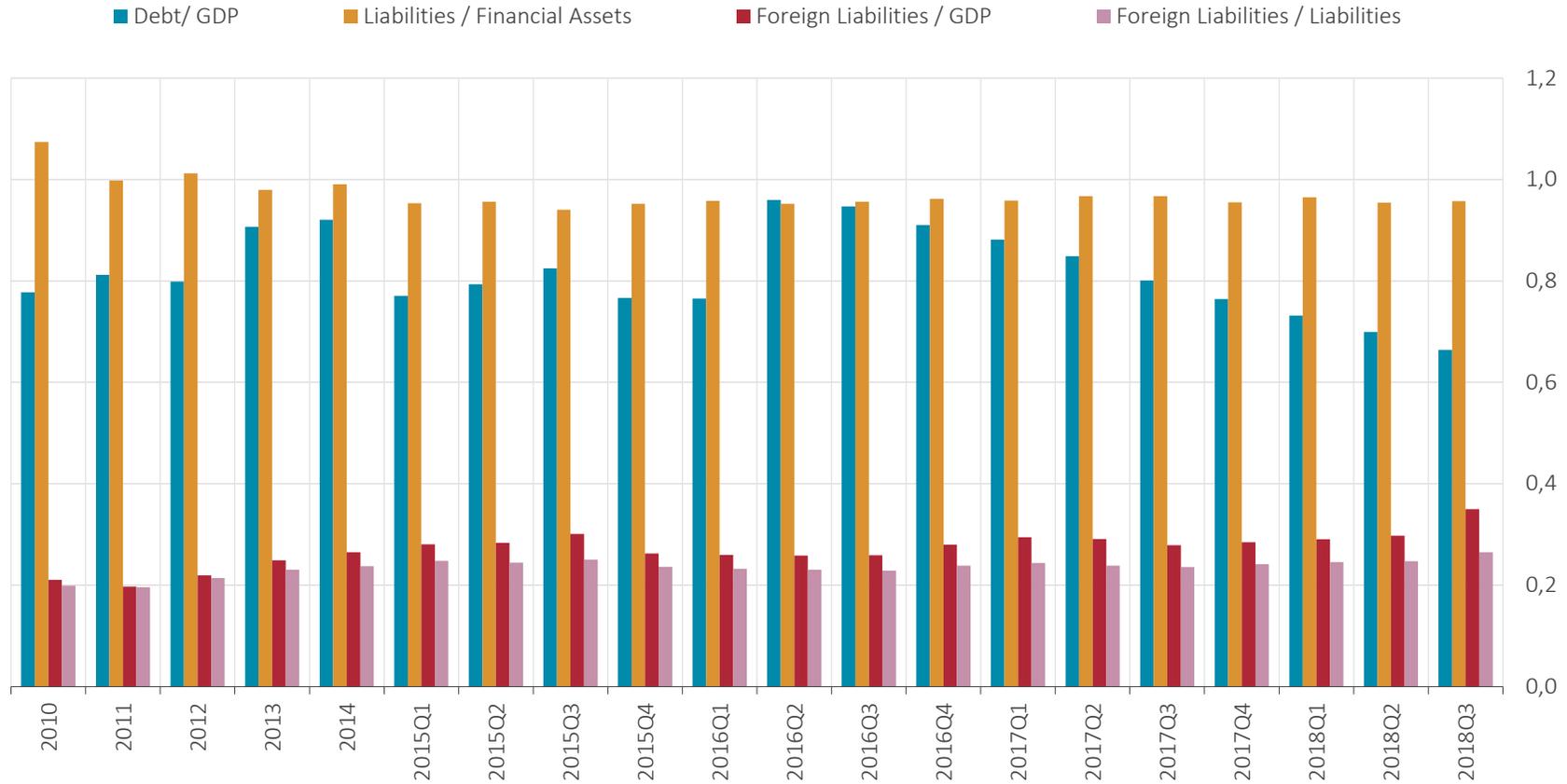


Source:CBRT Financial Accounts

Debt is composed of Currency and Deposits, Debt Securities and Loans.

Risk Indicators

Monetary and Financial Institutions

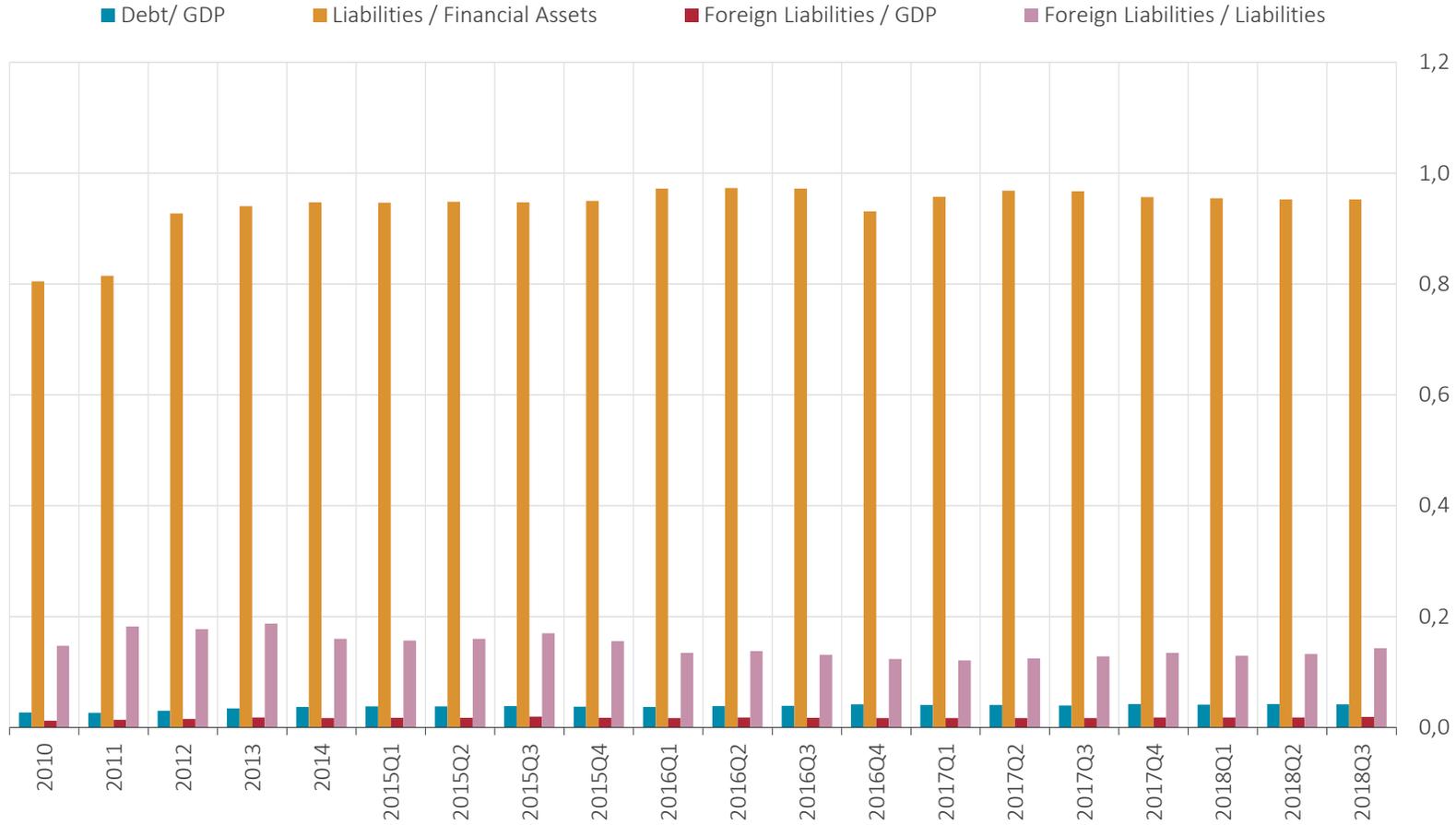


Source:CBRT Financial Accounts

Debt is composed of Currency and Deposits, Debt Securities and Loans.

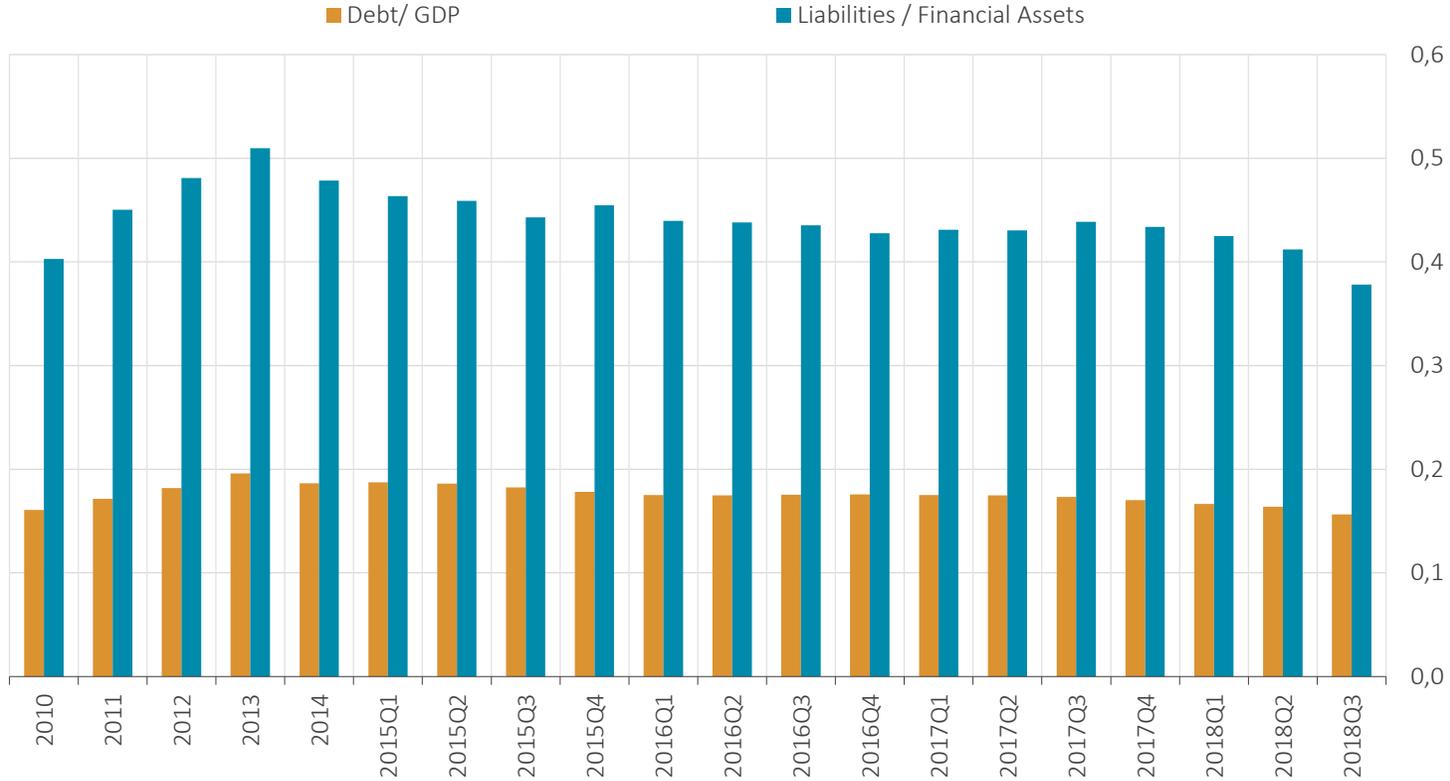
Risk Indicators

Other Financial Corporations

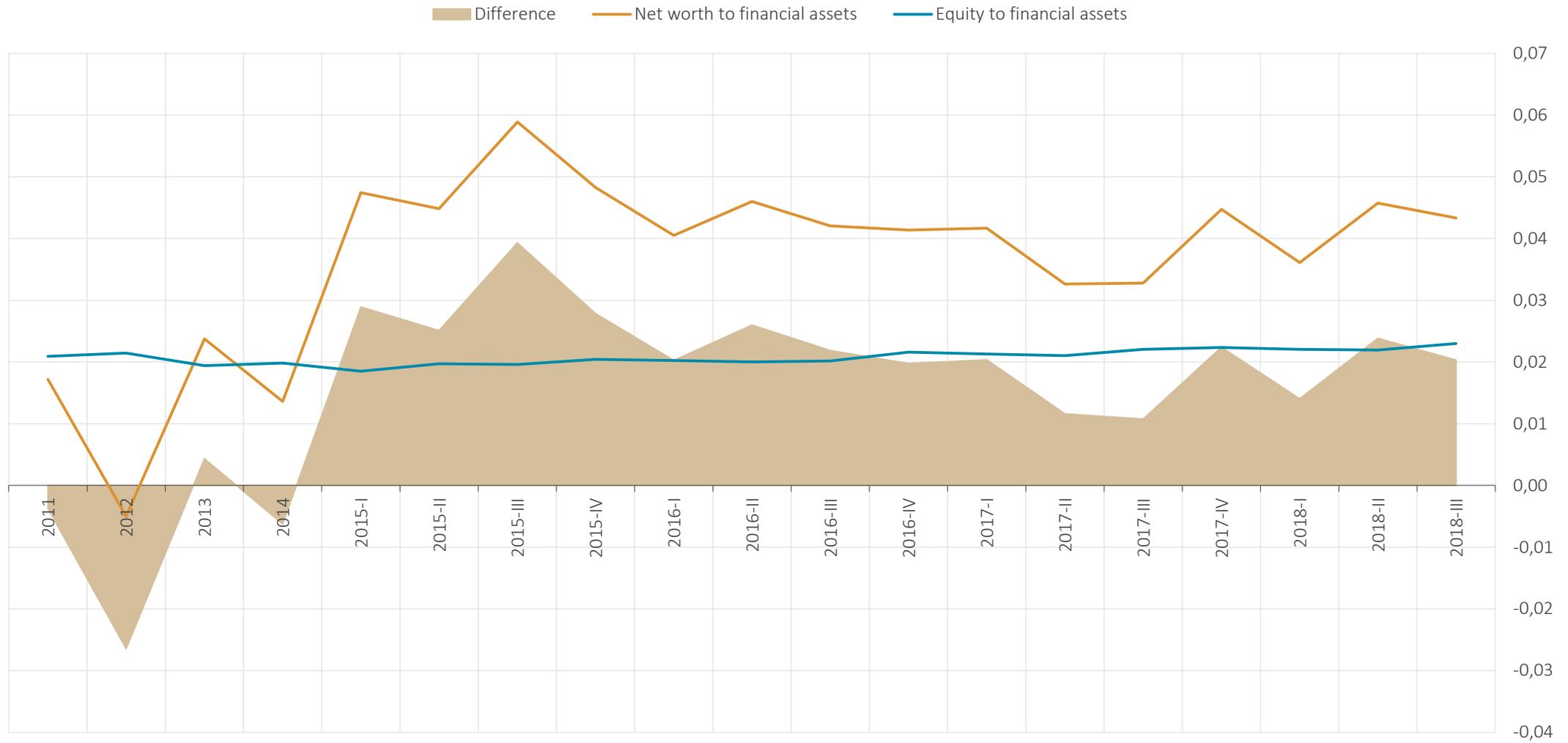


Risk Indicators

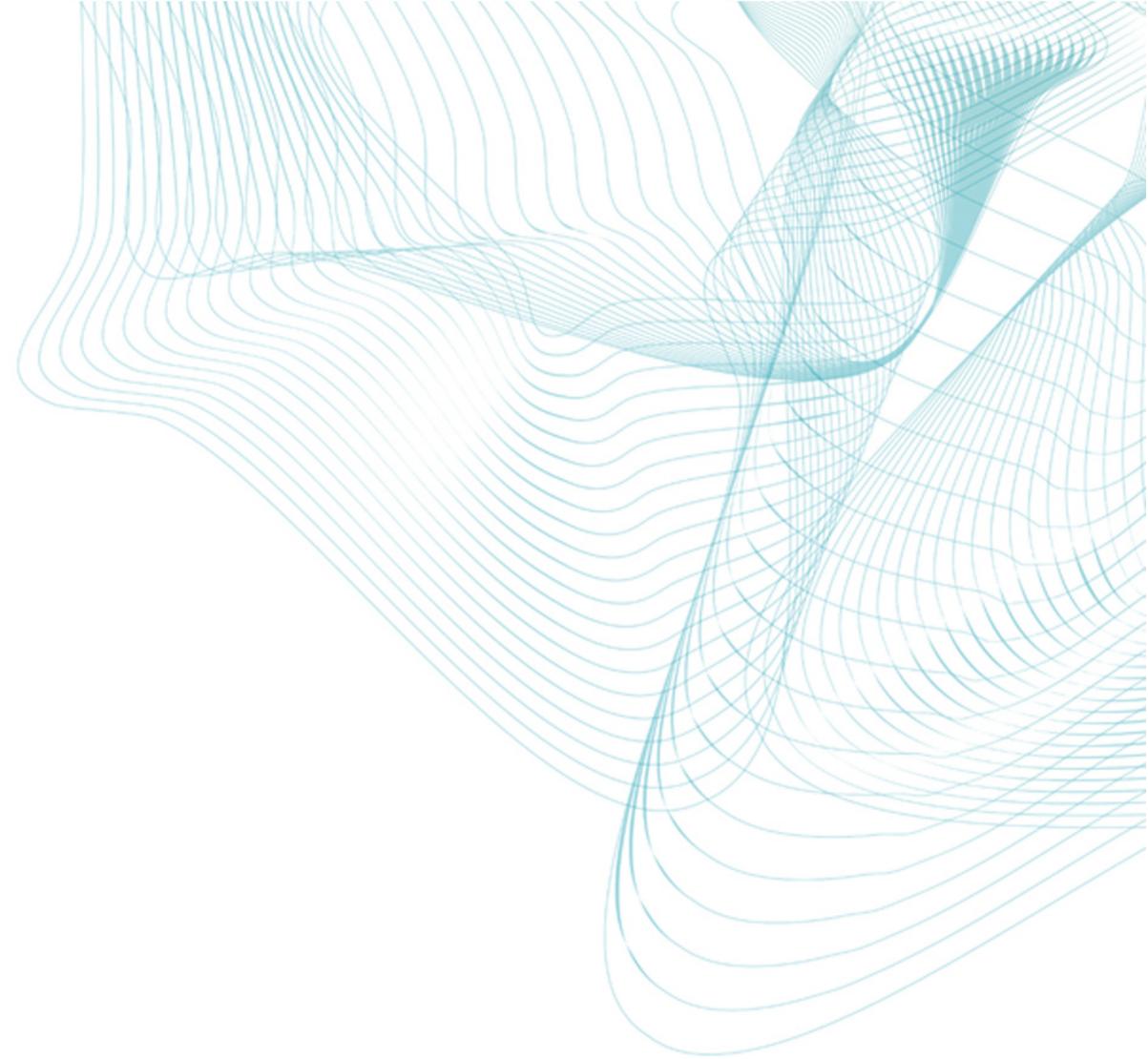
Households



Capital Position of the Financial Corporations (ratio)



Future Work



Future Work

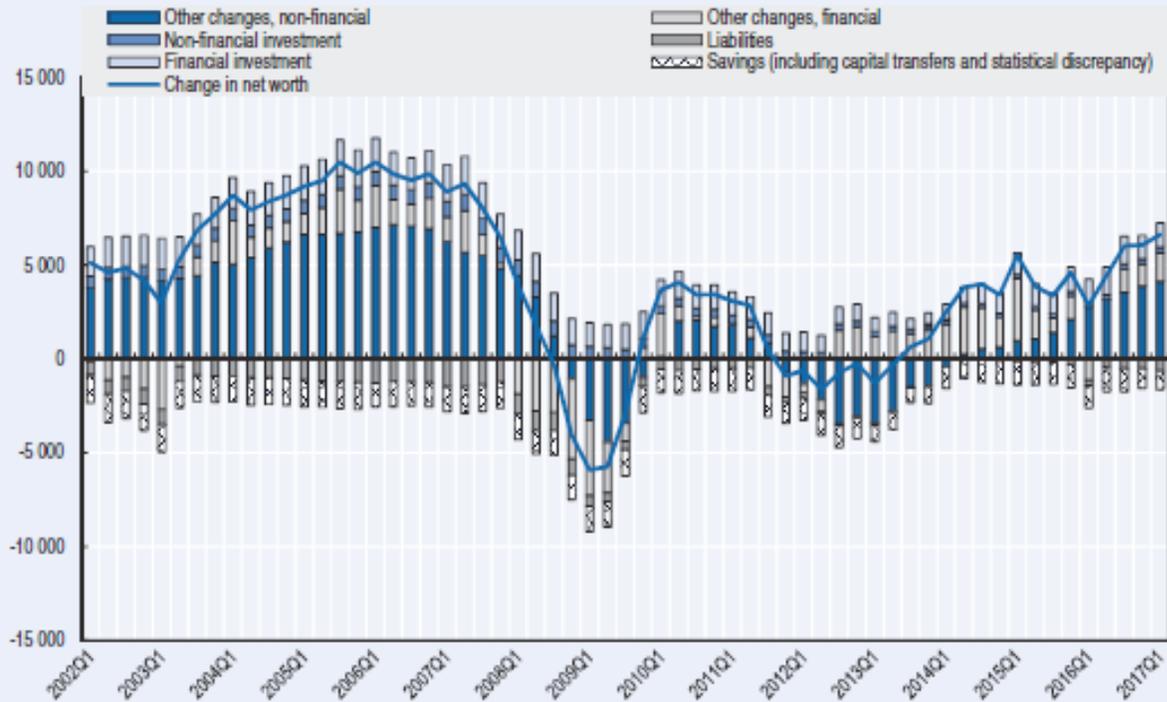
« The more granular the sector breakdown, the more useful the analytical possibilities brought by FWTW information become. »

Understanding Financial Accounts (2017)

need for developed whom to whom matrices

Future Work

Figure 11.2. Accumulation of households' net assets:
changes in household net worth, 2002-17
EUR per capita; changes over four quarters



Source: ECB and Eurostat (2017).

StatLink  <http://dx.doi.org/10.1787/888933589409>

need for coherent Integrated Accounts

Future Work

need for longer series

Annually 2009 - 2014
Quarterly 2015Q1-...



analysis

Future Work

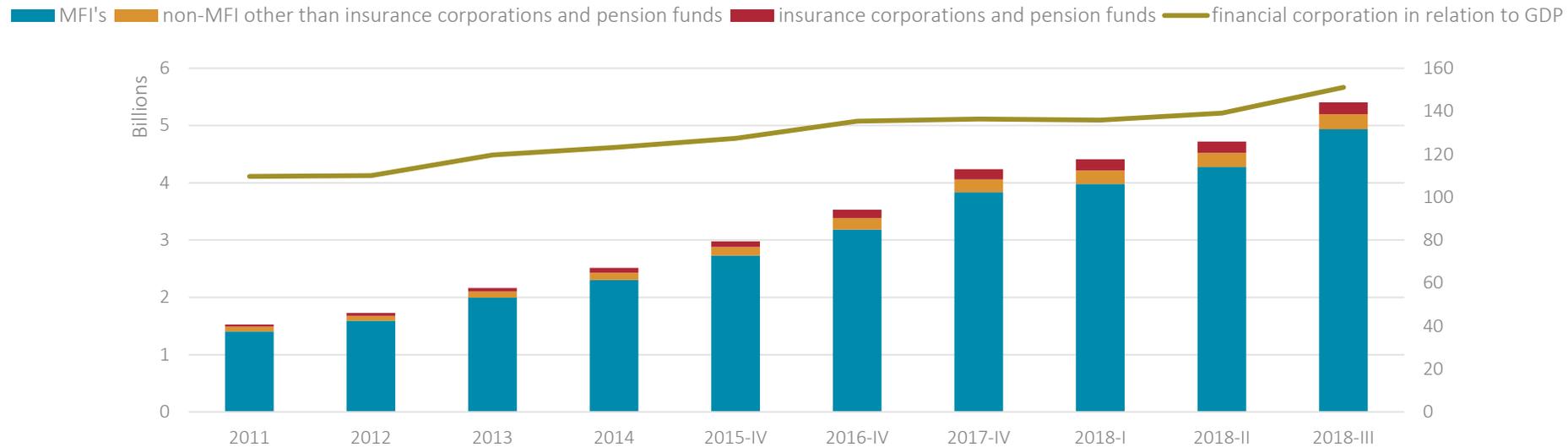


need for improved data awareness



Future Work

Financial assets held by financial corporations (Billion TRY)



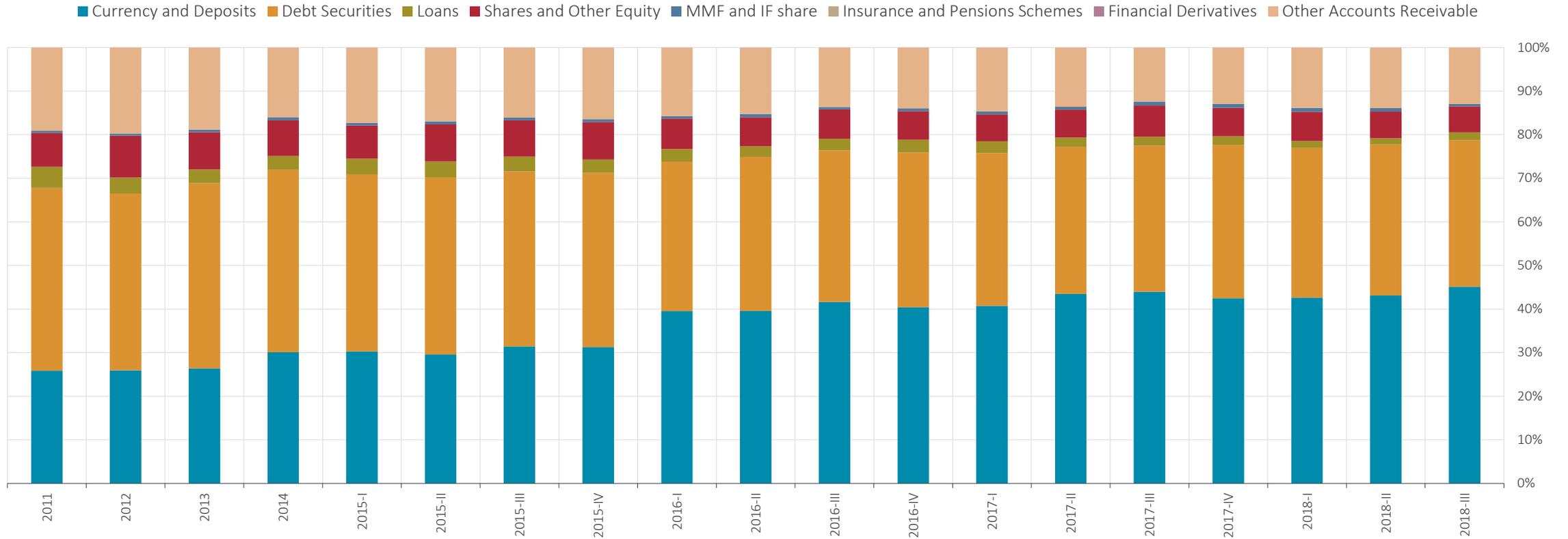
The increased role of MFI and OFI in financial intermediation reflects both cyclical & structural factors

=> interest rates, regulatory changes, demographic trends & transition to ESA 2010.

need for more granular info

Future Work

Financial assets held by ICPFs(%)



need for split of Pension Funds in Defined Benefit-Defined Contribution schemes



Future Work



need further work for engouraged
breakdowns

NFCs and FCs according to
ownership/control

loans and debt securities according
to remaining maturity

financial derivatives as options and forwards

Please contact for further information

Thanks

Cansu.Gokce@tcmb.gov.tr

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Use of financial accounts in the context of the ECB needs for monetary policy and financial stability analysis¹

Celestino Giron,
European Central Bank

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



EUROPEAN CENTRAL BANK

EUROSYSTEM

Celestino Girón*)
European Central Bank**)

Use of financial accounts in the context of the ECB needs for monetary policy and financial stability analysis

Session III

***Workshop on the Use of Financial Accounts
Istanbul, 18-20 March 2019***

*) input from annual ECB financial accounts training seminar acknowledged

***) Views should not be attributed to the ECB

1 Financial accounts uses: financial accounts and the ECB functions

2 Analytical examples

2.1 Sector analysis: imbalances and leverage rotation

2.2 Who-to-whom and interconnectedness

3 Enhancing financial accounts uses: ESCB medium-term strategy

4 ECB communication

1 Financial accounts uses: financial accounts and the ECB functions

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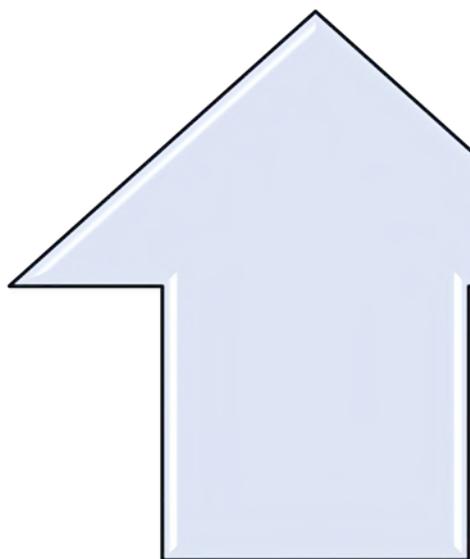
4 ECB communication

1. Financial accounts uses: financial accounts and the ECB functions

Macroeconomic variables in the system of accounts

	Euro area accounts		Uses							Resources						
	Transactions		GS	S1	S11	S12	S13	S14_5	S2	GS	S1	S11	S12	S13	S14_5	S2
			Goods and Services	Total Economy	Non-financial corporations	Financial corporations	General Government	Households and NPISH	Rest of the world	Goods and Services	Total Economy	Non-financial corporations	Financial corporations	General Government	Households and NPISH	Rest of the world
	GDP															
Non financial accounts	B1G	Value Added/GDP														
	D1	Compensation of Employees														
	D2FD31	Taxes less subsidies on products														
	D29-D39	Other Taxes less subsidies on production														
	D4	Property Income														
	D5	Taxes on income and wealth														
	D61	Social security contr.														
	D62	Social security benefits														
	D7	Current transfers														
	D8	Equity grants to policy holders														
	D9	Capital Transfers														
	K1	Consumption of fixed capital														
	K2	Acq.-disp. of non-prod non-fin assets														
	P3	Final consumption														
	P5	Gross Capital Formation														
P6	Exports															
P7	Imports															
B9	Net lending															
B9F	Net lending															
Financial Accounts	F1	SDR and Monetary Gold														
	F2-4	Currency, Deposits, Loans														
	F3	Securities oth. Than shares														
	F5	Shares														
	F6	Insurance technical reserves														
	F7	Oth. accs receivable/payable														

Pros and cons of financial accounts as an analytical tool



Comprehensiveness to allow for various kind of analysis

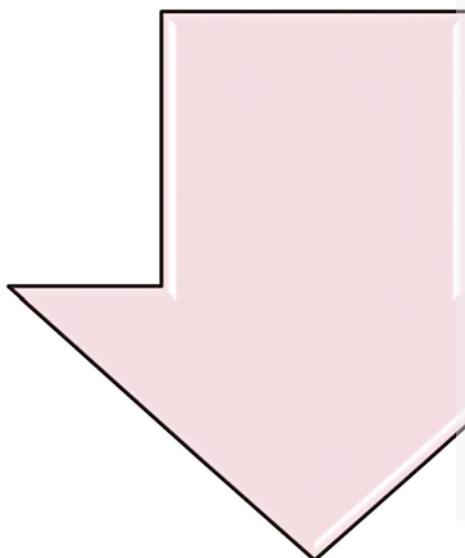
All economic flows: stocks, transactions, other flows... clearly distinguished

Who-to-whom information for key instruments

Together and **integrated with non-financial accounts**

Comparability across countries

Consistent messages (*but more consistency required*)



Very rich and **complex data** : challenge to synthesize relevant messages & have consistent analysis

Availability of **alternative tools** for analysis (e.g. banking statistics, securities statistics, etc) that might provide messages inconsistent with FAs

Timeliness might not be sufficient

Reliability: some data subject to high revisions

Time series length insufficient

Some examples of analytical areas of interest for the ECB ...

Monetary policy and financial analysis

- Transmission mechanism
- Financial conditions of NFCs
- Households portfolio choices
- Flow of funds
- Monitoring (financial) macroeconomic risks
- ...

Financial stability and macroprudential analysis

- Leverage
- Exposures, linkages, propagation
- Shadow banking
- ...

Integrated non-financial and financial analysis (*cross-checking*)

- Housing investment and mortgage financing
- NFC internal and external financing
- Sector interplays
- ...

International comparisons

- Sectoral comparison across large economic areas
- Macroeconomic risks by EU countries
- Country contributions to euro area financial developments
- ...

EAA and the ECB's monetary policy strategy

Primary objective: Price stability



Governing Council

takes monetary policy decisions based on an overall assessment of the risks to price stability

Economic Analysis

Monetary Analysis

cross-checking

Analysis of economic dynamics and shocks

Analysis of monetary trends

EAA

Full set of information

1 Financial accounts uses: financial accounts and the ECB functions

2 Analytical examples

2.1 Sector analysis: imbalances and leverage rotation

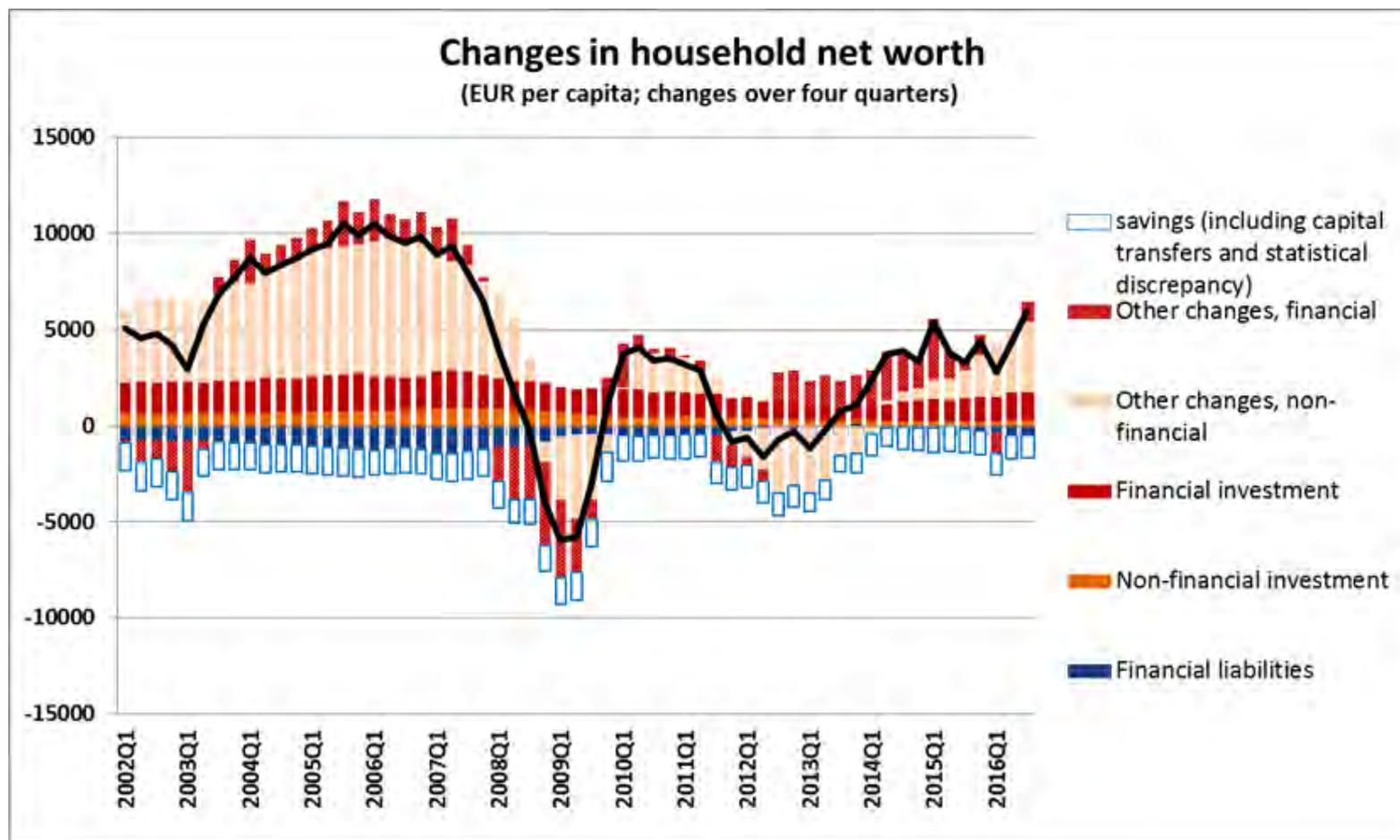
2.2 Who-to-whom and interconnectedness

3 Enhancing financial accounts uses: ESCB medium-term strategy

4 ECB communication

2.1 Sector analysis: imbalances and leverage rotation

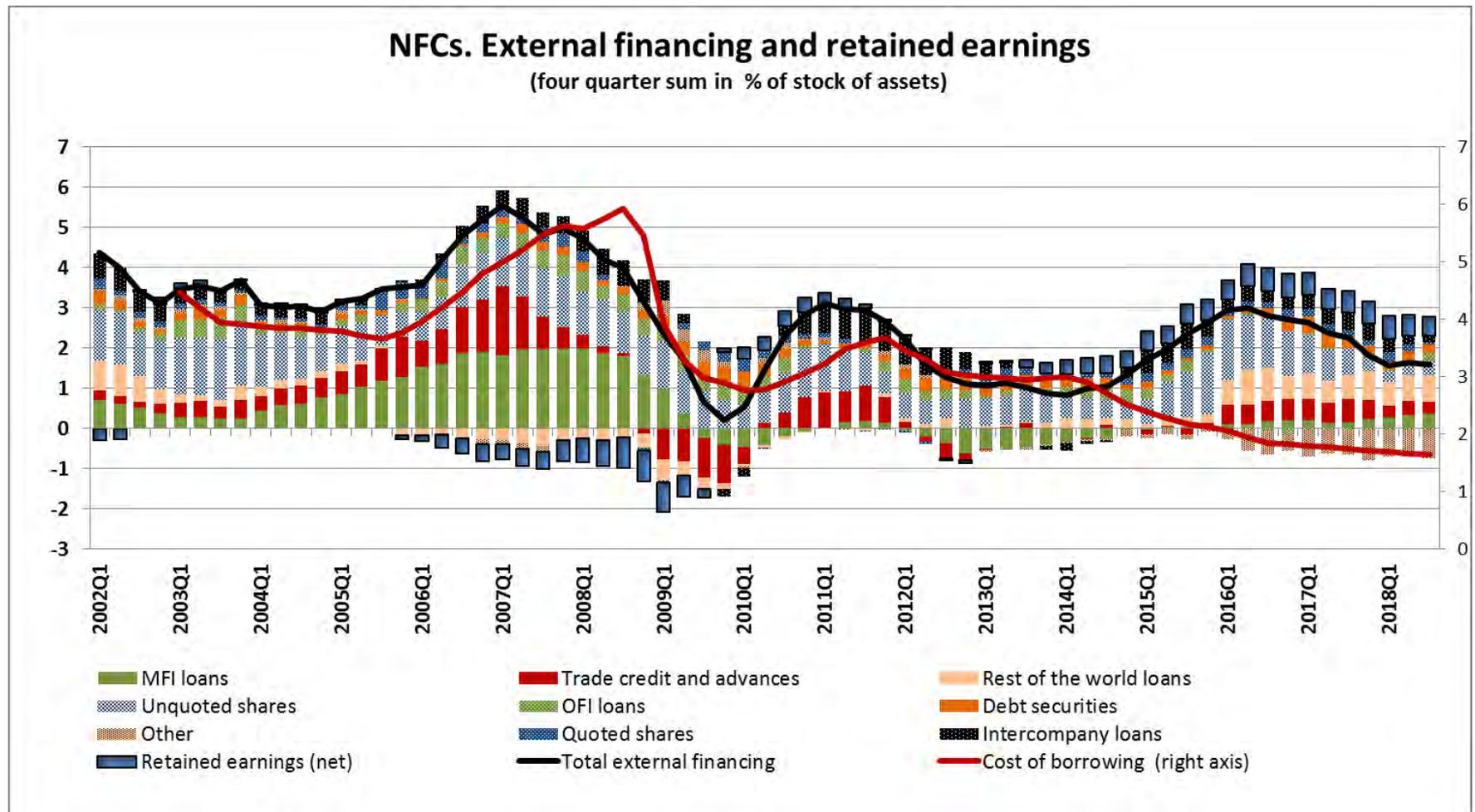
Comprehensive and integrated view of financial and non-financial developments of the private (non-financial) sector ...



Source: EAA; last observation Q1 2017

2.1 Sector analysis: imbalances and leverage rotation

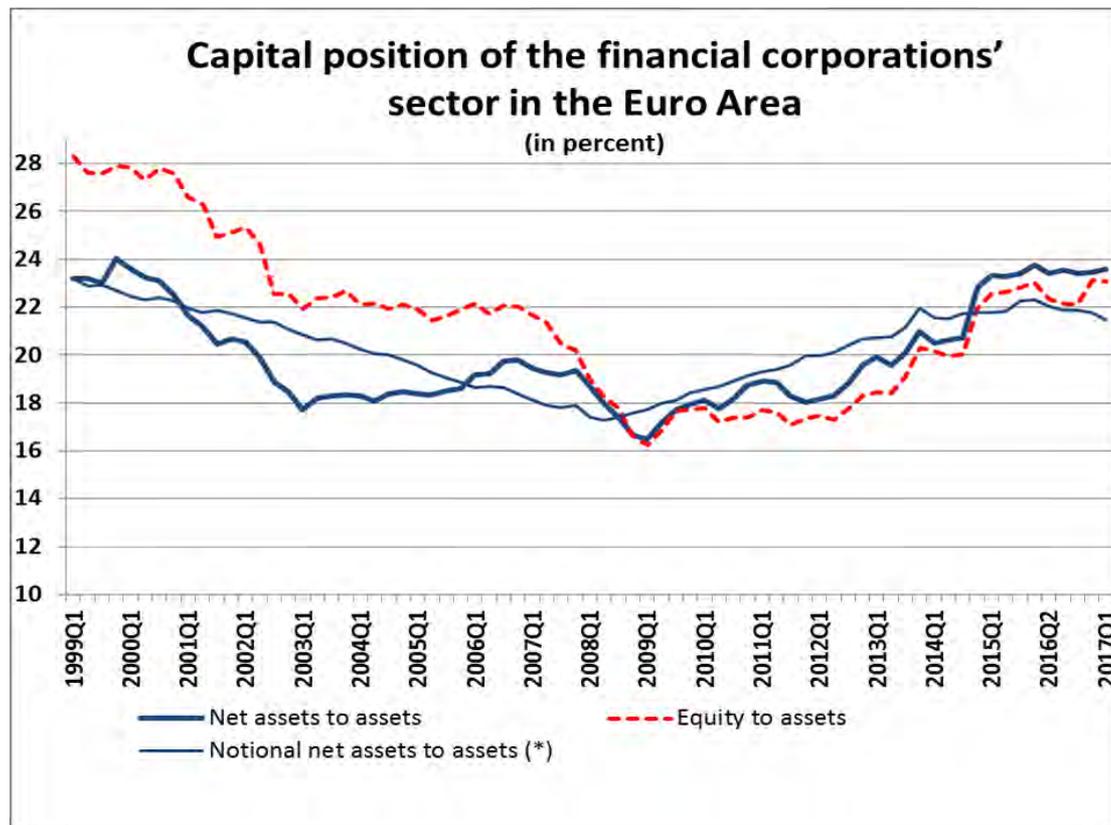
Comprehensive and integrated view of financial and non-financial developments of the private (non-financial) sector ...



Source: EAA; last observation Q3 2018

2.1 Sector analysis: imbalances and leverage rotation

... and also monitor the soundness of the financial sector from a macroeconomic perspective ...



Source: EAA; last observation Q1 2017

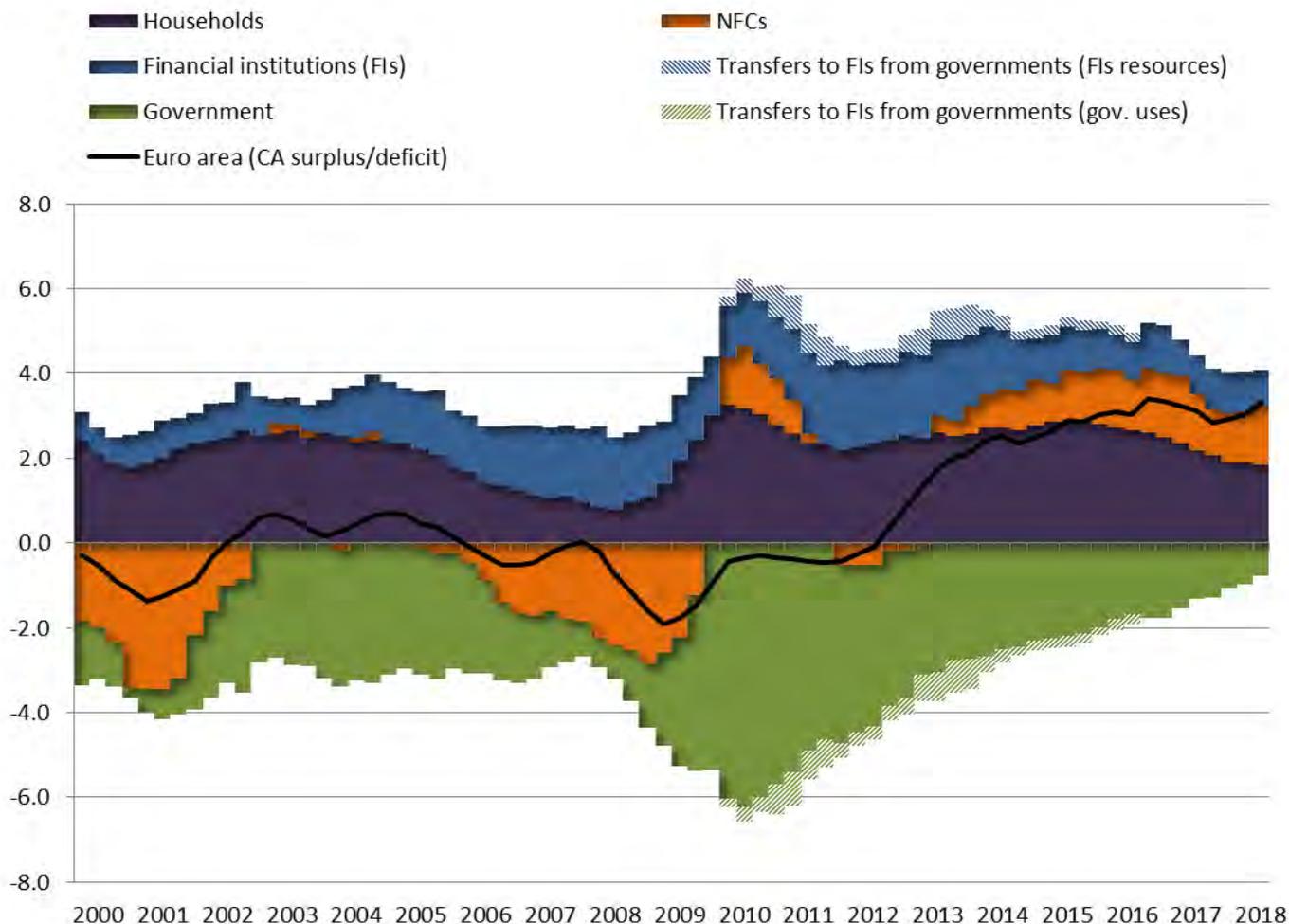
Notes: 1. "Equity" comprises shares and other equity.

2. "Net assets" are the difference between assets and liabilities other than equity, all at market value.

3. The "notional net assets to assets" ratio is based on net assets and assets excl. changes in prices of assets and liabilities. Interbank deposits and Eurosystem financing are netted out from assets A and liabilities.

2.1 Sector analysis: imbalances and leverage rotation

... and analyse external imbalances ... and sector imbalances...



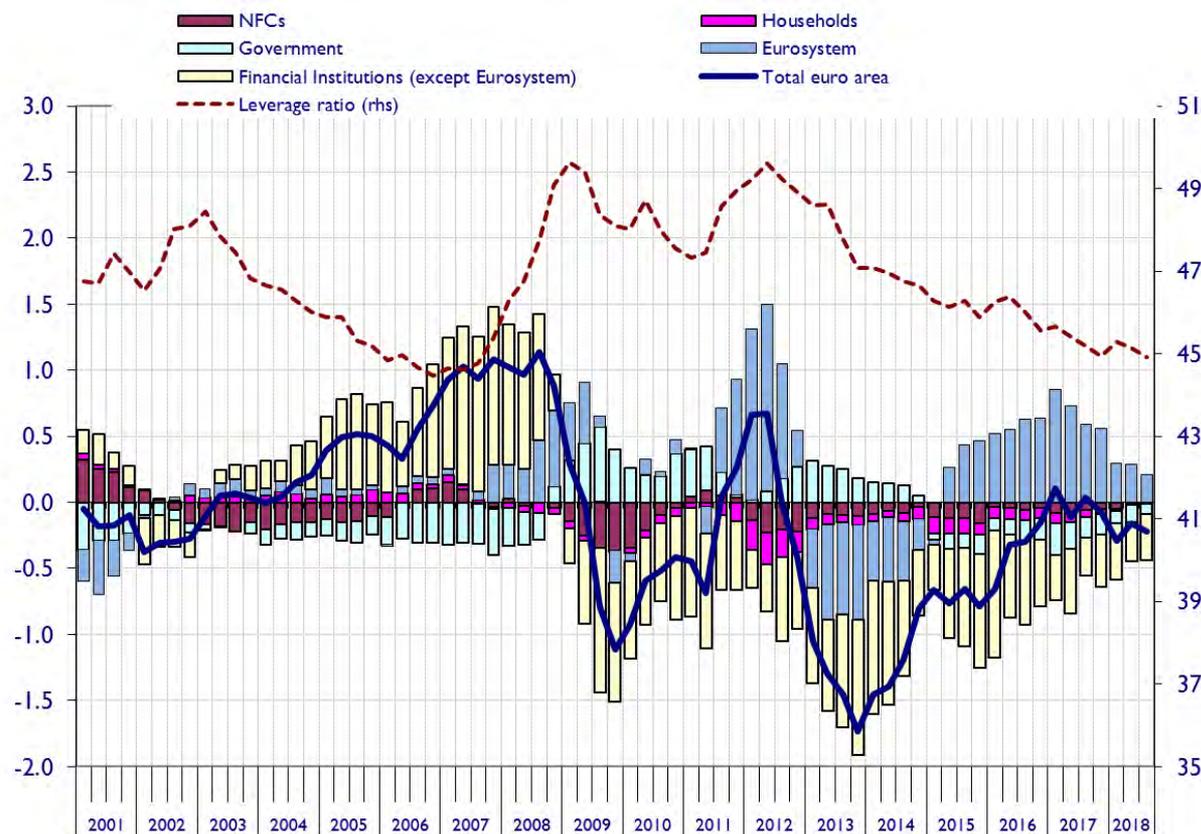
Source: EAA; last observation Q3 2018

Units: four-quarter sums, as percentage of GDP

2.1 Sector analysis: imbalances and leverage rotation

... or leverage developments...

Year-on year change in contributions to leverage in the euro area



Source: EAA ; last observation Q3 2018

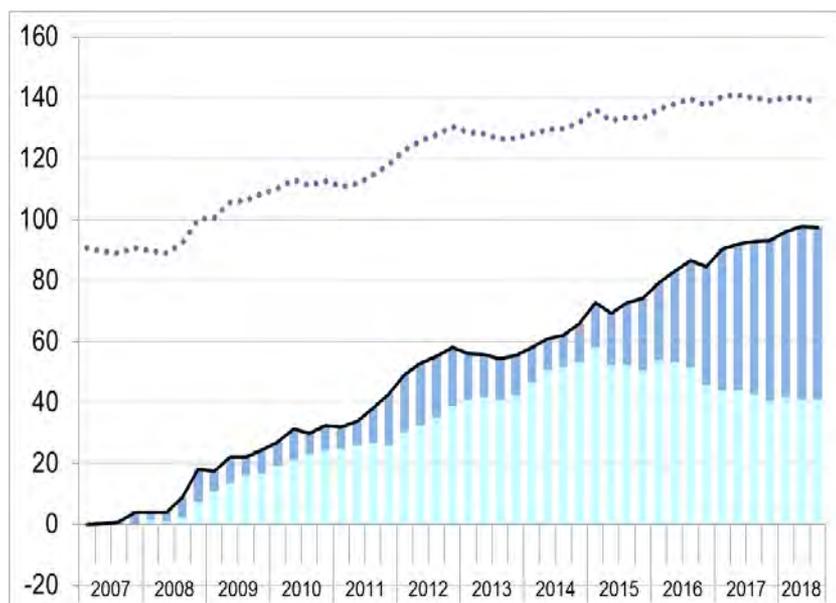
Units: Contributions to debt-to-asset ratio; year-on-year changes due to transactions

2.1 Sector analysis: imbalances and leverage rotation

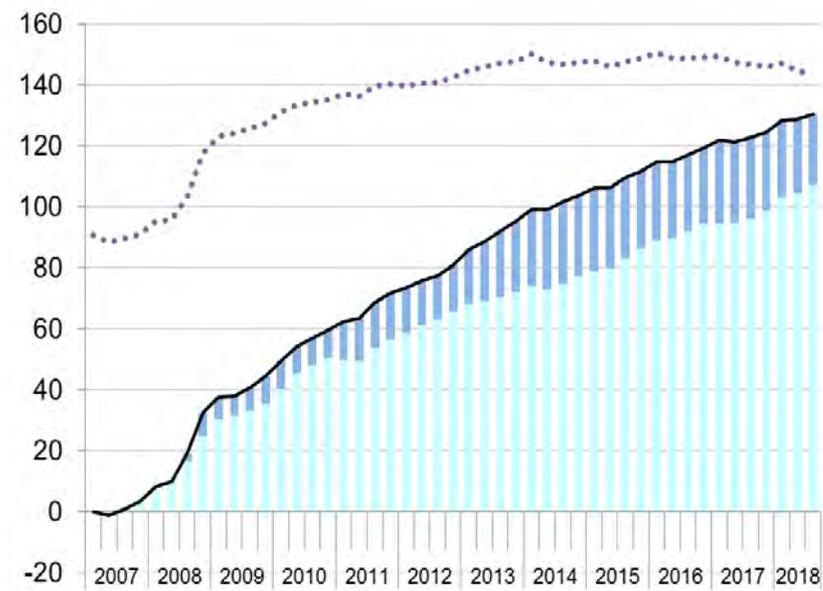
... and compare policy responses

Accumulated change in public liabilities (consolidated)

Euro area



US



Government

Central Bank

Total cumulated change

Total level in %GDP

Source: EAA & US FoF ; last observation Q3 2018

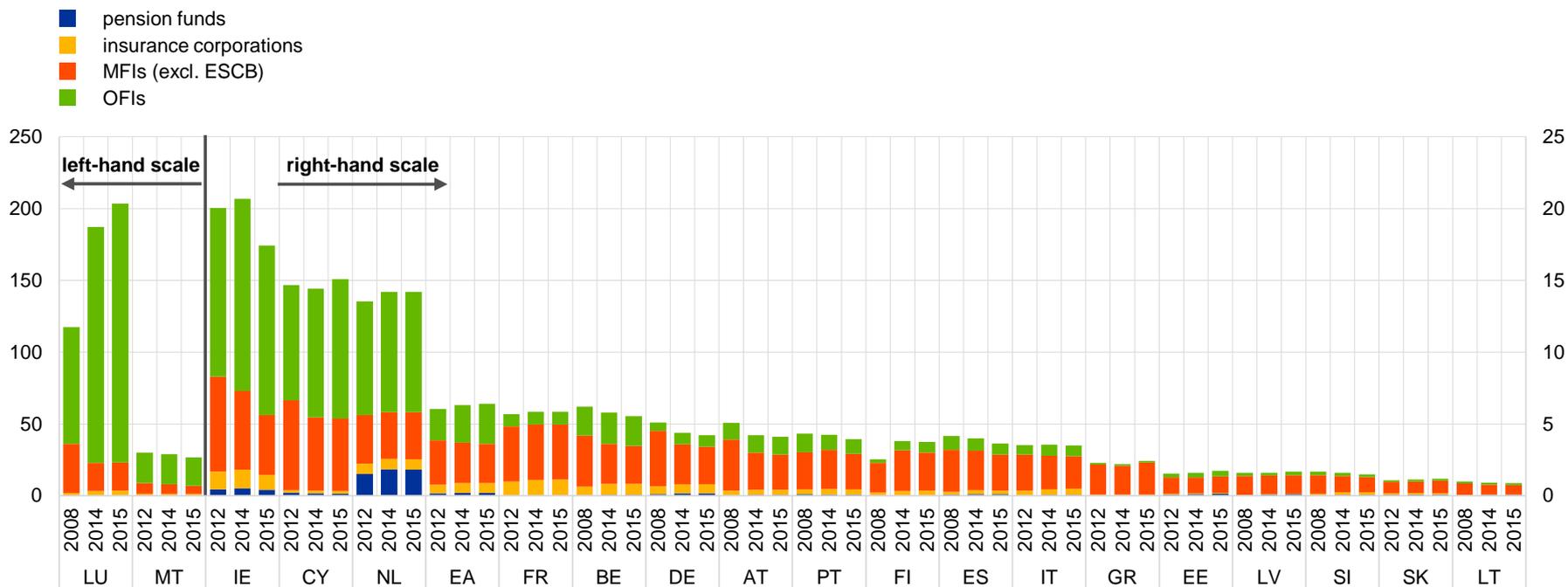
Units: Accumulated change in liabilities since 2007, contributions

Note: holdings of government liabilities by the central bank and of the central bank by government are consolidated out

2.1 Sector analysis: imbalances and leverage rotation

Useful for country analysis: cross-country size differences of the financial system

Size of the euro area financial sector, 2008, 2014 and 2015 (ratio of assets to GDP)



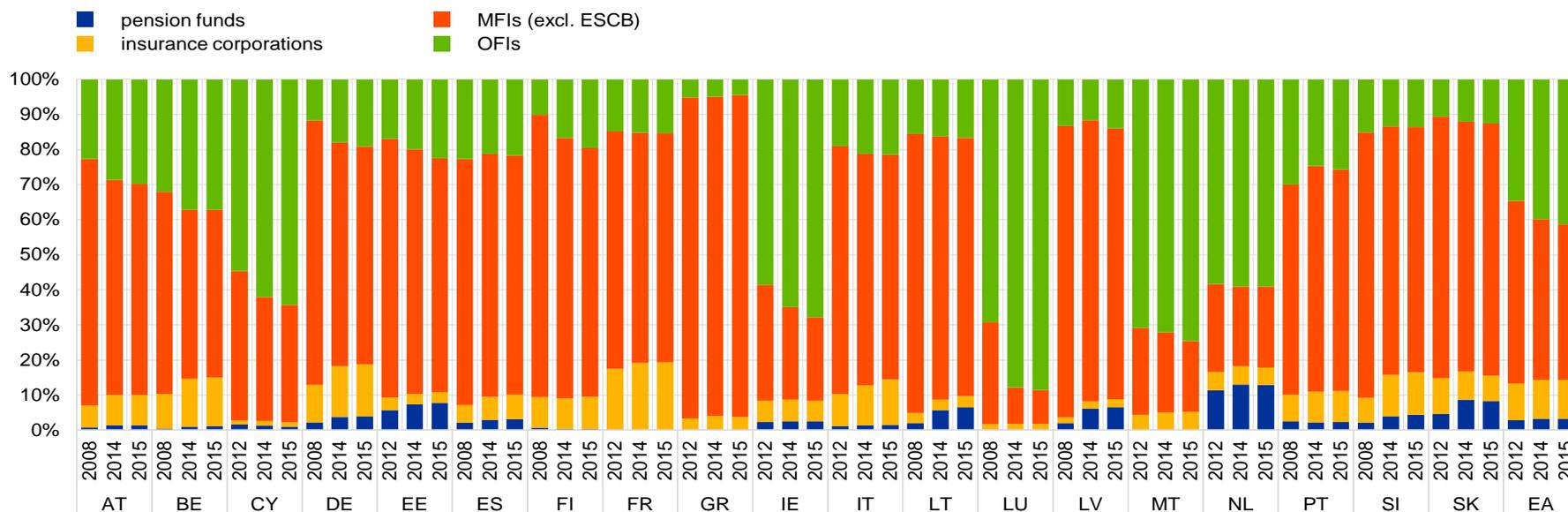
Source: ECB (EAA, MFI BSI statistics) and ECB calculations.

Notes: "MFIs (excl. ESCB)" refers to the difference between MFI total assets (including national central banks, NCBs) from the QSA and NCB assets from the MFI BSI statistics. Data for 2008 are not available for all the countries, and in such cases data for 2012 are used. EA (euro area) is the sum of individual euro area countries and is therefore also a combination of data for 2008 and 2012 for the starting date.

2.1 Sector analysis: imbalances and leverage rotation

Cross-country composition differences of the financial system

Composition of the euro area financial sector, 2008, 2014 and 2015 (% of total assets of the financial sector)



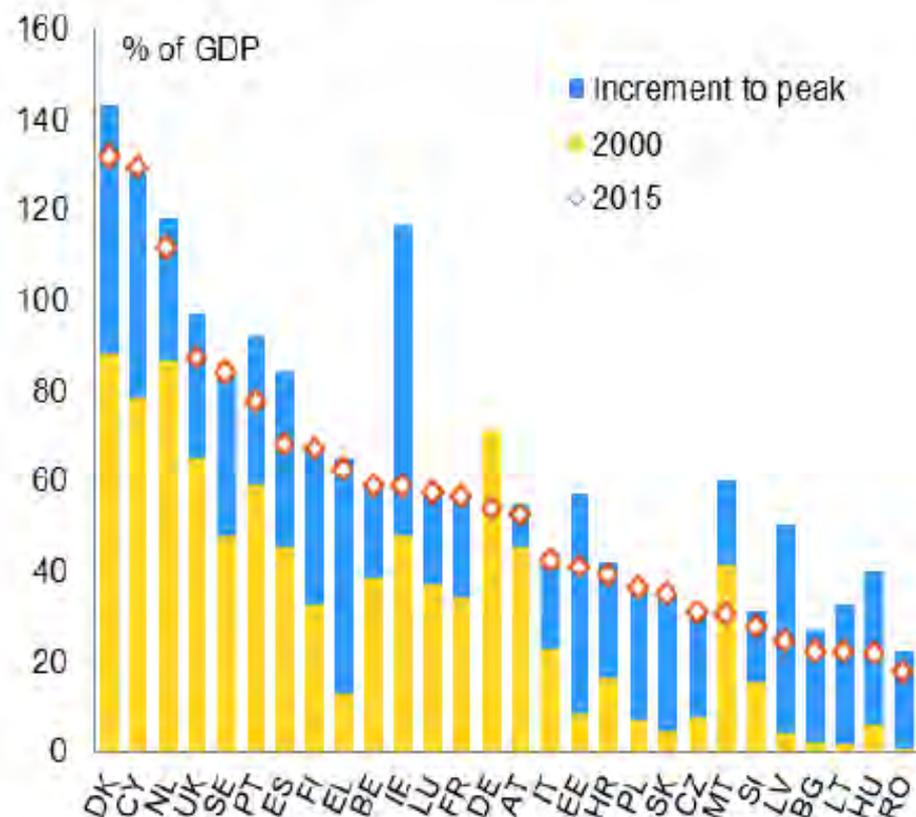
Source: ECB (EAA, MFI BSI statistics) and ECB calculations.

Notes: "MFIs (excl. ESCB)" refers to the difference between MFI total assets (including NCBs) from the QSA and NCB assets from the MFI BSI statistics. Data for 2008 are not available for all the countries. In such cases data for 2012 are used instead. EA is the sum of individual euro area countries and is therefore also a combination of data for 2008 and 2012 for the starting date.

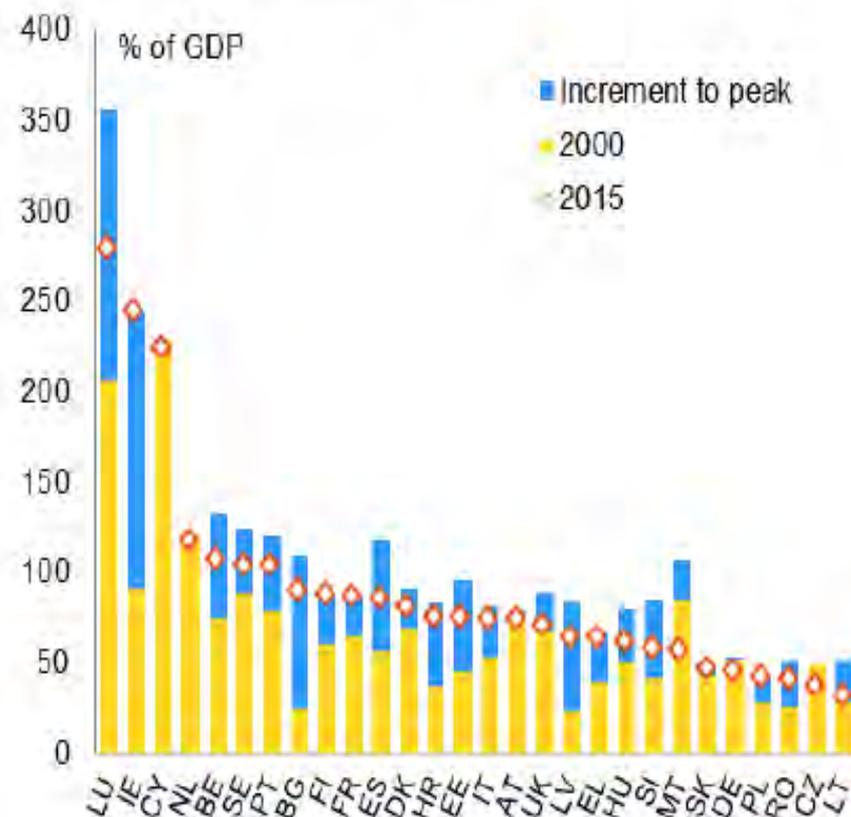
2.1 Sector analysis: imbalances and leverage rotation

MIP: Annual review of macroeconomic imbalance in the European Union

Graph 8a: Consolidated household debt



Graph 8b: Consolidated debt of NFCs



Source: Alert Mechanism Report 2016, European Commission.

1 Financial accounts uses: financial accounts and the ECB functions

2 Analytical examples

2.1 Sector analysis: imbalances and leverage rotation

2.2 Who-to-whom and interconnectedness

3 Enhancing financial accounts uses: ESCB medium-term strategy

4 ECB communication

2.2 Who-to-whom and interconnectedness

NETWORK of sector interlinks

Columns break down a sector's liabilities by counterparty.

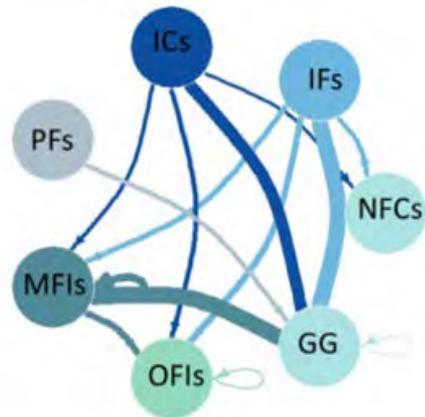
Rows break down its assets.

Government

Assets:	Liabilities :
Item 1 ...	Item 1 ...
Item 2 ...	Item 2 ...
	Debt issued : B+E+H

Banks

Assets:	Liabilities :
Item 1 ...	Item 1 ...
Item 2 ...	Item 2 ...
Debt held : A+B+C	

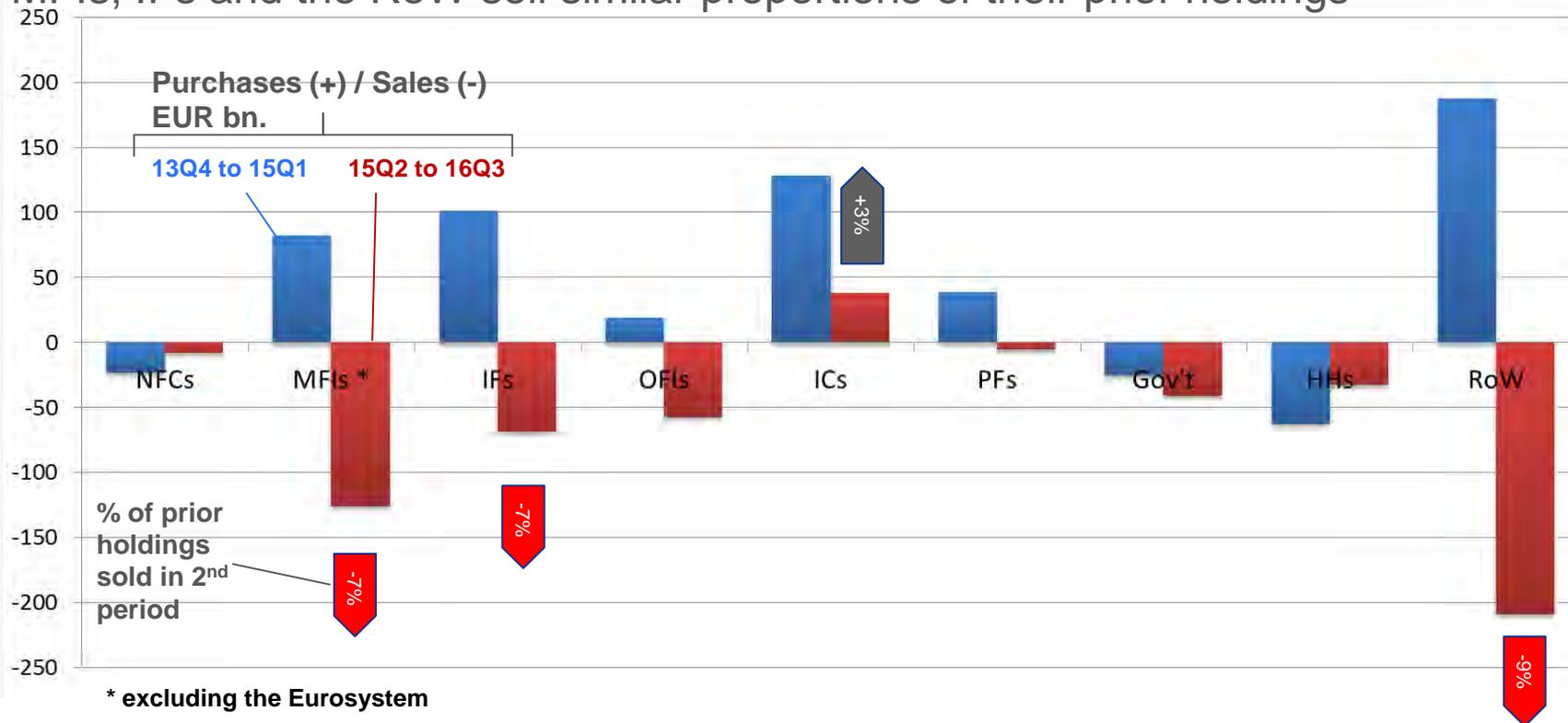


		Debtor (issuer)			
		Banks	Gov't	Corp.	Total held
Creditor (holder)	Banks	A	B	C	Banks: A+B+C
	Gov't	D	E	F	Gov't: D+E+F
	Corp.	G	H	I	Corp.: G+H+I
	Total issued	Banks: A+D+G	Gov't: B+E+H	Corp.: C+F+I	

2.2 Who-to-whom and interconnectedness

Policy transmission : government debt securities before and after QE (PSPP) by the ECB

All sectors (except Insurance) net sellers of government debt after PSPP start
MFIs, IFs and the RoW sell similar proportions of their prior holdings



Investment flows into government debt by sector, six quarters prior (to 15Q1) and after (to 16Q3) the activation of the PSPP, EUR bn.

The PSPP was activated on 9 March 2015. Consequently, a period of 17 business days following activation still falls within the six quarters to 15Q1.

2.2 Who-to-whom and interconnectedness

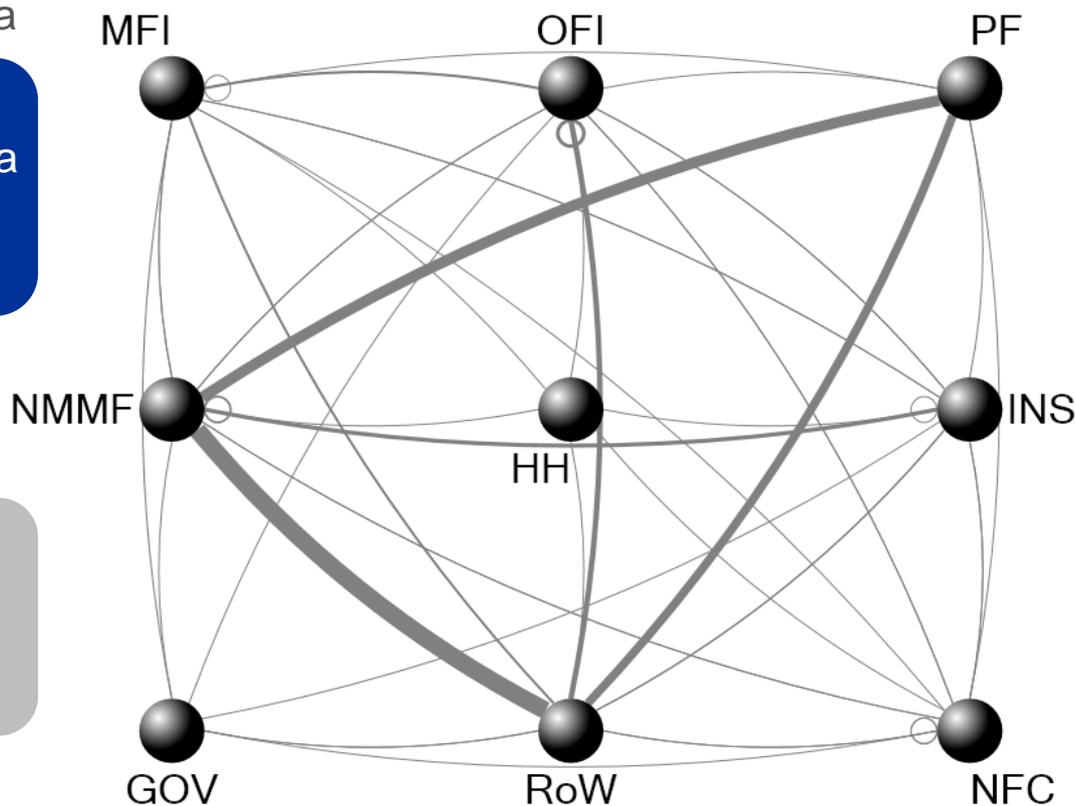
Propagation effects of shocks with network theory tools ...

Flow-of-Funds data

Sectors interconnected via 'Who-to-whom' accounts

Initial shock

Bank capital depletion



Iterative algorithm

1st round: Market value of bank equity decreases

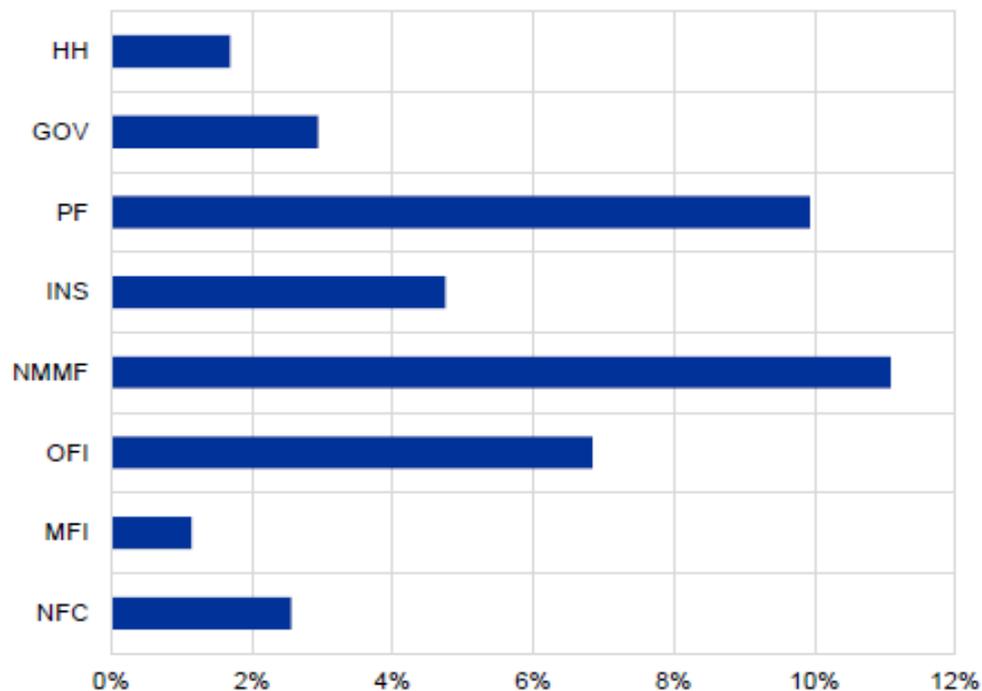
2nd and subsequent rounds (iterative): Loss of equity transmitted to sectors holding equity

2.2 Who-to-whom and interconnectedness

Propagation effects of shocks with network theory tools ...

Cross-sector spillovers would largely affect the non-bank financial sector

Losses triggered by a reduction in market value of bank equity, euro area aggregates, percentages of total financial assets.

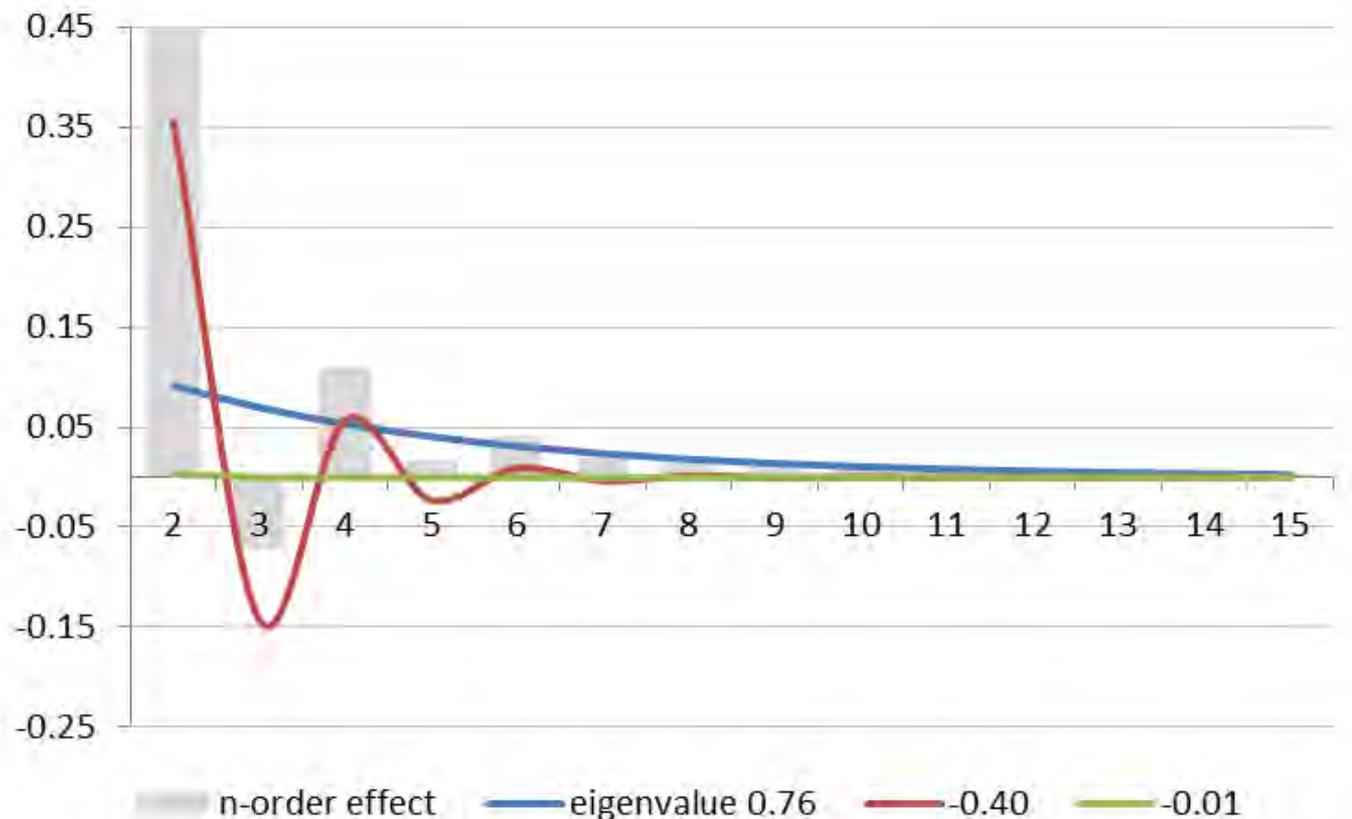


Note: NFC: non-financial corporations, MFI: monetary financial institutions, OFI: other financial institutions, NMMF: non-money market investment funds, INS: insurance companies, PF: pension funds, GOV: general government, HH: households, RoW: rest of the world.

2.2 Who-to-whom and interconnectedness

... and decomposing propagation effects...

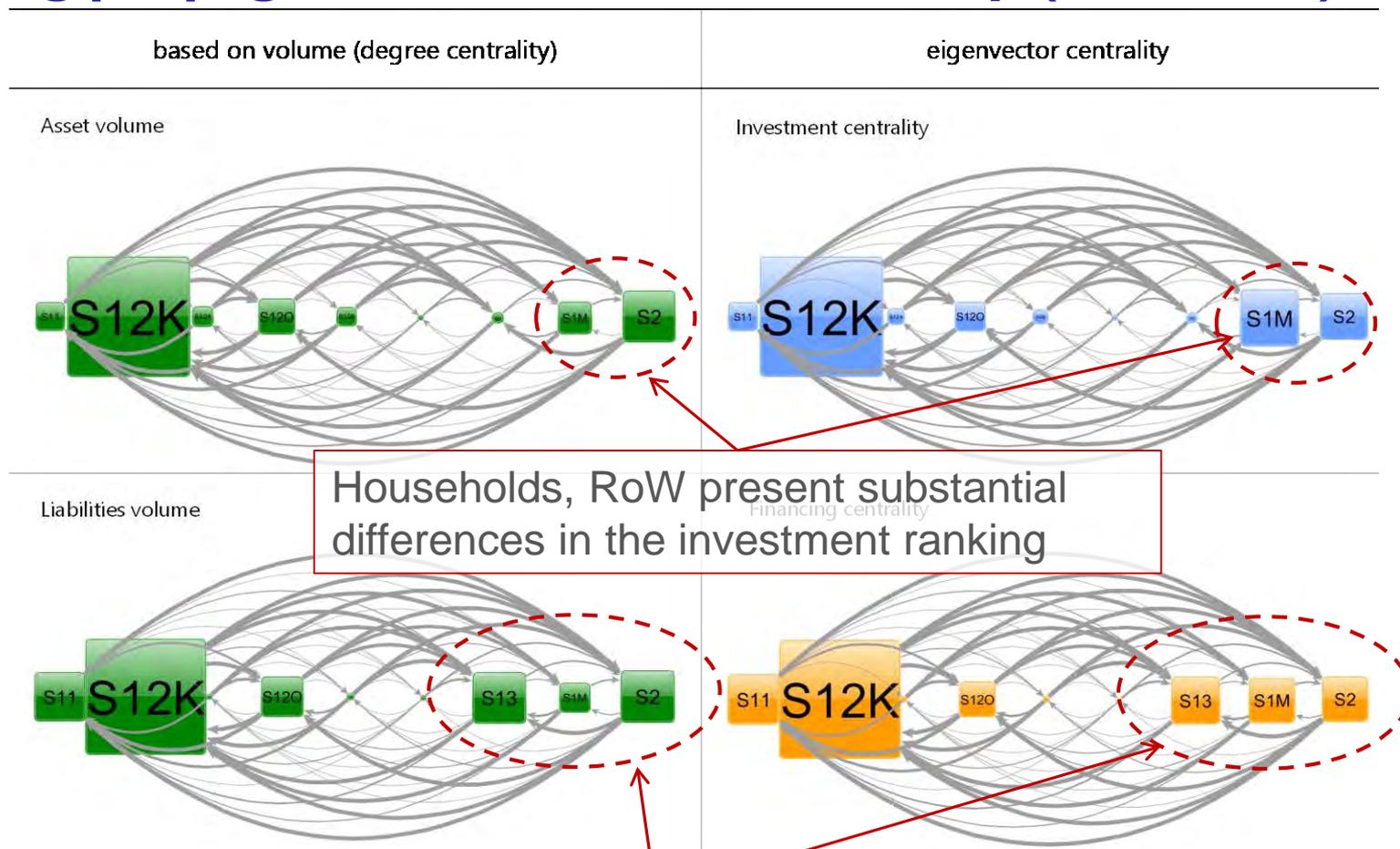
e.g. indirect effects on investment of a QE shock on banks in a 3-sector economy



Girón, C et al (2018), "Propagation of Quantity Shocks in Who-to-whom Networks"
Paper prepared for the 35th IARIW General Conference

2.2 Who-to-whom and interconnectedness

...linking propagation to network centrality (euro area) ...

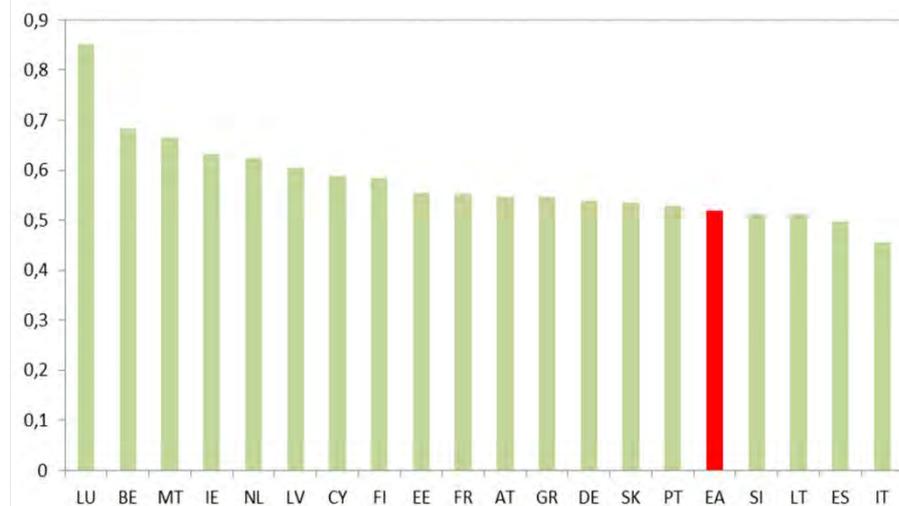
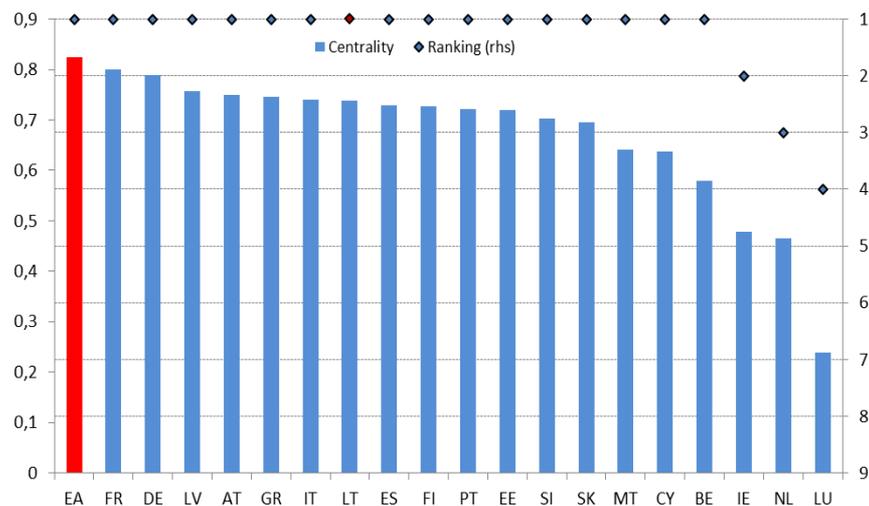


Notes:

- S11: non-financial corporations; S12K: MFIs (S121+S122+S123); S124: investment funds; S120: OFIs (S125+S126+S127); S128: insurance corporations; S129: pension funds; S13: general government; S1M: Households and NPISHs (S14+S15); S12: rest of the world
- Households, government, RoW present substantial differences in financing ranking

3. Who-to-whom and interconnectedness

... and comparing centrality across countries (MFIs in the euro area)



Units : left panel, MFI component in normalized Perron's eigenvector and ranking position; right panel: Perron's eigenvalue; **debt network/matrix** ; 16Q4

- ✓ High centrality of MFIs in all euro area countries: high persistence of propagation effects in quantity shocks; exceptions are IE, NL, LU
- ✓ **IT, ES** : MFI central and relatively higher n-order propagation effects, but less persistent

Girón C, Matas A (2017), "Interconnectedness of shadow banks in the euro area", in "Data needs and Statistics compilation for macroprudential analysis", IFC Bulletin No. 46.

1 Financial accounts uses: financial accounts and the ECB functions

2 Analytical examples

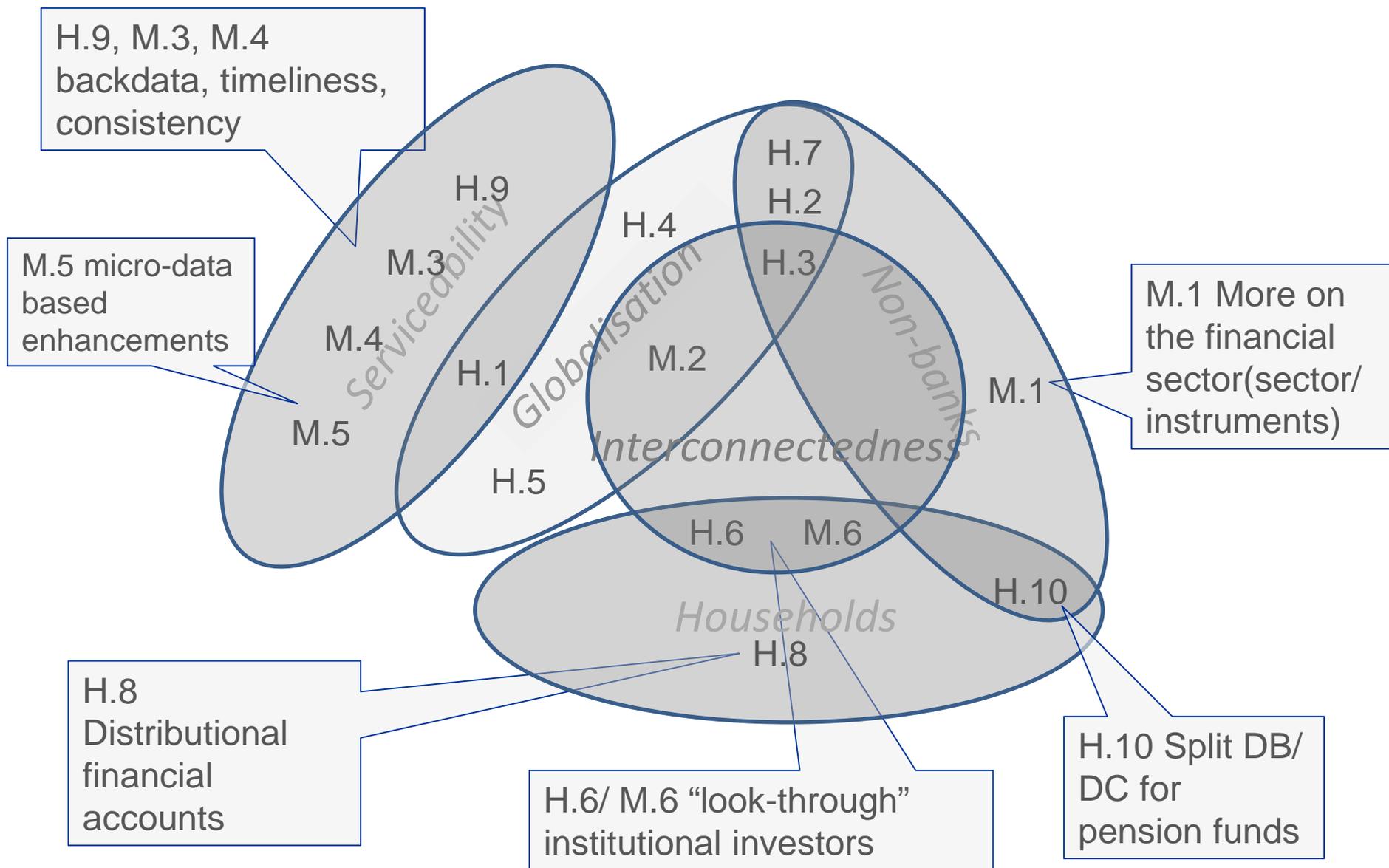
2.1 Sector analysis: imbalances and leverage rotation

2.2 Who-to-whom and interconnectedness

3 Enhancing financial accounts uses: ESCB medium-term strategy

4 ECB communication

3. Enhancing financial accounts uses: ESCB medium-term strategy



1 Financial accounts uses: financial accounts and the ECB functions

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2.1 Sector analysis: imbalances and leverage rotation

2.2 Who-to-whom and interconnectedness

3 Enhancing financial accounts uses: ESCB medium-term strategy

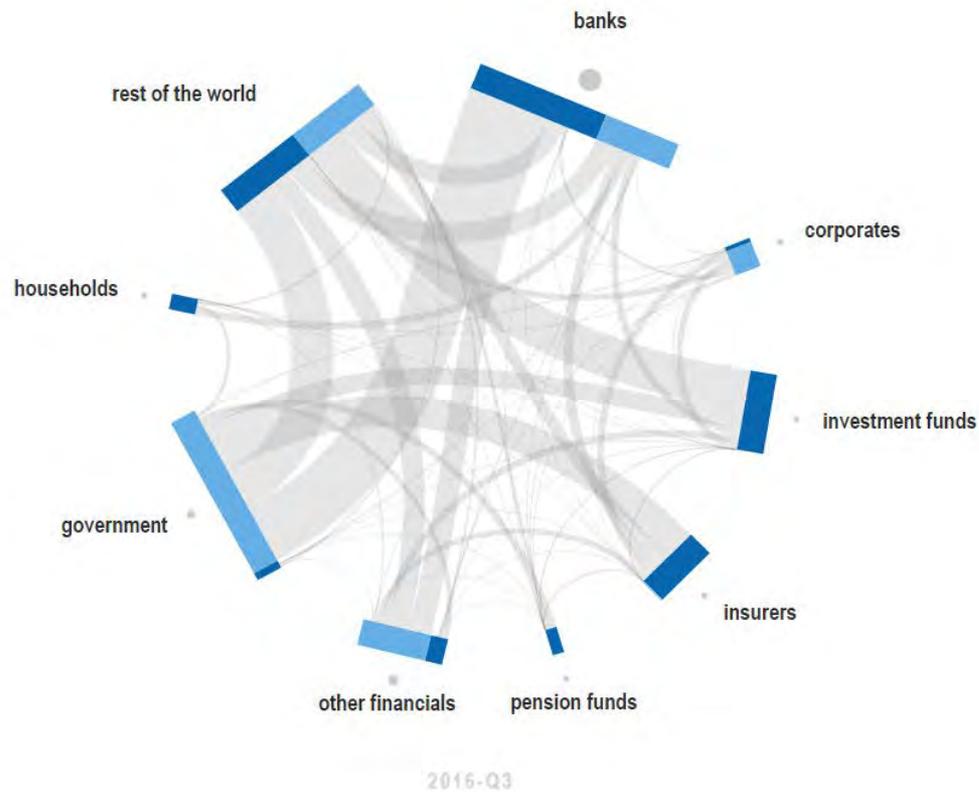
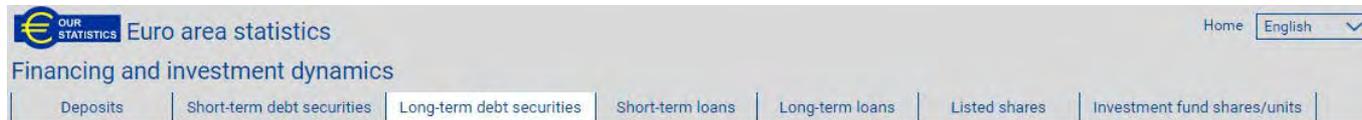
4 ECB communication

EAA Communication channels:

- Briefing note for ECB Executive Board
- Press releases synchronized with Eurostat, with different focus
- 2 ECB press releases each quarter
 - T+94 (NFCs and households focus)
 - T+120 (complete)
- EU country data dissemination by ESCB
- ECB Economic and Statistical Bulletins
- ECB Statistical Data Warehouse
- Quarterly publication: Household Sector Report



Specific presentation of network charts



- 1 Financial accounts uses: financial accounts and the ECB functions
- 2 Analytical examples
 - 2.1 Sector analysis: imbalances and leverage rotation
 - 2.2 Who-to-whom and interconnectedness
- 3 Enhancing financial accounts uses: ESCB medium-term strategy
- 4 ECB communication

Thank you for your attention
Questions and comments are welcome

Mail to: celestino.giron@ecb.int

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

The use of financial accounts for financial stability analysis¹

Márcio Mateus,
Bank of Portugal

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

The use of financial accounts for financial stability analysis

Workshop on the Use of Financial Accounts
(Istanbul, Turkey)

Márcio Mateus
(Financial Stability Department)



BANCO DE
PORTUGAL
EUROSYSTEM

Outline

I. The use of financial accounts (FA) for financial stability analysis: Risk identification

II. The use of FA for financial stability analysis: A practical example on risk assessment

- Motivation
- Methodology
- Results

III. Wrap-up and additional needs



Outline

I. The use of financial accounts (FA) for financial stability analysis: Risk identification

II. The use of FA for financial stability analysis: A practical example on risk assessment

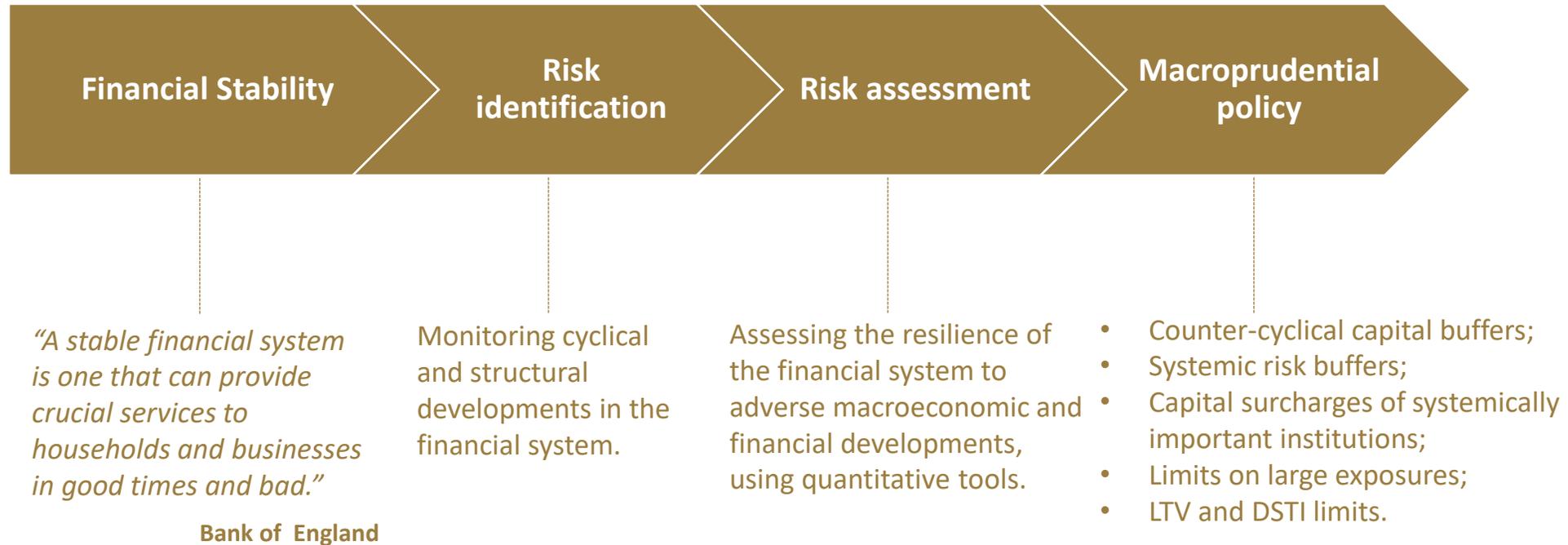
- Motivation
- Methodology
- Results

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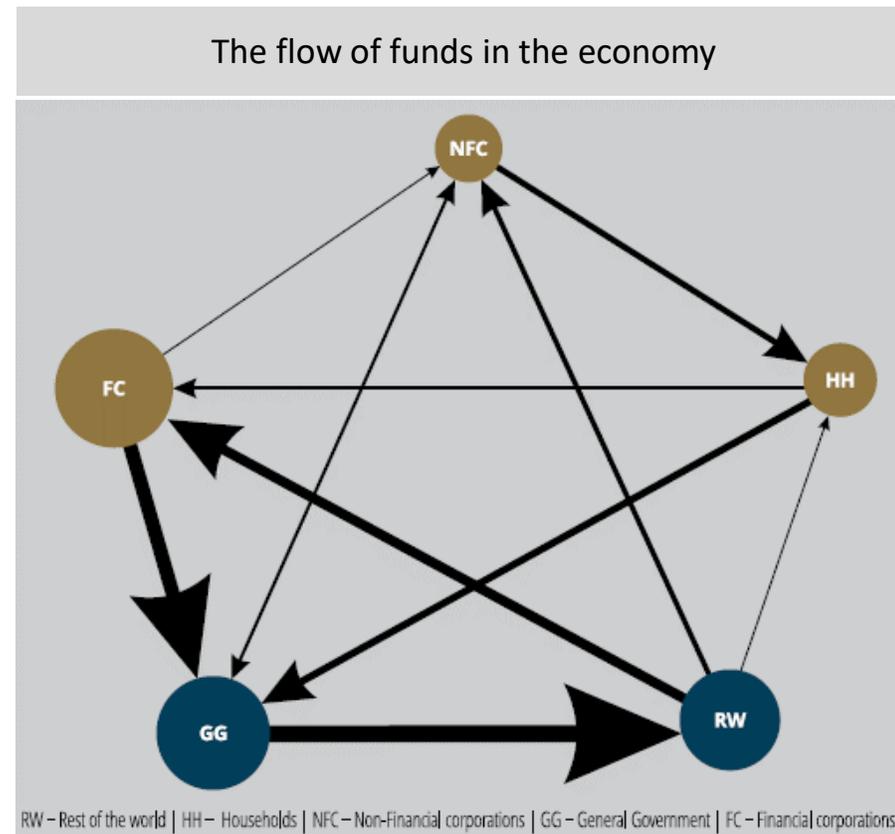
I. The use of financial accounts for financial stability analysis

➤ Financial stability (our work cycle)



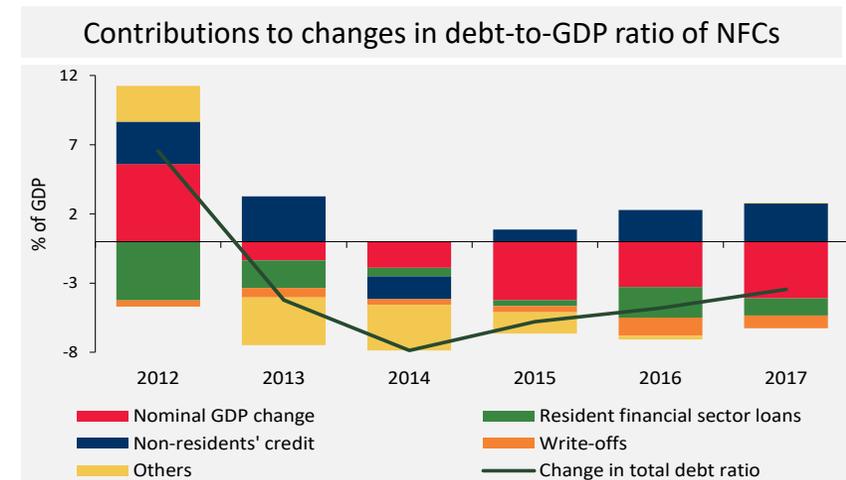
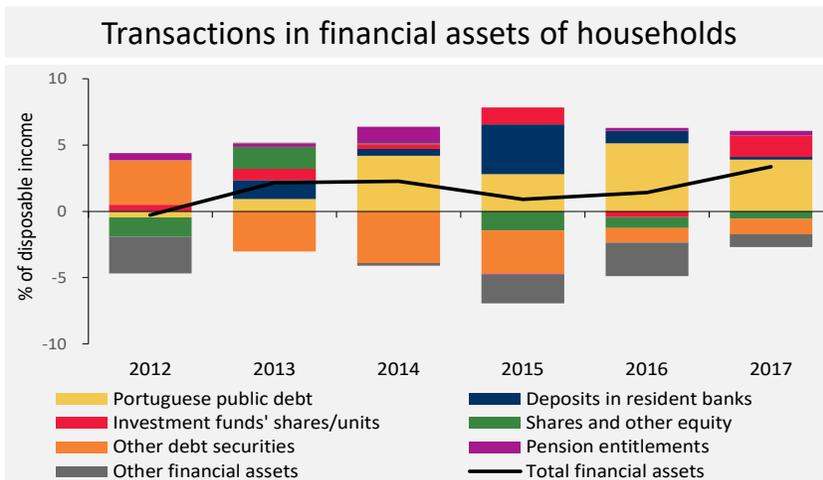
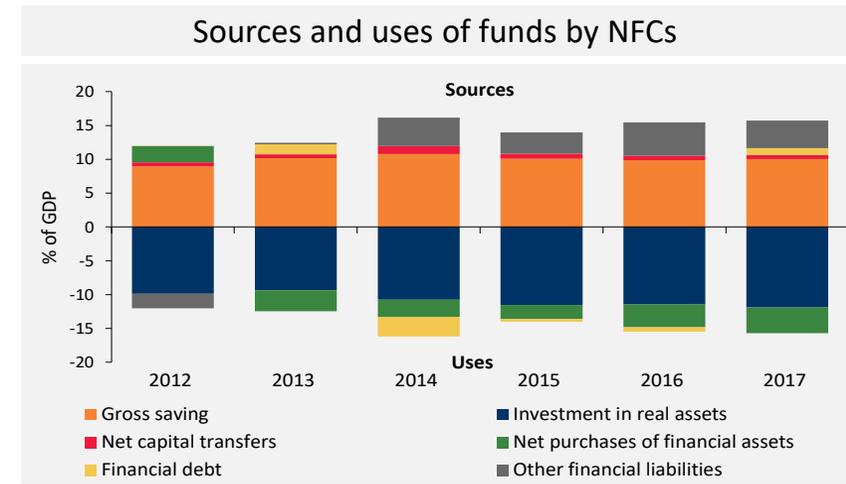
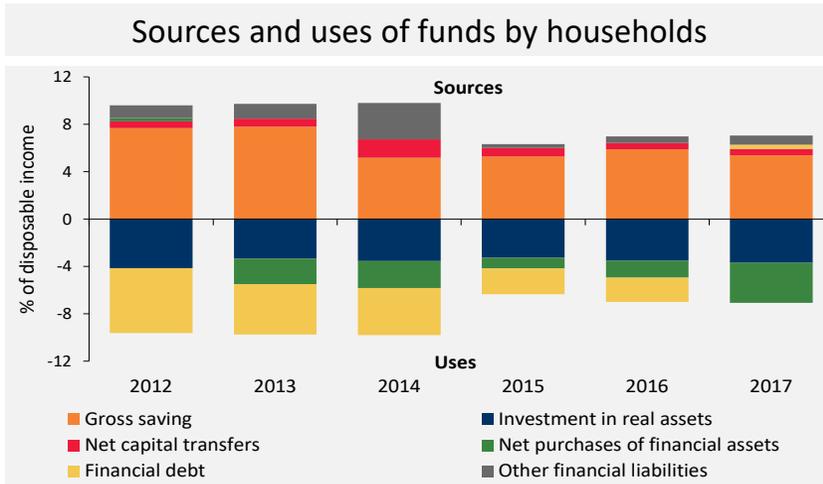
I. The use of financial accounts for financial stability analysis: Risk identification

➤ Financial accounts (FA) as the starting point for risk identification



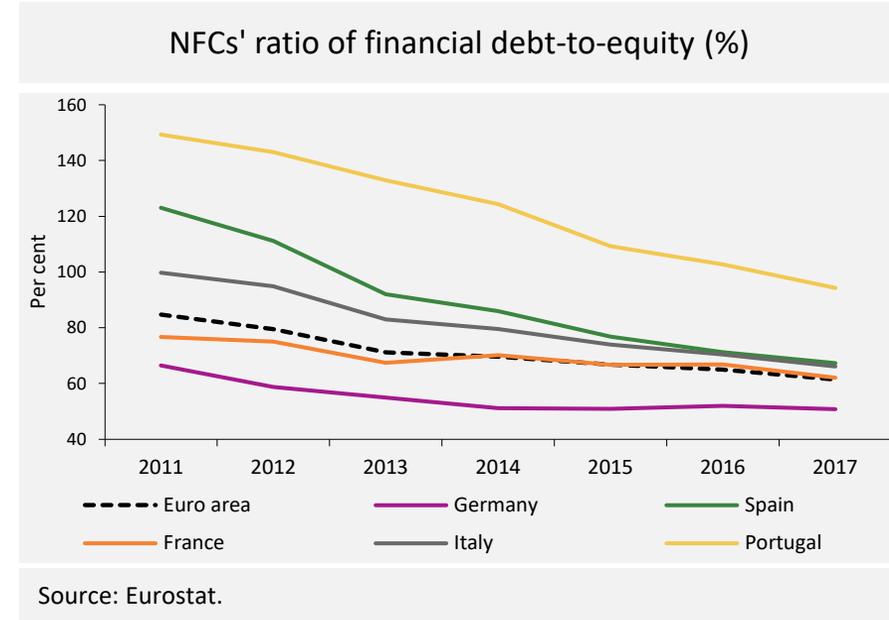
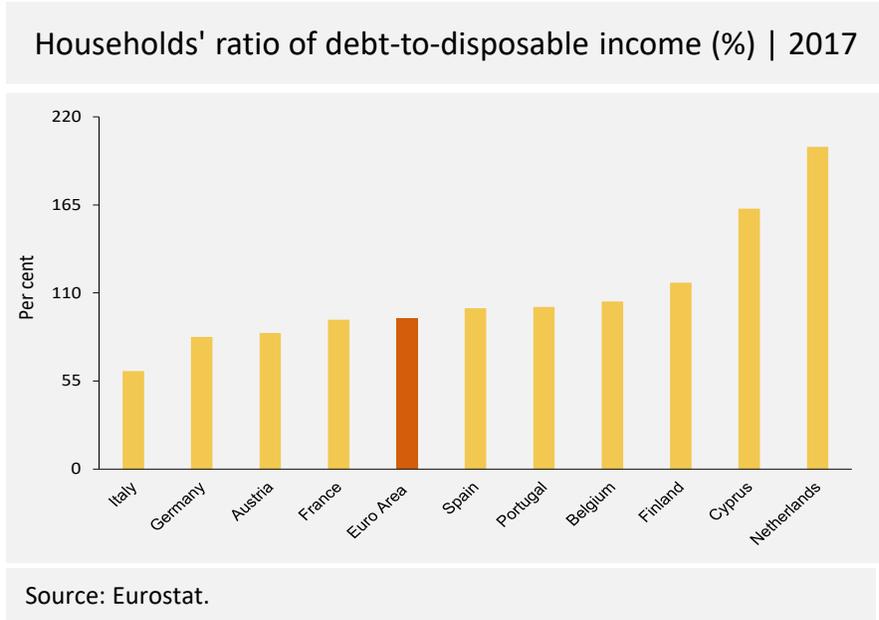
I. The use of financial accounts for financial stability analysis: Risk identification

➤ Sources and uses of funds by institutional sector



I. The use of financial accounts for financial stability analysis: Risk identification

➤ International comparisons

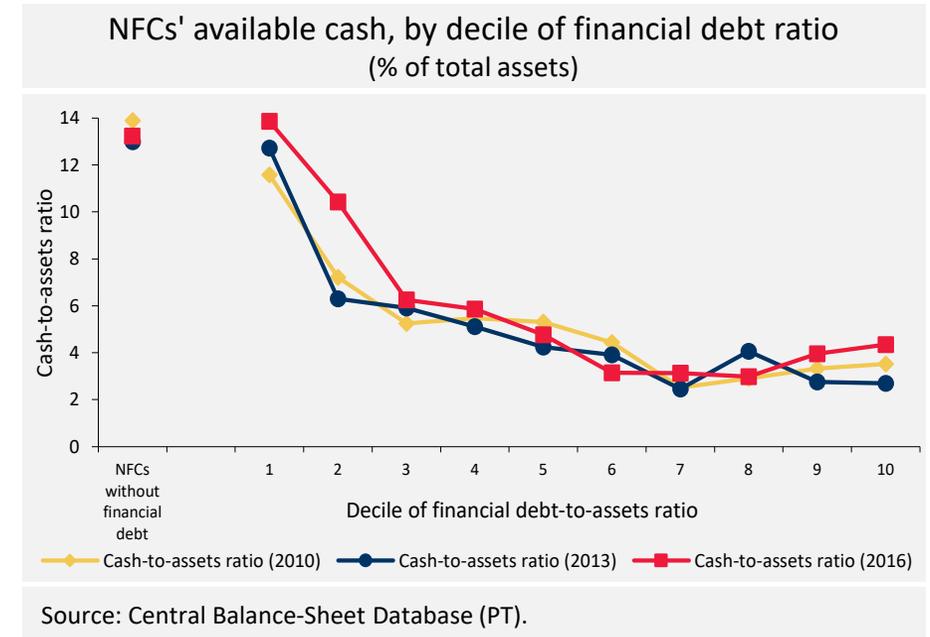
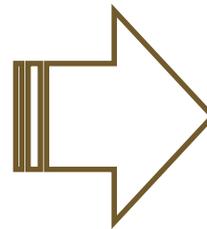
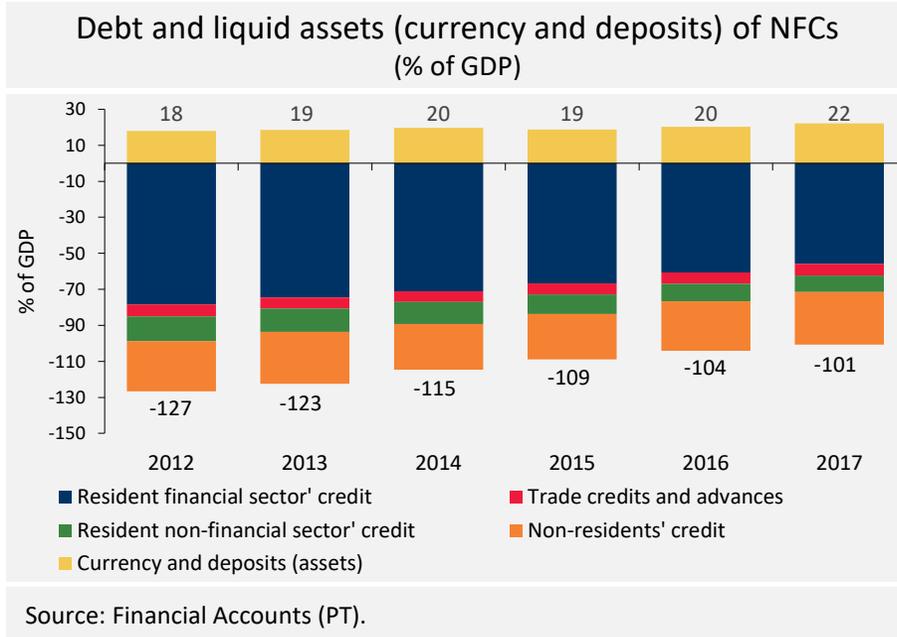


Based on common concepts, definitions, classifications and accounting rules, FA data allows consistent and reliable comparisons across countries.



I. The use of financial accounts for financial stability analysis: Risk identification

➤ However, FA data sometimes is not sufficiently detailed for risk identification



FA provides us aggregated figures we can drill down to further levels of detail by using microdata. A considerable heterogeneity across agents is (sometimes) behind the evolution of aggregated figures.



Outline

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II. The use of FA for financial stability analysis: A practical example on risk assessment

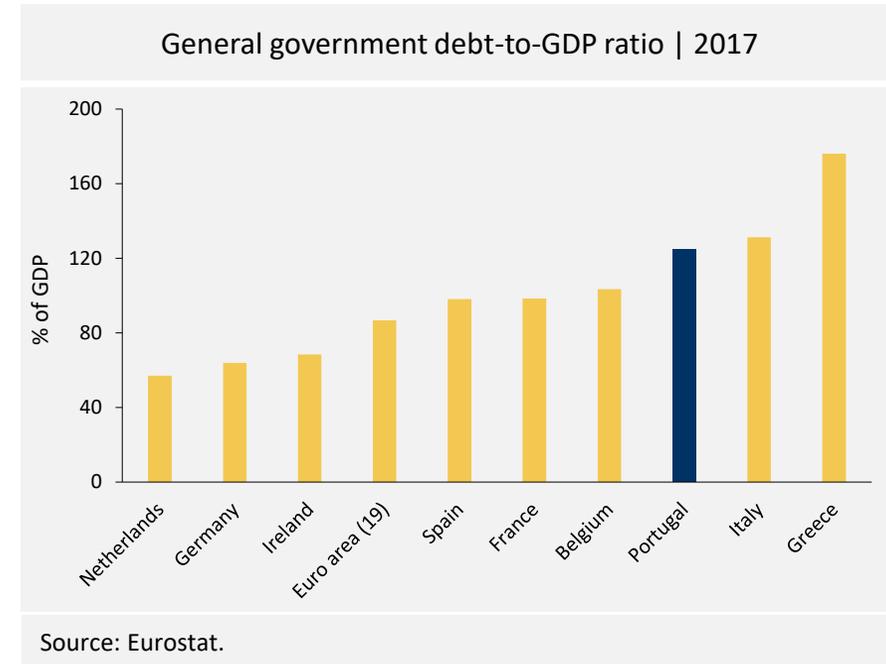
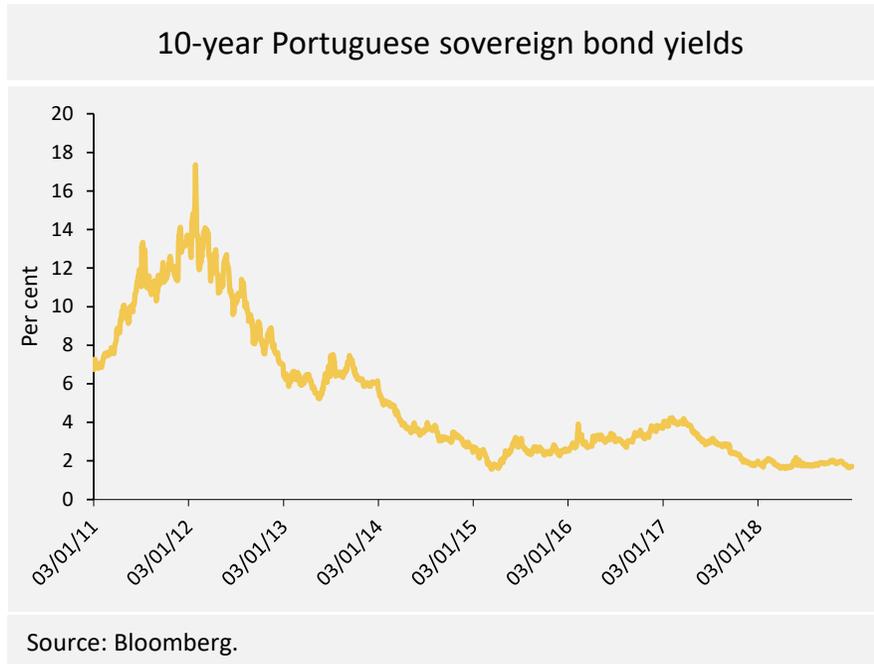
- Motivation
- Methodology
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III. Wrap-up and additional needs



II. The use of FA for financial stability analysis: A practical example on risk assessment - Motivation

➤ Risk identified: **High exposure of the PT financial system to sovereign risk**

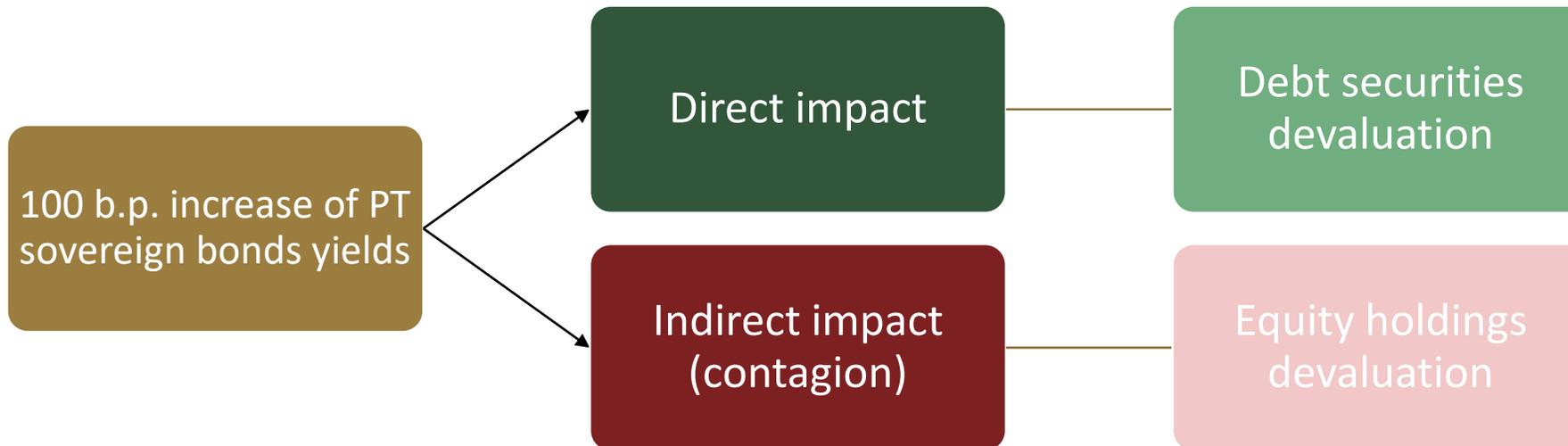


- ✓ Portugal was one of the European countries most affected by the (European) sovereign debt crisis;
- ✓ Portuguese sovereign bond yields are currently at historically low levels;
- ✓ The still high public debt-to-GDP ratio makes Portugal vulnerable to changes in economic and financing conditions.



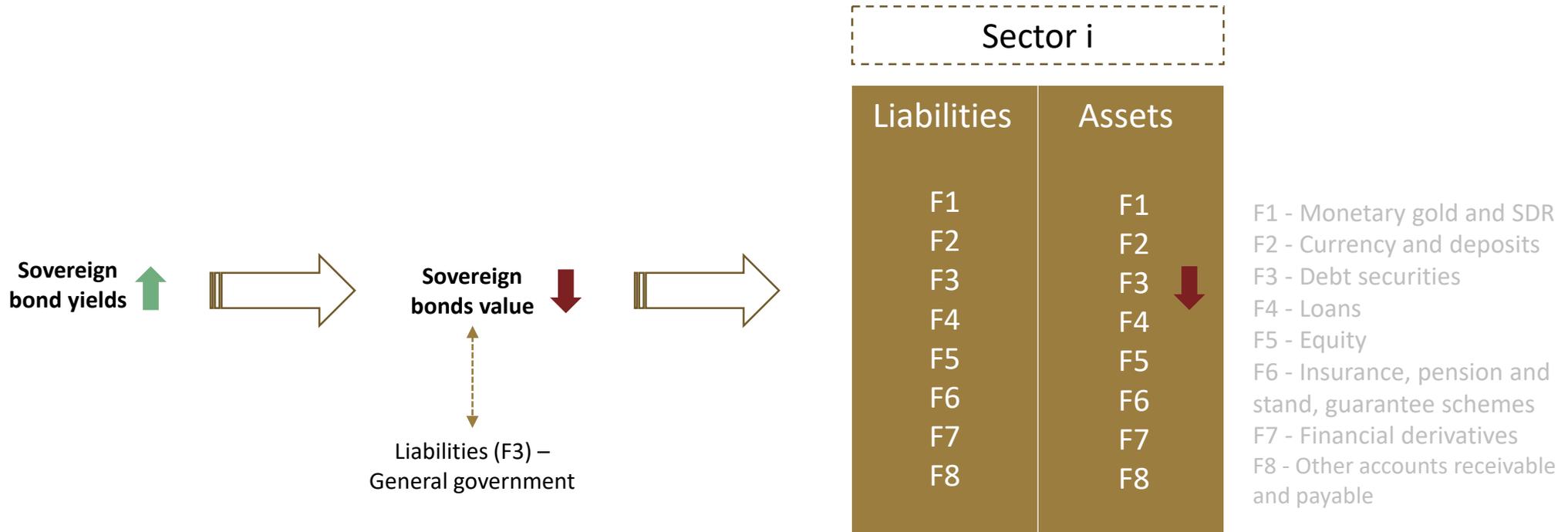
II. The use of FA for financial stability analysis: A practical exemple on risk assessment - Methodology

- Purpose of the exercise: **To estimate the impact of an increase in PT sovereign bond yields (shock) on the various institutional sectors**



II. The use of FA for financial stability analysis: A practical exemple on risk assessment - Methodology

- The impact in each sector of a 100 b.p. increase of sovereign bonds yields: **Direct impact**



If **Sector i** is exposed to sovereign bonds and bond yields increase, all other things being equal, the value of **Sector i's** assets will go down.



II. The use of FA for financial stability analysis: A practical exemple on risk assessment - Methodology

- The impact in each sector of a 100 b.p. increase of sovereign bonds yields: **Direct impact**

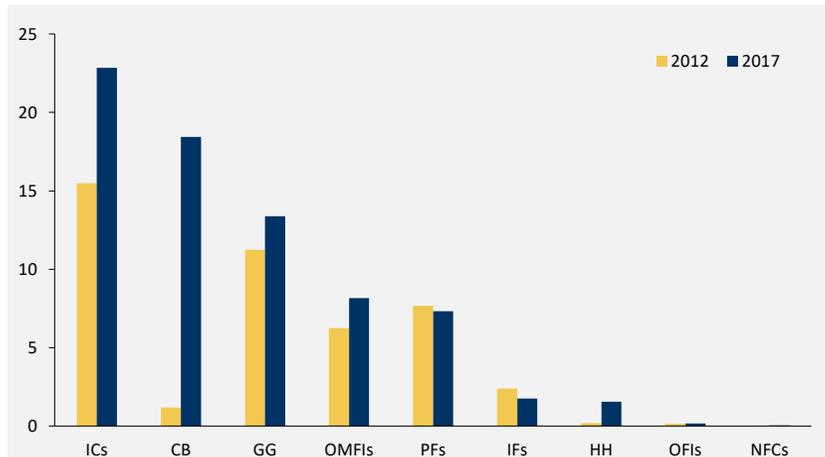
The devaluation recorded by sector (i) in period (t) is given by:

$$DV_t^i = MV_{securities}_t^i * \underbrace{modified\ duration_t^i}_{100\ b.p.\ increase} * \Delta yield$$



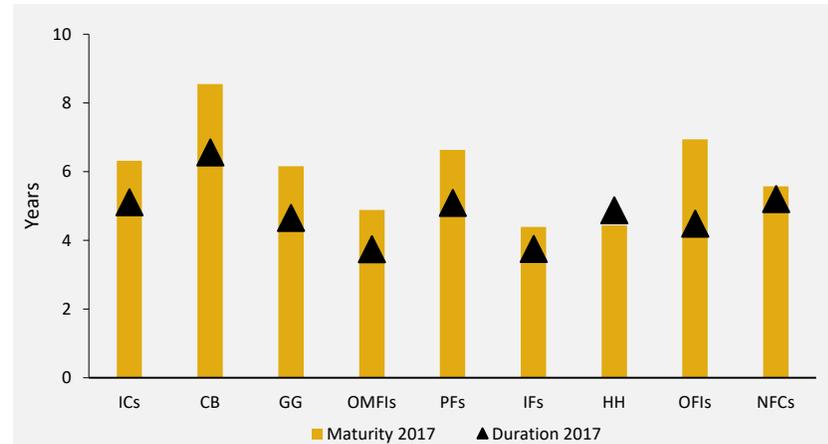
100 b.p. increase

Portuguese sovereign debt | Exposure by institutional sector



Source: Financial accounts (Who-to-whom detail).

Duration and maturity | Weighted average values, by institutional sector

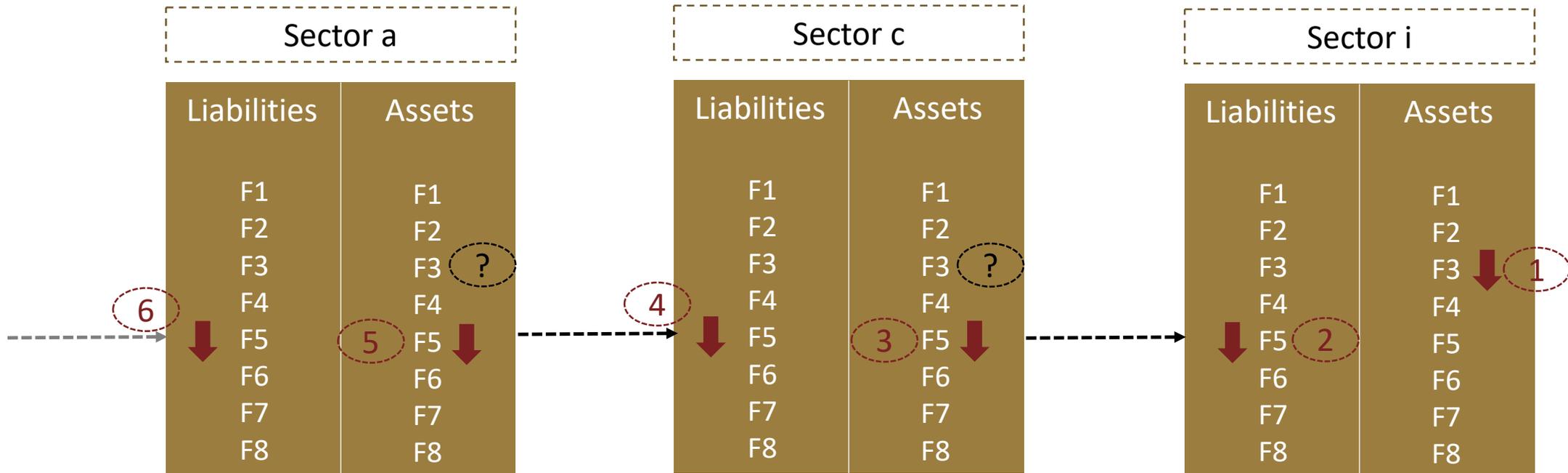


Source: Thomson Reuters Eikon.



II. The use of FA for financial stability analysis: A practical exemple on risk assessment - Methodology

- The impact in each sector of a 100 b.p. increase of sovereign bonds yields: **Indirect impact (contagion)**



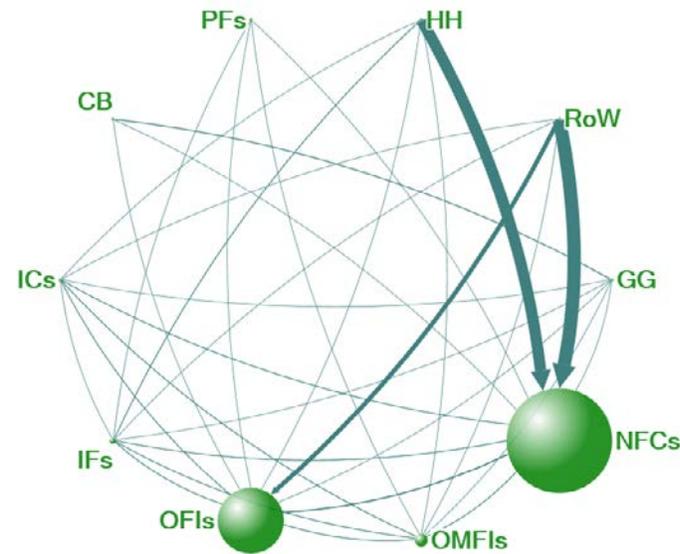
The devaluation of the debt securities held by **Sector i** will directly reduce **Sector i's** assets (1) and equity (2) and, indirectly, via cross-sector equity holdings, **Sectors a and c's** assets and equity (3)(4)(5)(6).



II. The use of FA for financial stability analysis: A practical example on risk assessment - Methodology

- The impact in each sector of a 100 b.p. increase of sovereign bonds yields: **Indirect impact (contagion)**

Network of cross-sector equity holdings | 2017



Source: Financial accounts (Who-to-whom detail).

- ✓ Losses are deducted from each sector's own funds and are swiftly passed through to other sectors via cross-holdings. The iterative algorithm underlying this mechanism calculates the loss distribution in the economy over several rounds and this process continues until:
 - (i) the shock impacts a sector that does not issue capital, or
 - (ii) the affected sector's own funds are depleted.



II. The use of FA for financial stability analysis: A practical exemple on risk assessment - Methodology

➤ The impact in each sector of a 100 b.p. increase of sovereign bonds yields: **Assumptions**

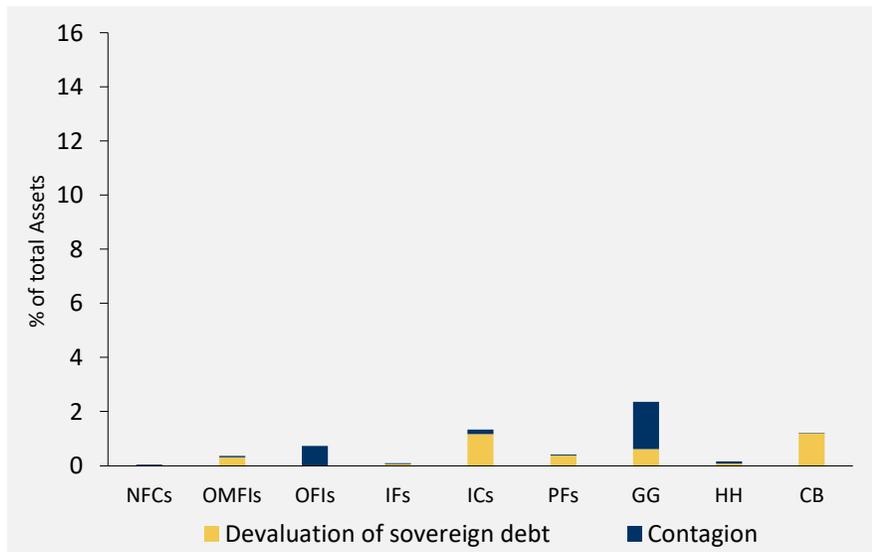
- ✓ Sectors' assets (bonds and equity) are mark-to-market;
- ✓ No mitigation factors, such as hedging derivatives or the agents' response to the shock, are taken into account;
- ✓ Potential contagion effects on private debt and on funding conditions are also ignored.



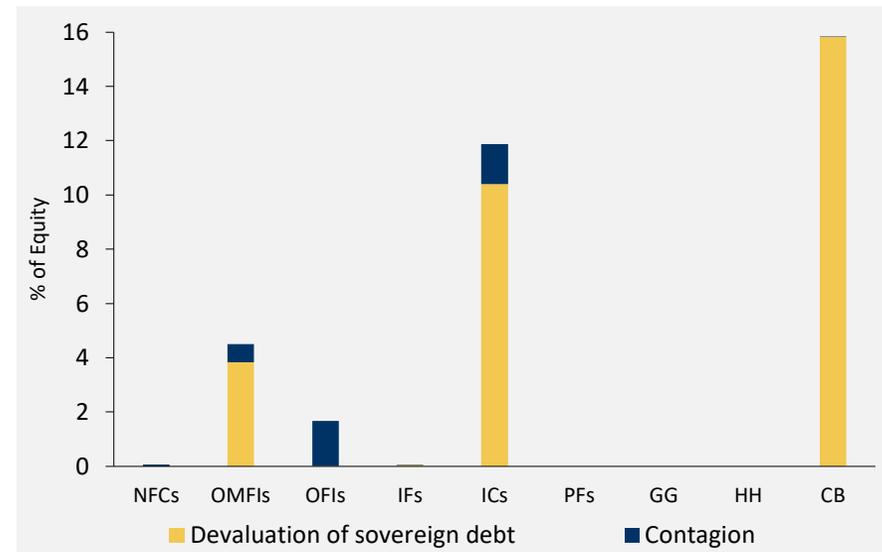
II. The use of FA for financial stability analysis: A practical example on risk assessment - Results

➤ The impact in each sector of a 100 b.p. increase of sovereign bonds yields: **Results**

Asset devaluation (as a % of each sector' total assets) | 2017



Equity devaluation (as a % of each sector' total equity) | 2017



- ✓ In terms of assets, General Government (GG), Insurance companies (ICs) and the Central Bank (CB) would be the most affected institutional sectors;
- ✓ In terms of equity, the CB and ICs would be hit hardest (remember that some sectors do not issue capital);



Outline

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III. Wrap-up and additional needs



III. Wrap-up and additional needs

➤ FA are a valuable source of information for financial stability

- ✓ They provide a picture of the interactions between the different sectors in the economy;
- ✓ Allow us to make consistent and reliable comparisons across countries;
- ✓ They are a privileged starting point to explore micro data;
- ✓ The who-to-whom detail is a very useful piece of information on both risk identification and risk assessment.



III. Wrap-up and additional needs

➤ Additional needs

- ✓ Additional detail for who-to-whom breakdowns (RoW sector by counterpart country/sector);
- ✓ Further detail on the original maturity of debt instruments;
- ✓ Some detail on the residual maturity of debt instruments;
- ✓ More detail on some FA instruments and sectors.



Thank you for your attention!



IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Non-bank financial institutions in Morocco: development and implications for financial stability¹

Mohamed El Khaoua
Central Bank of Morocco

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



Irving Fisher Committee on
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS



Non-bank financial institutions in Morocco: development and implications for financial stability

Mohamed EL KHAOUA
Bank Al-Maghrib, central bank of Morocco
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Use of Financial Accounts Workshop
Istanbul, 18 March 2019



SUMMARY

I Non bank financial institutions (NBFI) in Morocco

- Legal framework
- NBFI's data coverage

II Use of financial accounts to assess the NBFI sector

- Development of the activity
- Implications for financial stability

I- Non bank financial institutions in Morocco

- Thanks to liberalization reforms undertaken during the 90s, the structure of the Moroccan financial system (MFS) has become diversified and similar to the majority of emerging countries.
- The financial innovations have resulted in the creation of numerous financial products, activities and actors.
- The current structure of the MFS is modern and characterized by the presence of different types of actors, from banks to payment institutions.
- The MFS is regulated by three main regulations :
 - *Banking law 103-12 (2014)*
 - *Financial market law 19-14 (2017)*
 - *Insurances code 17-99 (2002)*

I- Non bank financial institutions in Morocco

Financial market

- Money market funds : 47
- Non money market funds 450
- SPV 3
- Private equity funds 7
- **Real estate funds**

Banking system

- Banks :19
- **Participatory banks 5**

Other financial institutions

- Finance companies 32
- Offshore banks 6
- Microcredits associations 13
- CDG
- Money Transfer companies 9
- **Payment institutions 5**

Insurances and reinsurance companies

- Insurance : 22
- Reinsurance : 2

Pension funds

- Moroccan Interprofessional Pension Fund (CIMR)
- National Pension and Insurance Fund (CNRA)

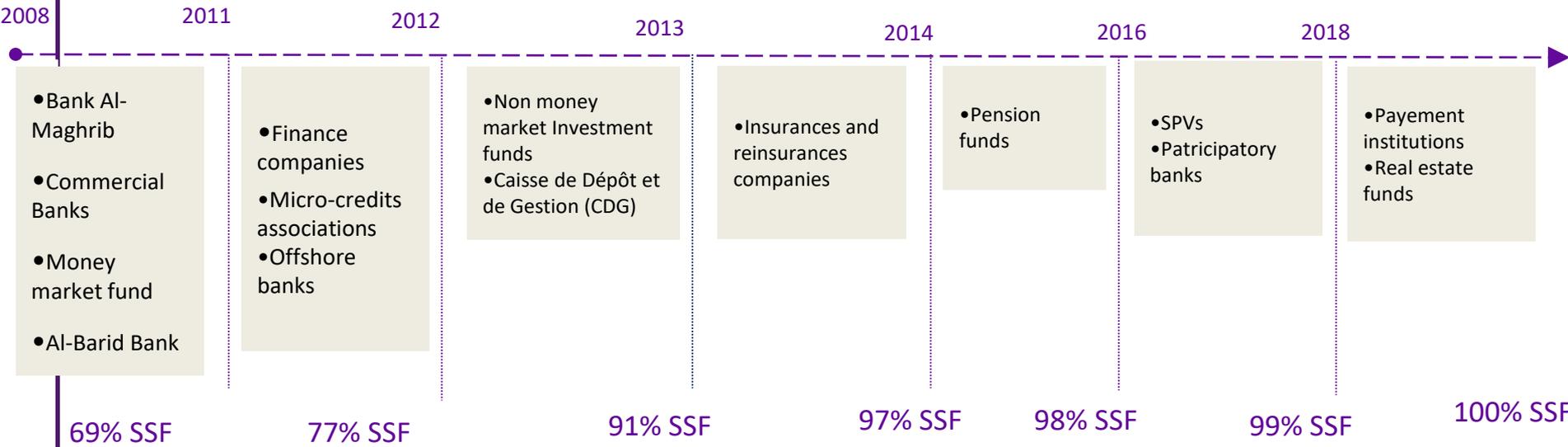
Entities supervised by the Central Bank (BAM)

Entities under the control of the Moroccan capital market authority

Entities under the control of the Supervisory Authority of Insurance and Social Welfare

I- Non bank financial institutions in Morocco

- Since 2008, BAM has started a long process to include this sector's data in the monetary and financial statistics. the main objective is to have an effective regulation, closer supervision, and also for an assessment of the risks of this sector on financial stability,
- This process was engaged under the technical assistance of the IMF and also in close collaboration with other national financial system supervisors



I- Non bank financial institutions in Morocco

BAM publishes monetary and financial statistics in accordance with IMF standards and at different frequencies :

- Monthly basis for the banking system
- Quarterly basis for the NBF. Morocco is among the 50 countries who reports data on NBF under IMF standards, out of 145 countries.

These statistics :

- are an important building block for the compilation of financial accounts.
- Allow us to calculate the NBF position vis-à-vis other sectors which gives us a preliminary view on this sector (development of activity, involvement in economy financing).

II

Use of financial accounts to assess the NBFIs sector

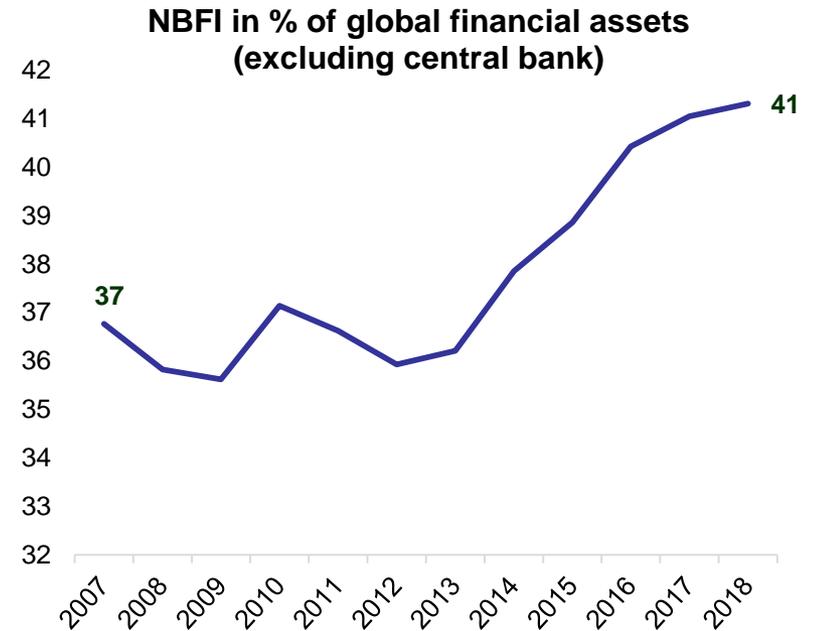
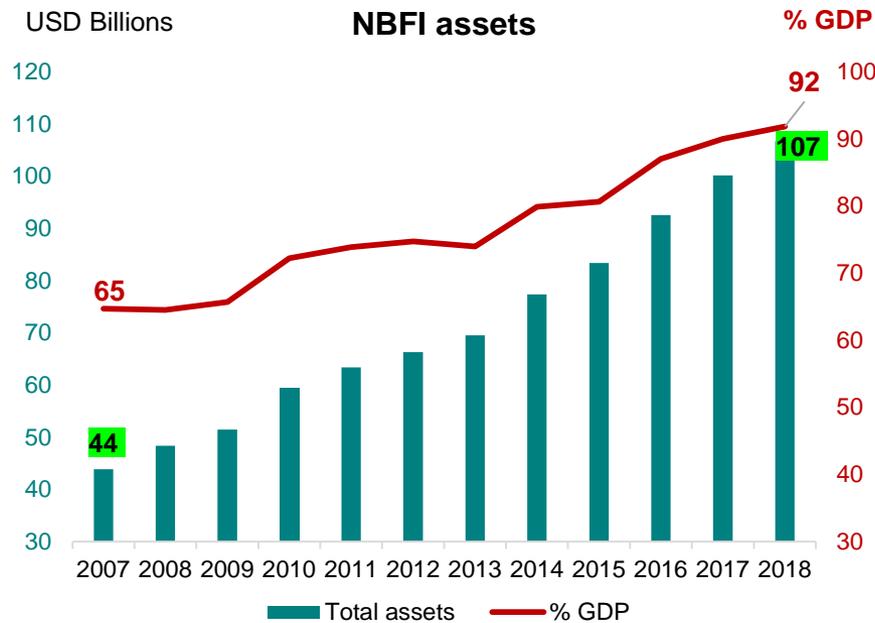
II- Use of financial accounts to assess the NBFIs sector

Importance and risks related to the NBFIs sector

- Non-bank financing is a valuable alternative to bank financing for many firms and households, which have no access to banking system financing.
- This sector is also important in terms of collecting saving, especially long term saving of the non financial sector.
- The involvement of this sector in financial intermediation has helped enhance competition across the financial system and also improve efficiency and greater risk-sharing capacity.
- But, some activities of NBFIs indeed inherently carry risks. In fact, the 2007-2008 global financial crisis highlighted the credit, liquidity, leverage or maturity risks associated with this sector as well as the potential for contagion to the rest of the financial system.
- It is therefore necessary to ensure the existence of an appropriate regulatory framework that preserves both the security of the financial system and the neutrality of regulations.

II- Use of financial accounts to assess the NBFIs sector

Fast development of the NBFIs during the last decade

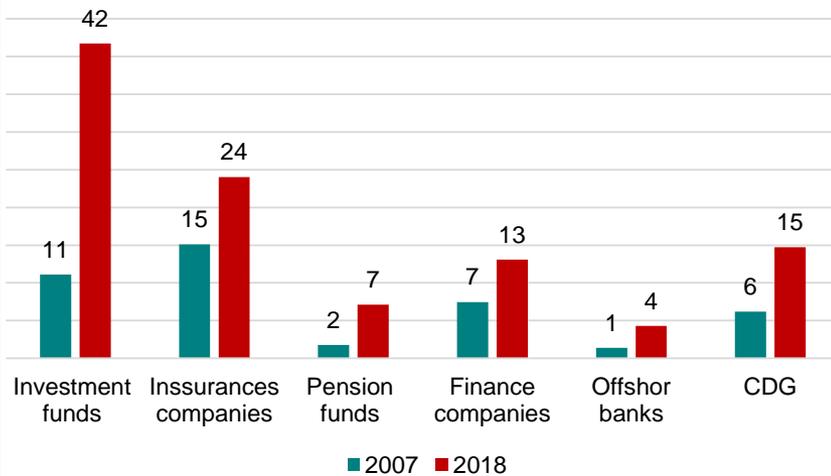


- NBFI's assets has been multiplied by 2.4 while those of the banking sector by 1.9.
- NBFI's assets represent at the end of 2018, 92% of GDP against 65% in 2007
- NBFI's assets represent at the end of 2018, about 41% of global financial assets.

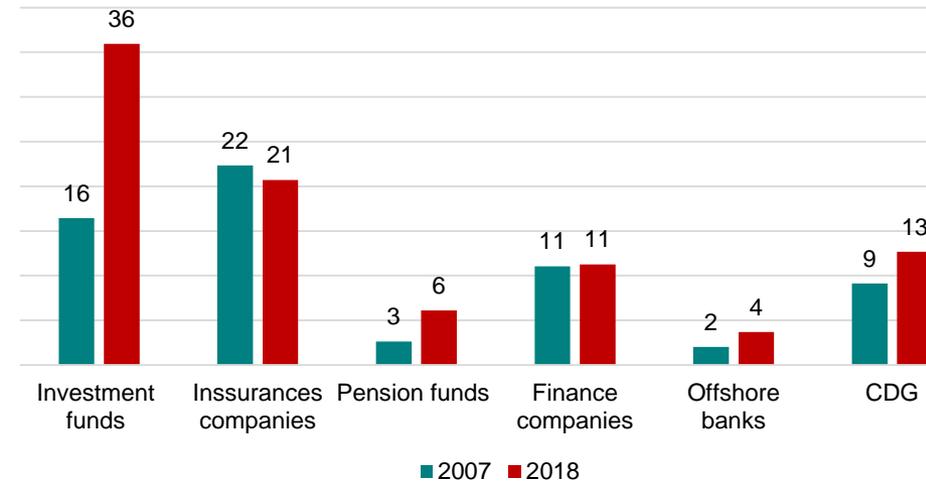
II- Use of financial accounts to assess the NBFi sector

Development driven mainly by investment funds (IF) which is the main NBFi subsector

NBFi assets by institutions
\$ billion

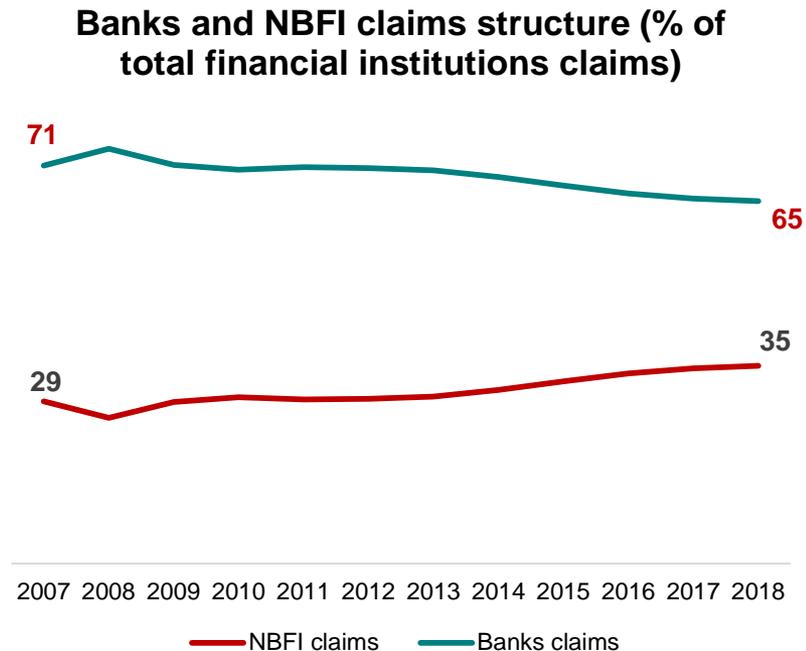
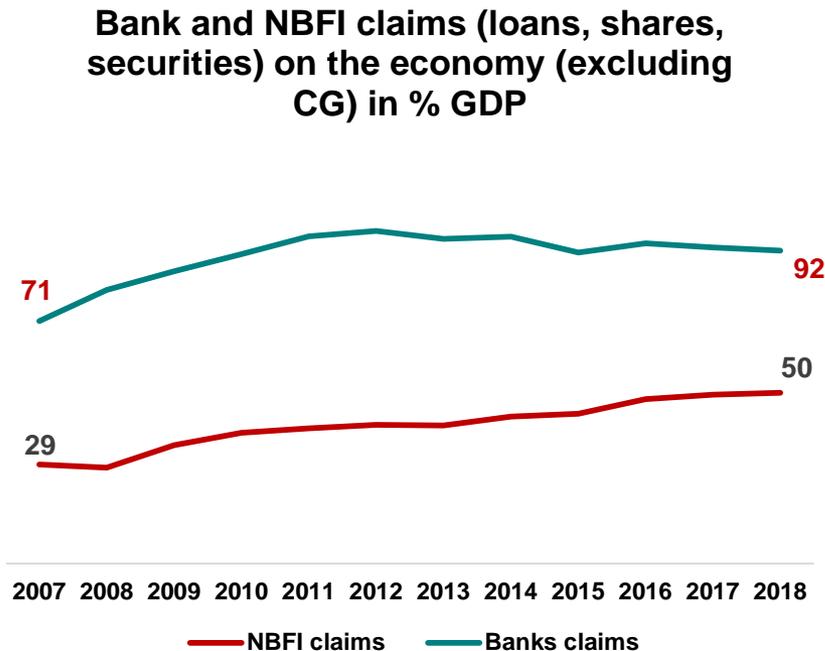


NBFi structure % GDP



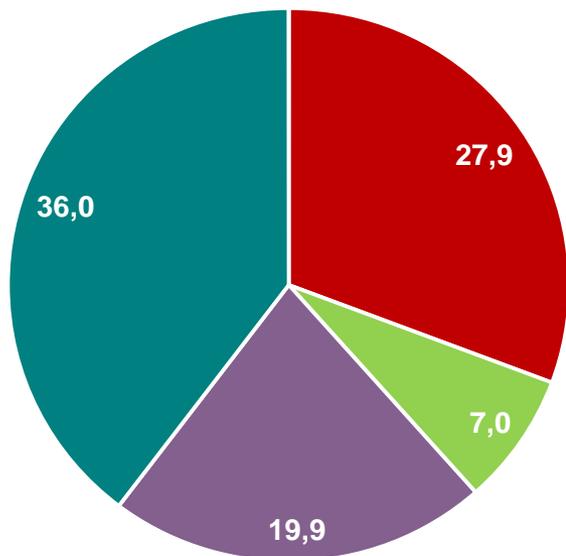
- All sectors have seen their assets grow.
- The development of NBFi assets was driven mainly by the IF which is the largest NBFi sub-sector, followed by insurance companies.
- IF assets rose from \$11 to \$42 billion, taking their share from 16% to 36% while the share of the insurance companies fell from 22% to 21%.

Contribution of NBFIs sector to financing the economy



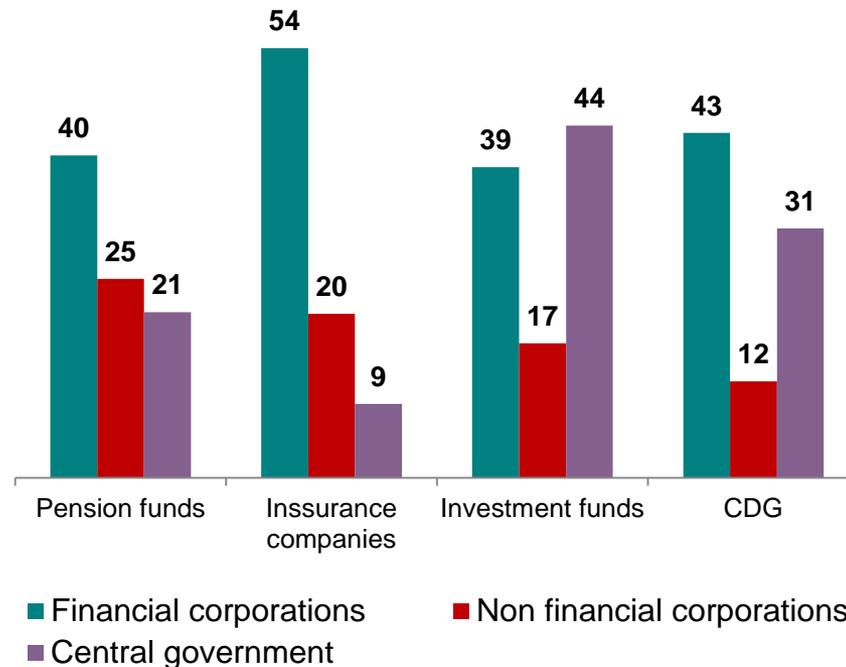
- NBFIs financing in % of GDP increased from 29% to 50% and those of the banking system from 71% to 92%.
- Compared to the banking system, claims on the economy of this sector are becoming more and more important. NBFIs financing's weight grow from 29% to 35% while banks financing's weight fell from 71% to 65%.

**NBFI financing structure
(% of assets, end 2018)**



- central government
- Households
- Non financial corporations
- financial corporations

**NBFI financing structure by subsector
(% of assets, end 2018)**



- Financial corporations
- Non financial corporations
- Central government

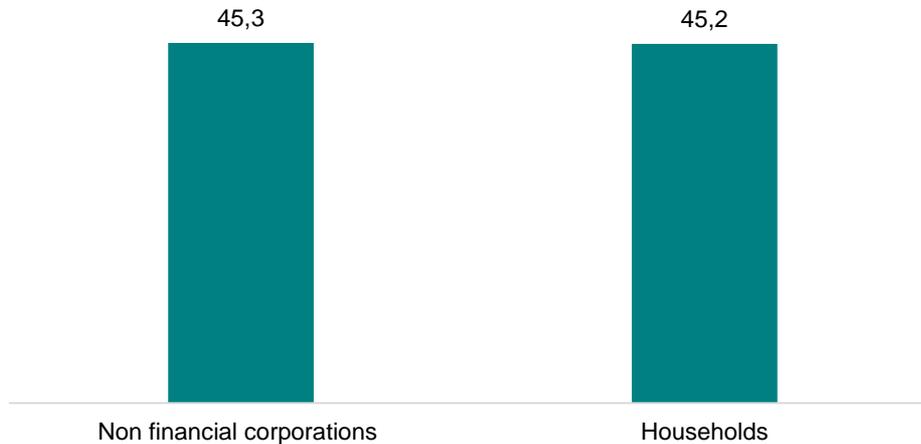
Despite the development of the sector, its implication in financing the economic activity remains below expectations :

- Financial structure of NFCs
- Weak private debt market // A deep public debt market
- Regulatory aspects

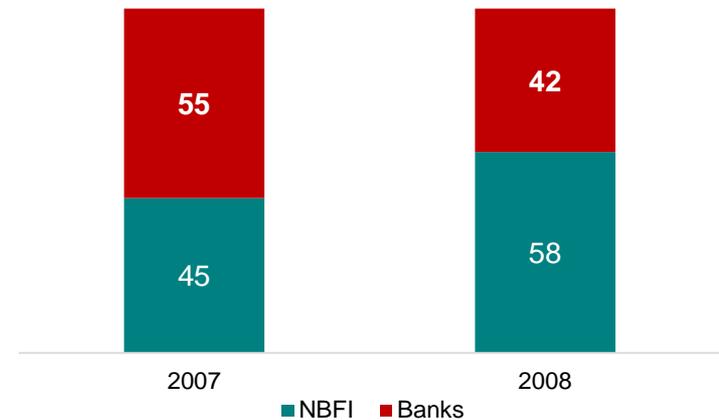
II- Use of financial accounts to assess the NBFi sector

Special focus on finance companies and on NBFi claims on central government

Finance companies financing structure by sector
(% of assets)



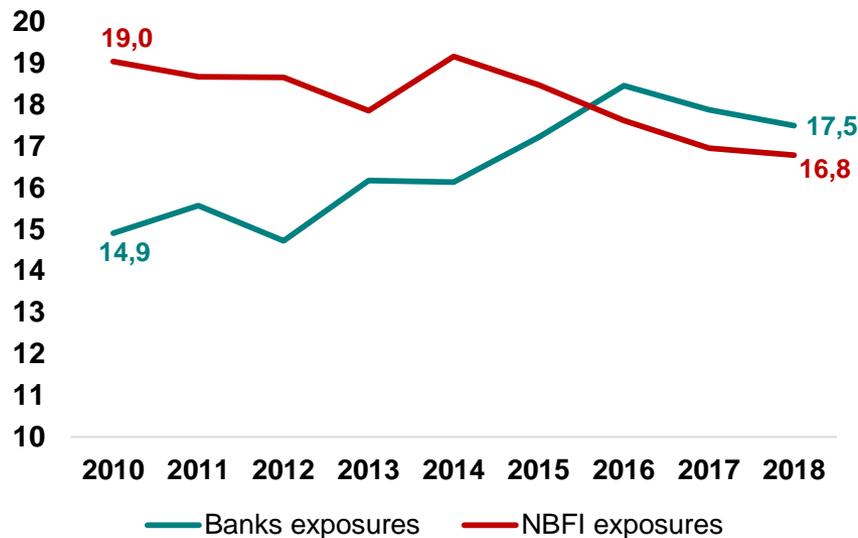
Financial institutions Claims on central government



- Finance companies are an important source of funding for households and NFC. These companies are generally subsidiaries of banks and offer financing to customers who can not access to banking services.
- Loans that finance companies distribute account for 52% of households consumer credit and 36% of business equipment loans from banks.
- NBFi financing to the central government has become more important than banks financing.

II- Use of financial accounts to assess the NBFIs sector

Interconnections between banks and NBFIs (% of total assets)

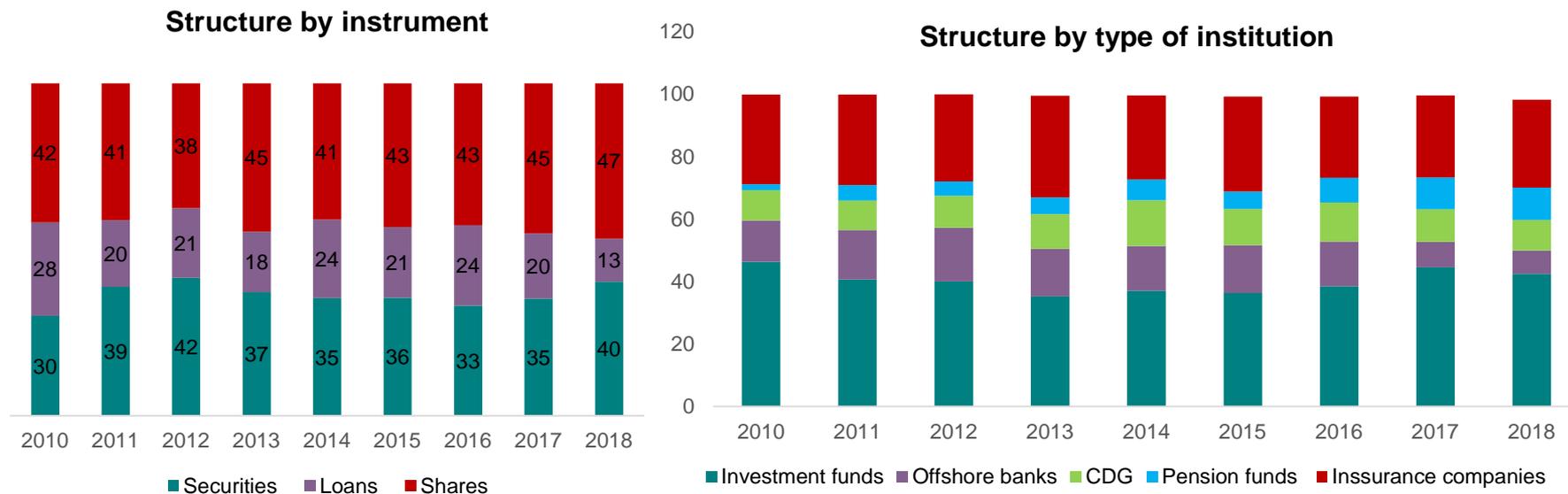


Banks claims on NBFIs are made up of :

- 52% of loans to finance companies (main source of financing of these institutions) and mutual funds (short term operations, liquidity purposes)
- 26% of mutual funds shares

- In Morocco, like in other emerging and developed countries, the financial system is characterized by the existence of interconnections between banks and other financial institutions.
- This interconnections varies across institutions.

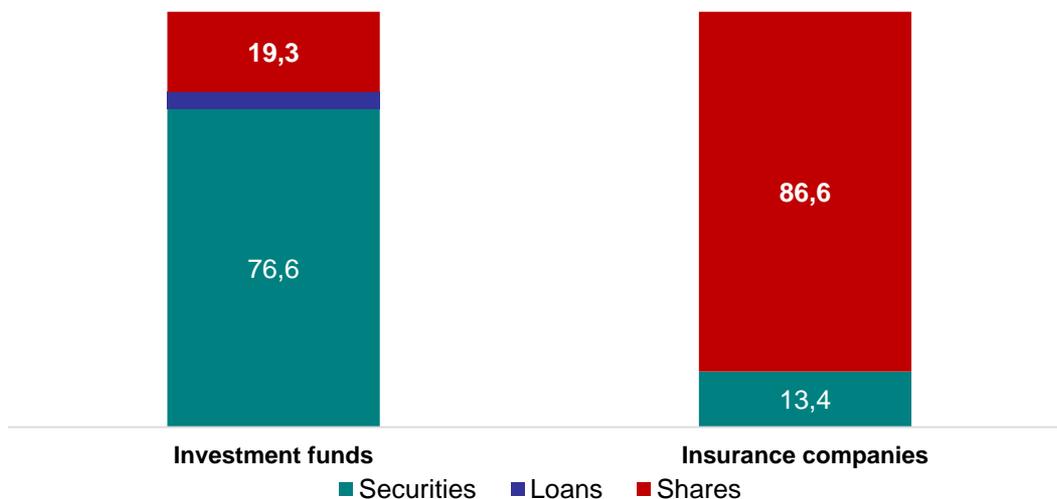
NBFI exposure to the banking system : The structure by instrument and by NBFI sub-sector has not changed



- NBFI exposures to banks are made up, at the end of 2018, of 47% as shares, 40% as securities and 13% as of loans.
- Mutual funds and insurance companies are the two main sectors with the most important exposures, ie 42,5% and 28,2%

Focus on investment funds and insurance companies exposure to banks

Investment funds and insurance companies exposure's structure by type of instrument (in %, end of 2018)



- The investment funds, due the weakness of securities issuance by non financial corporations, invest 11% of their funds in securities issued by banks (which represent 76,6% of their claims on banks). Banks exposure to this sector is estimated at 6% of their assets.
- The insurance sector has large holdings of banks. These holdings account for 14% of the insurance sector (which represent 86,6% of their claims on banks). However, banks' exposure to insurance remain very low and under 1% of banks' total assets.

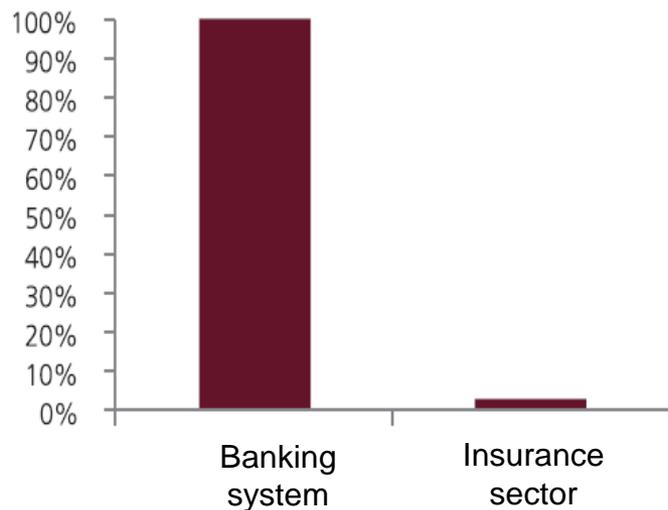
II- Use of financial accounts to assess the NBFI sector

Assessing the interconnections between banks and NBFI

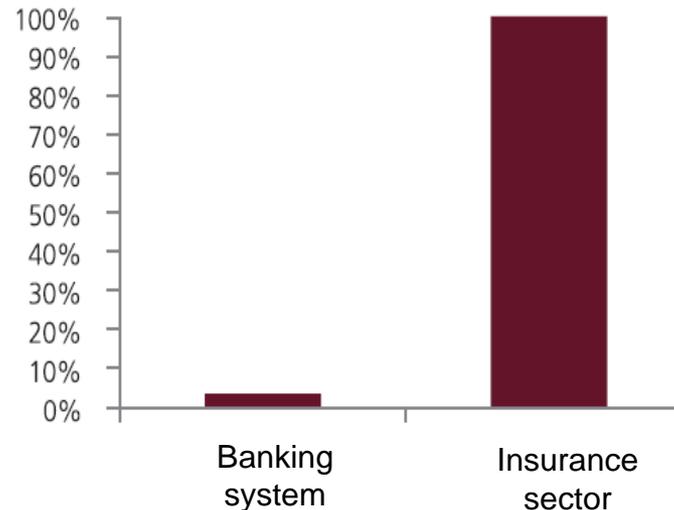
- The interconnections between banks and NBFI are analyzed by the Systemic Risks Coordination and Monitoring Committee (SRCMC).
- The SRCMC was established by banking law and chaired by the Governor of Bank Al-Maghrib and is composed of representatives of the ACAPS, the AMMC and the Ministry of Economy and Finance. One of its missions, is to analyze the situation of the financial sector, assess and prevent systemic risks.
- An assessment of the interconnections between financial institutions is carried out through the conduct of stress tests.
- Among these stress tests, the interconnections between banks and insurance institutions.

Use of financial accounts to assess the NBFIs sector

Contagion index

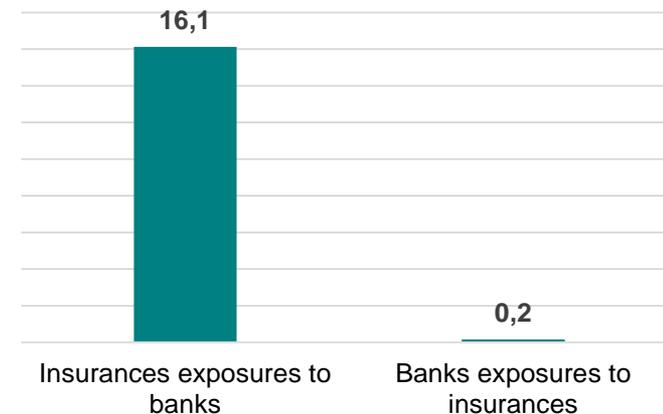


vulnerability index



- Insurers are vulnerable to large banks failures, mainly due to their large holdings of bank equity, (the reverse is not true)
- The contagion risks to banks from large insurers are limited
- The stress testing exercise conducted by the Financial Stability Committee and also under the FSAP confirms the conclusions drawn from the financial accounts.

Banks and insurances mutual exposures (% of assets)



CONCLUSION

For an effective analysis of the financial stability, and closer monitoring of the NBFIs :

- granular and micro data are an important pillar to develop
- Cooperation between national producers of data is necessary
- Enlarge the network exercises of stress tests conducted to other NBFIs like mutual funds.

THANK YOU



IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey

18-20 March 2019, Istanbul, Turkey

Monitoring universe of non-bank financial intermediation (MUNFI): The experience of Bank of Portugal¹

Pedro Miguel Alves

Bank of Portugal

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Monitoring Universe of Non-bank Financial Intermediation (MUNFI): The experience of Banco de Portugal

Pedro Miguel Alves

Advisor, Statistics Department of Banco de Portugal

Istanbul, 18-20 March: The use of financial accounts



BANCO DE
PORTUGAL
EUROSYSTEM

Outline

I. From Financial sector to Shadow Banking (general concepts, definition, overview)

II. MUNFI and Shadow Banking

III. Wrap-up



Outline

I. From Financial sector to Shadow Banking (general concepts, definition, overview)

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I. From Financial sector to Shadow Banking

➤ General concepts



Financial sector

- institutional units which are independent legal entities and market producers, and whose principal activity is the production of financial services, such as financial intermediation and auxiliary financial activities;

MUNFI

- non-bank financial intermediation, comprising insurance corporations, pension funds, non-MMF investment funds, other financial intermediaries and financial auxiliaries;

Source: Global Shadow Banking Monitoring Report 2018, FSB

OFIFA

- consist of the non-MMF investment funds, other financial intermediaries, except insurance corporations and pension funds, financial auxiliaries and captive financial institution and money lenders subsectors;

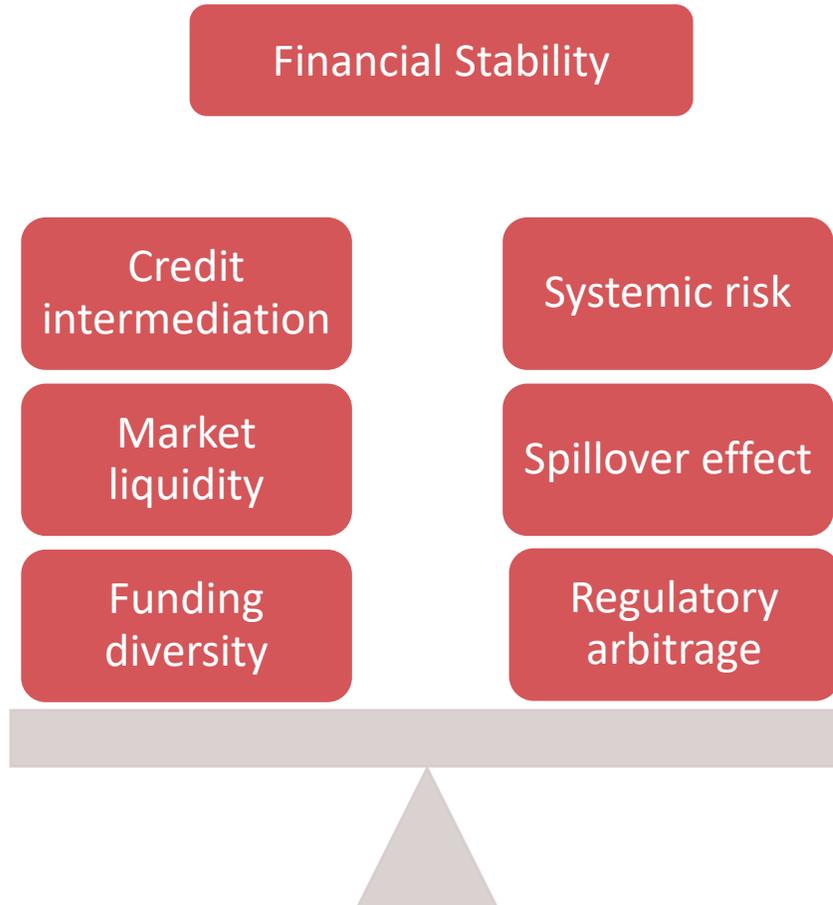
Shadow banking

- “credit intermediation involving entities and activities (fully or partially) outside the regular banking system” or non-bank credit intermediation in short.



I. From Financial sector to Shadow Banking

➤ Overview



G20 recommendation

The Financial Stability Board assessed the evolution of shadow banking activities and related financial stability risks since the 2007-09 global financial crisis, and whether the post-crisis policies and monitoring efforts were adequate to identify and contain these risks.



ESRB
European Systemic Risk Board
European System of Financial Supervision

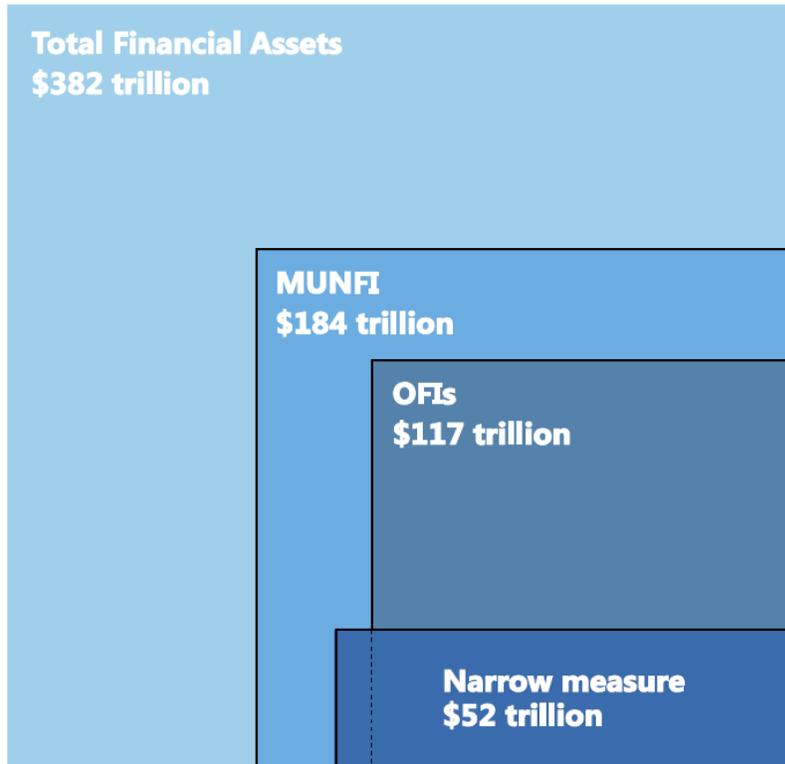


I. From Financial sector to Shadow Banking

➤ Latest developments



Monitoring aggregates 2017 (USD trillion)



Source: Global Shadow Banking Monitoring Report 2018, FSB

Note: Total financial assets, MUNFI and OFIs are based on the 21+EA-Group, due to its broader sample. The narrow measure is based on data from the 29-Group, as the data from eight participating euro area jurisdictions are more granular than the aggregate euro area data from the European Central Bank (ECB).

“MUNFI’s share of total global financial assets increased for the sixth consecutive year (reaching 48.2%)”

“OFI assets grew faster than the assets of banks, insurance corporations and pension funds. OFI assets represent 30.5% of total global financial assets, the largest share OFIs have had on record”

“Investment funds continue to be the largest OFI sub-sector”

“The narrow measure of NBFIs grew by 8.5%, to 51.6 USD trillion in 2017”

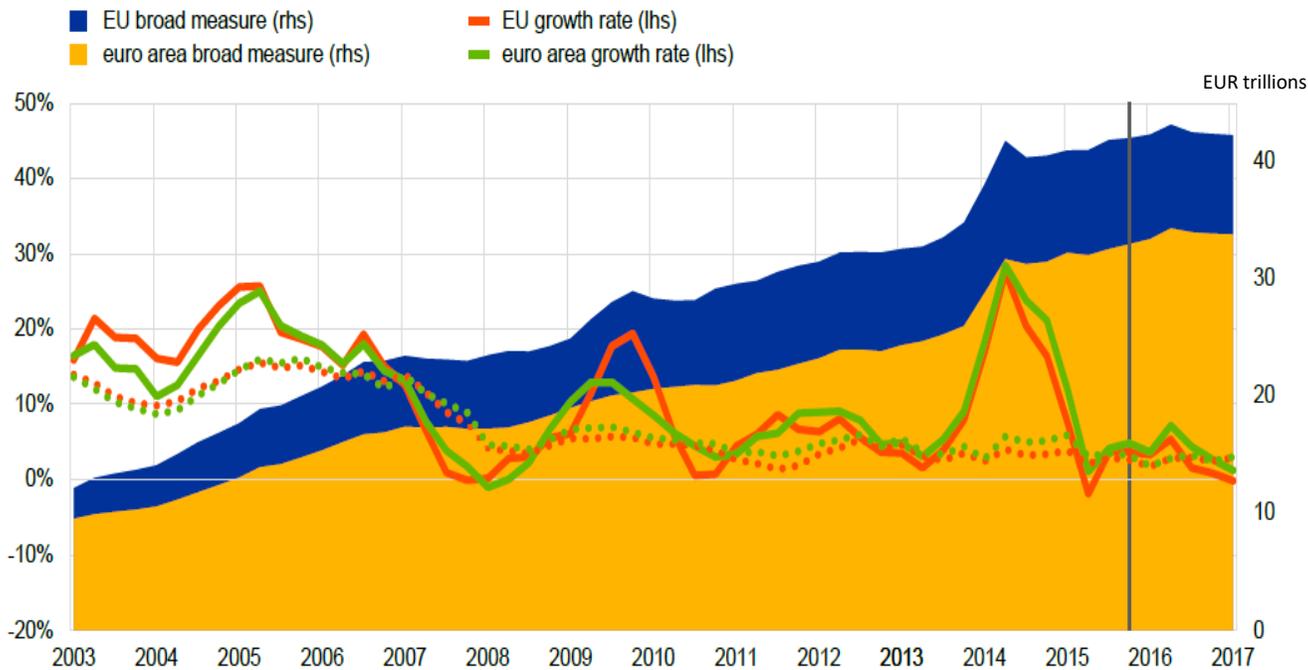


I. From Financial sector to Shadow Banking

➤ Latest developments



Size of EU and euro area shadow banking system (investment funds and other financial institutions)



Source: ECB and ECB calculations (EU Shadow Banking Monitor, September 2018)

Notes: The continuous lines indicate annual growth rates based on changes in outstanding amounts. The dotted lines indicate annual growth rates based on transactions – i.e. excluding the impact of FX or other revaluations and statistical reclassifications.

“A significant portion of assets held within the EU shadow banking system is concentrated in a few countries that function as international financial centers. These centers account for a larger share than those countries with a more domestically focused financial sector”

“Investment funds represent about one-third of the total assets of the shadow banking system, while entities that come under the category of OFIs account for the remainder”



Outline

I. From Financial sector to Shadow Banking (general concepts, definition, overview)

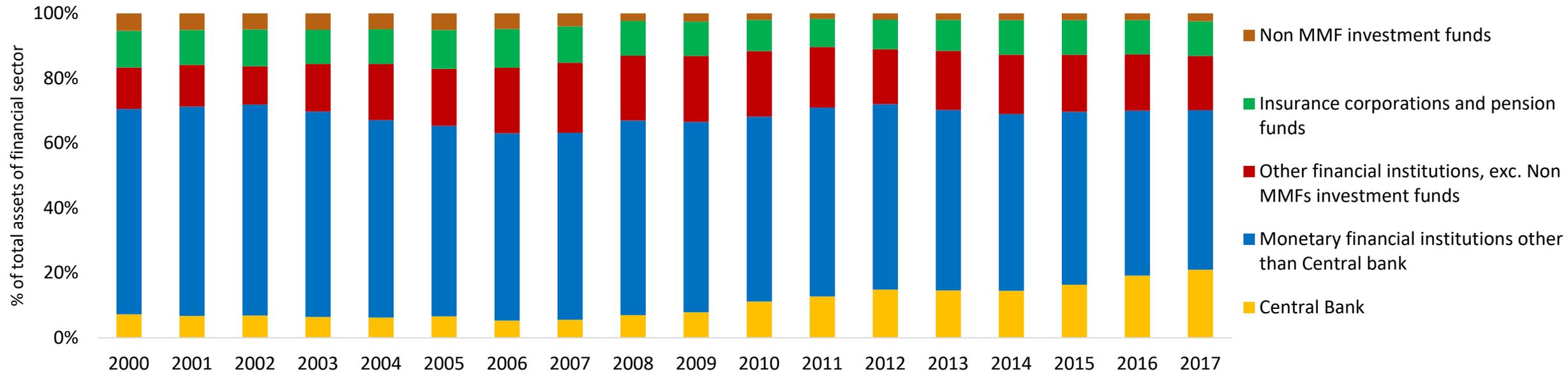
II. MUNFI and Shadow Banking

III. Wrap-up



II. MUNFI and Shadow Banking

➤ Portugal: Development of the financial sector



Source: OECD Financial accounts data;

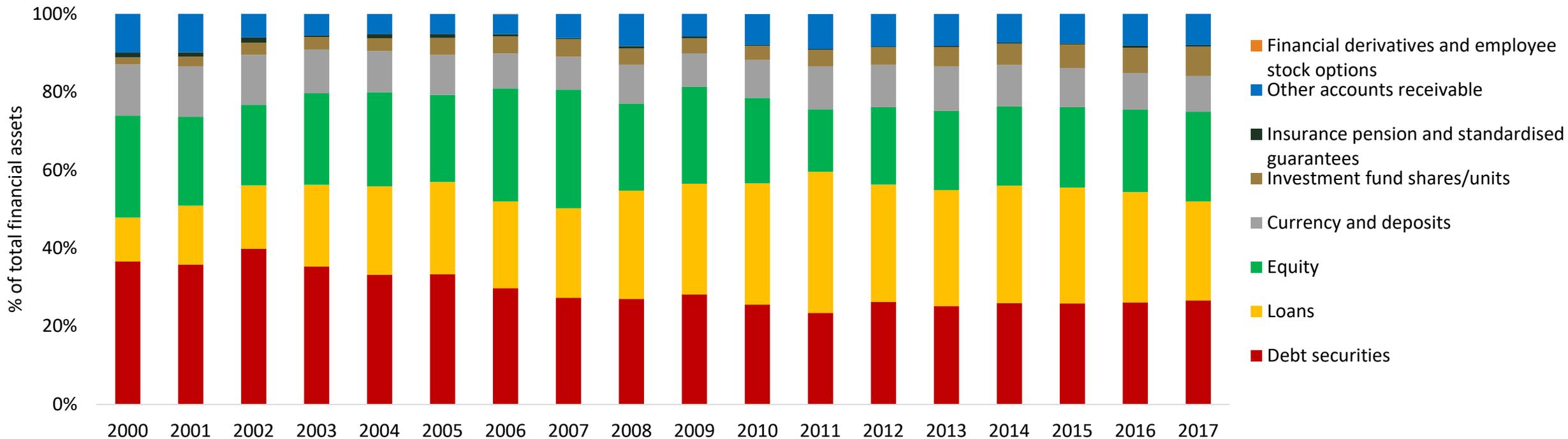
Notes: Consolidated total financial assets for each sector. MFIs includes MMFs investment funds.

- Monetary financial institutions other than Central bank has kept his relative importance in the Portuguese financial structure
- Non-bank financial institutions have kept their weight around 30% over the years
- Central Bank has been increasing his relative importance in the last few years due to the Asset Purchase Program led by ESCB



II. MUNFI and Shadow Banking

➤ Portugal: Breakdown of financial assets of MUNFI institutions



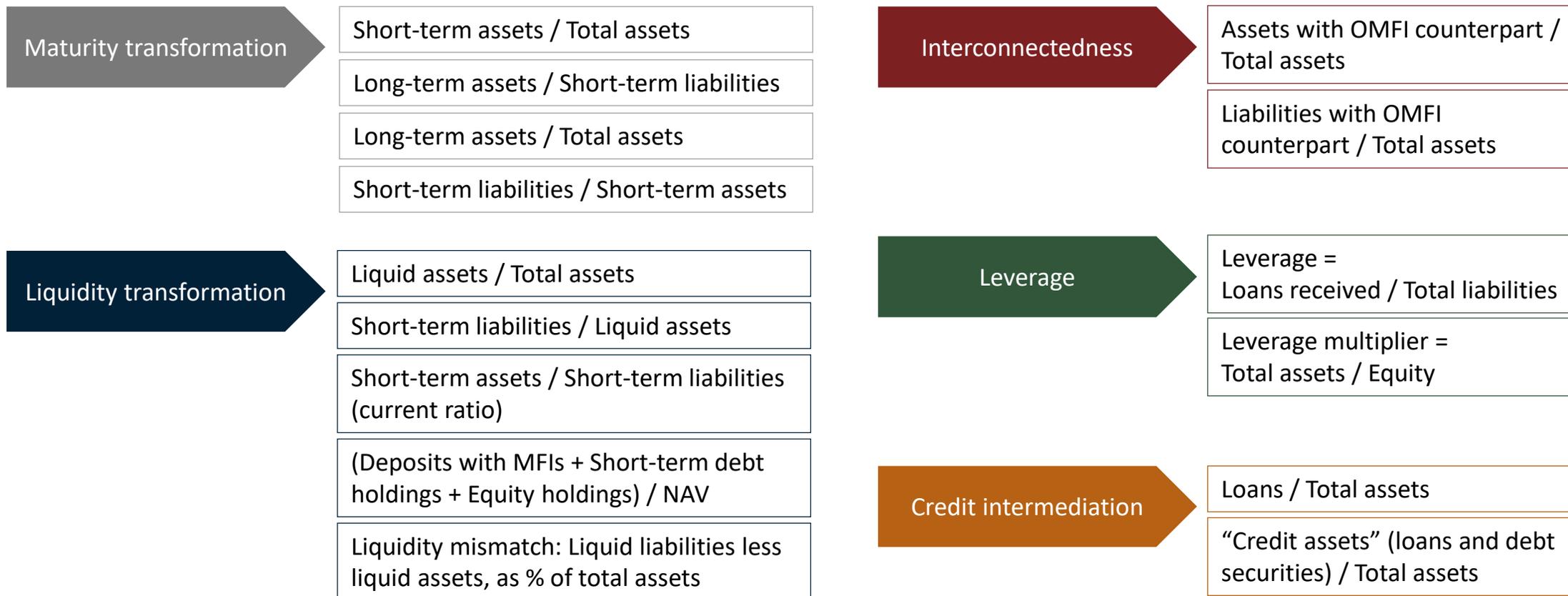
Source: OECD Financial accounts data;

- The expansion of loans in the MUNFI portfolio is justified by FVC engaged in securitisation operations, SPE and Holdings engaged in intragroup and external financing
- Debt securities is the financial asset with more relative weight in the MUNFI portfolio, mainly supported by Insurance Corporations and Pension Funds



II. MUNFI and Shadow Banking

➤ Risk measures – ESRB indicators

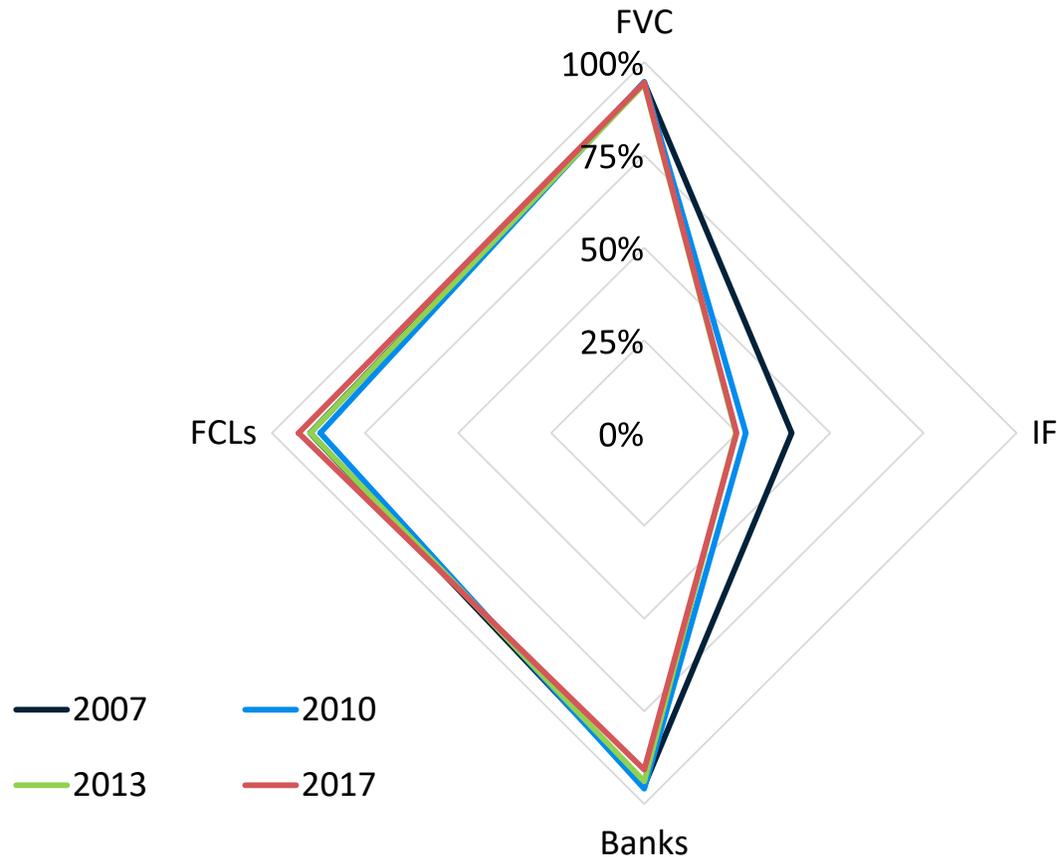


II. MUNFI and Shadow Banking

Credit intermediation

➤ Comparing credit intermediation¹ in Portugal

“Credit assets” (loans and debt securities) / Total assets



Banks, FVC and FCLs have a very stable situation over time, with credit intermediation having an import weight in their activity



The decreasing of credit intermediation ration of IF over time is justified by disinvestment of bond IF in debt securities, mainly in the course of 2008 crisis

Source: OECD Financial accounts data; FVC, IF and FCLs primary statistics data (Banco de Portugal)

Note: 1) Credit intermediation was measured as the ratio of credit assets over total assets. Credit assets comprise loans granted and holdings of debt securities.

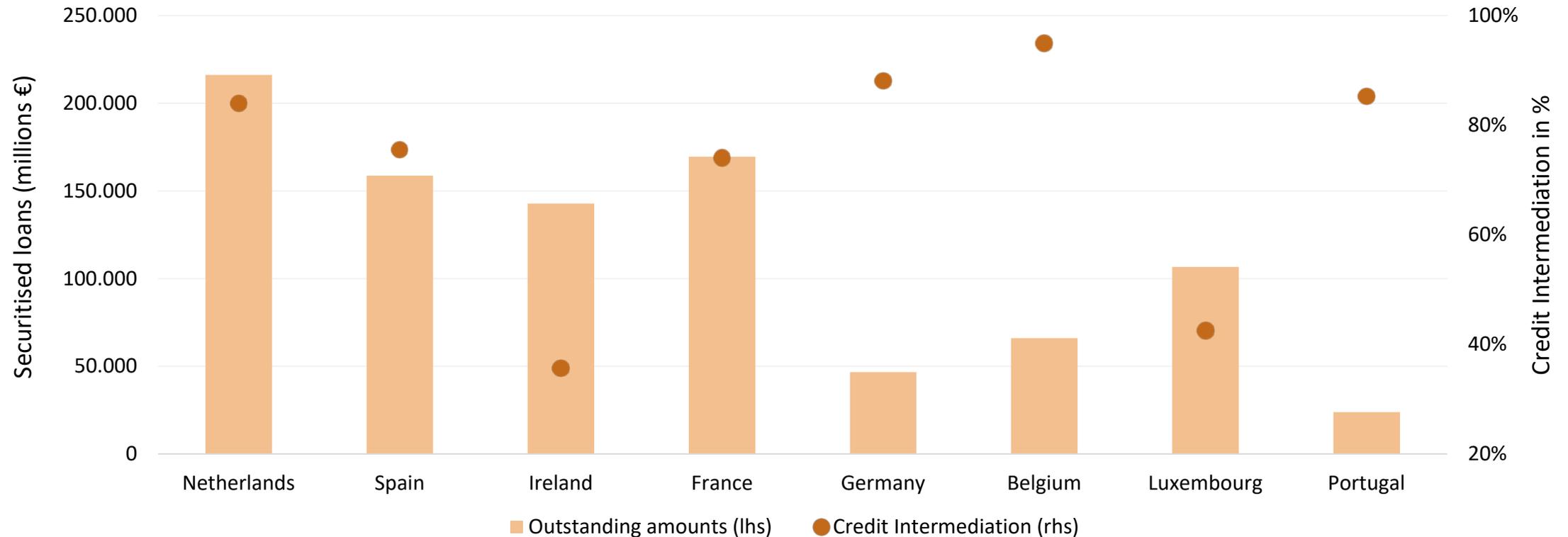


II. MUNFI and Shadow Banking

Credit intermediation

➤ Securitised loans and credit intermediation (FVC at end 2017)

Loans / Total assets

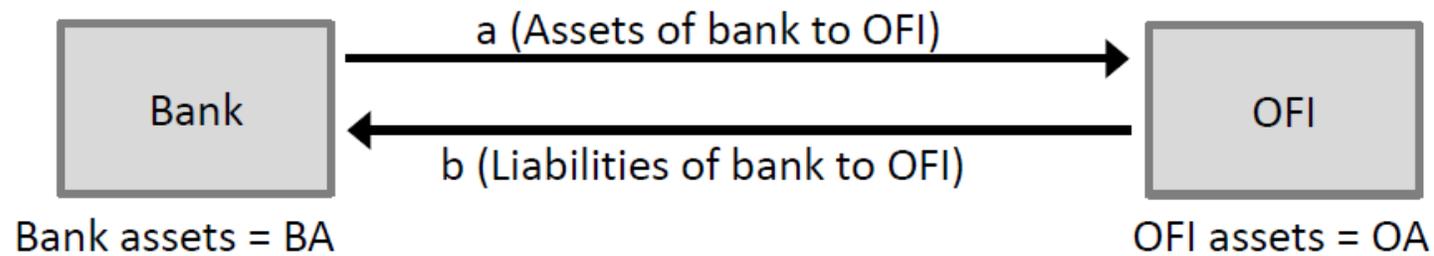


Source: ECB

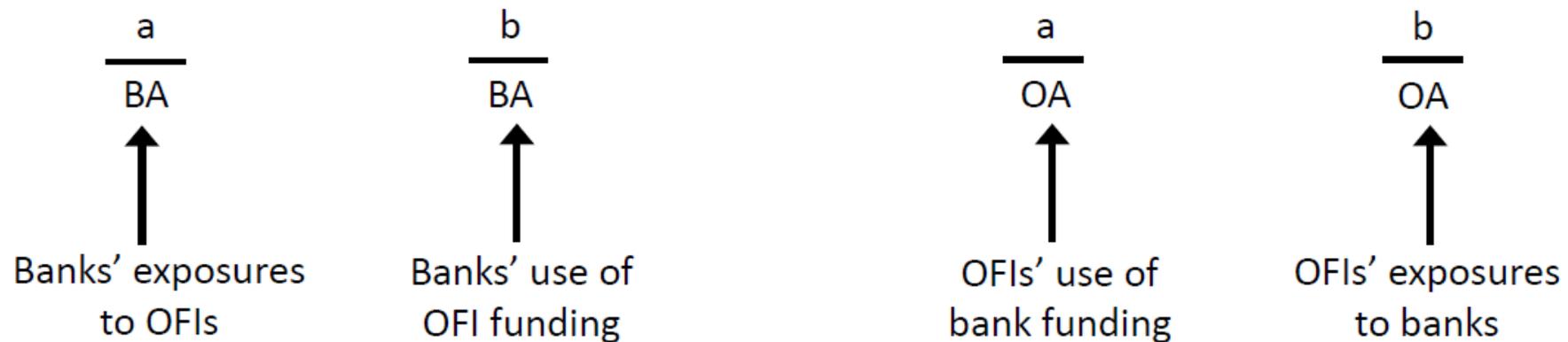
- Most of the countries under analysis have a loans to total assets ratio above 70% in 2017
- Ireland's FVC are increasing diversity in business models, including nursing home receipts, royalties and life settlements



➤ Interlinkages: A risk analysis framework of interconnectedness between banks and OFIFA



High-level interconnectedness measures:



Source: Global Shadow Banking Monitoring Report 2017, FSB

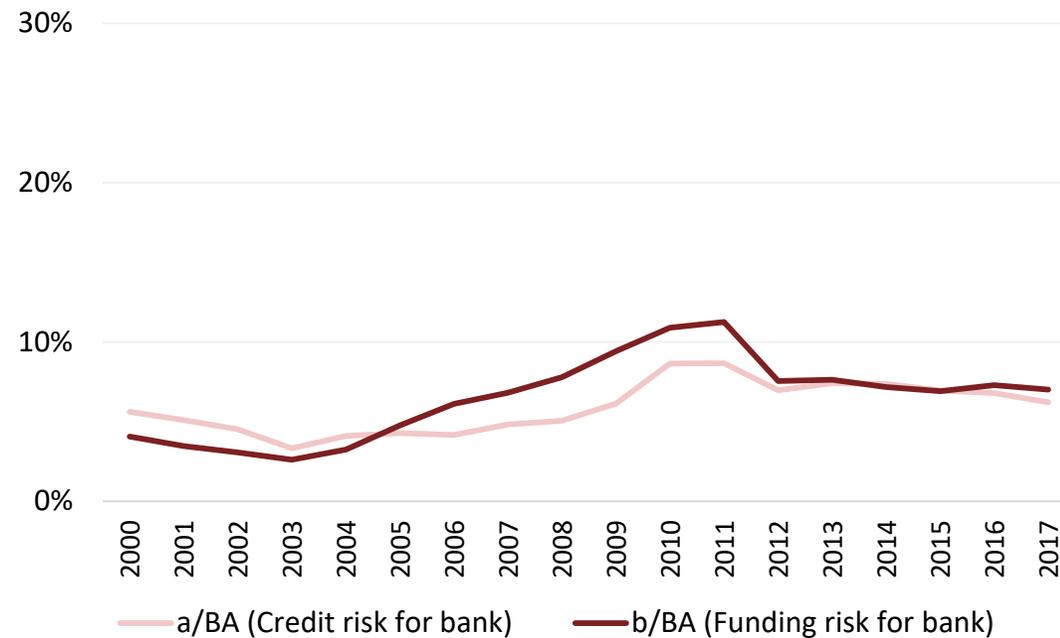


II. MUNFI and Shadow Banking

➤ Interlinkages: A risk analysis framework of interconnectedness between banks and OFIFA for Portugal

Banks

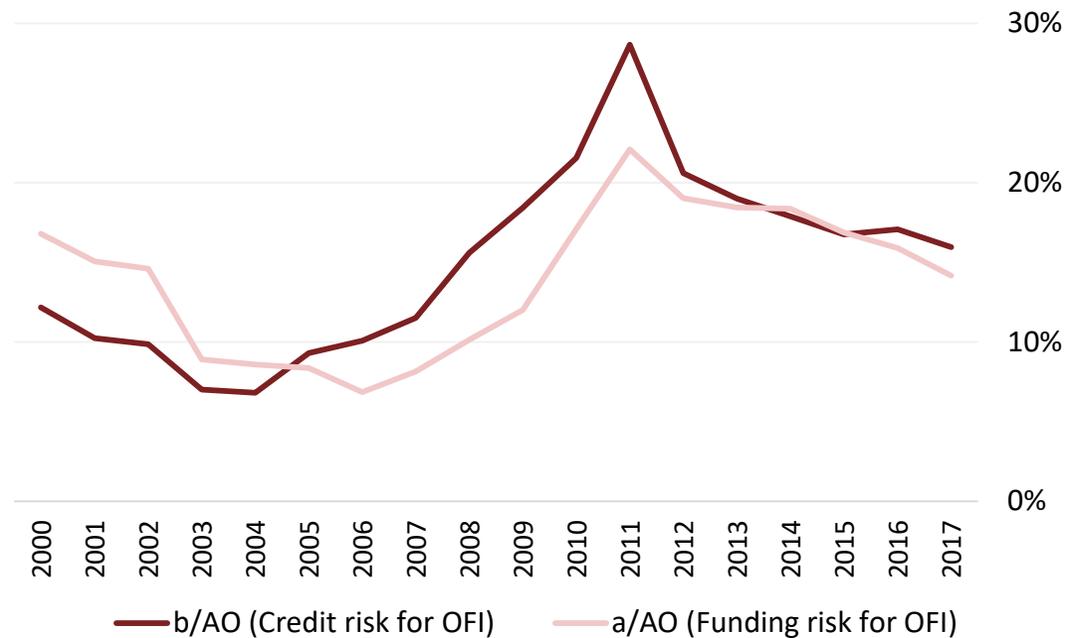
Interconnectedness risks for banks (% of bank assets)



Source: Financial accounts data for Portugal (Banco de Portugal)

OFIFA

Interconnectedness risks for OFIFA (% of OFIFA assets)



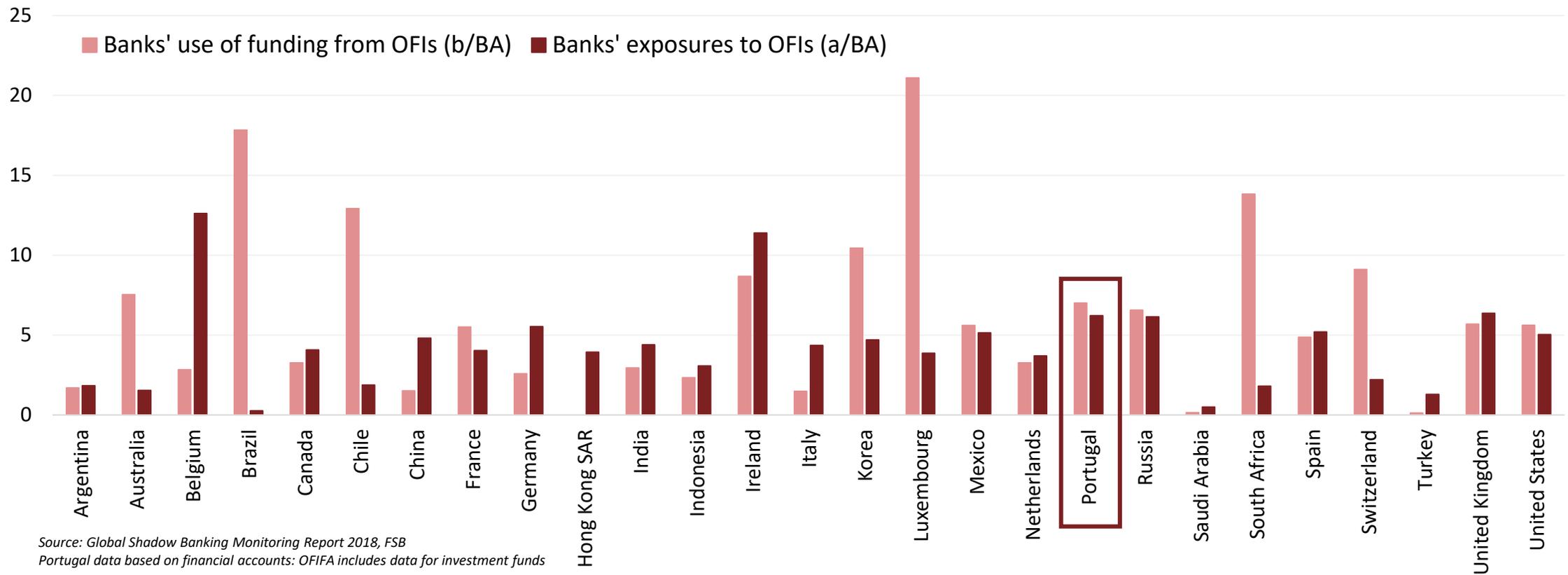
► The interconnectedness between Banks and OFIFA is explained by a significant amount of securitised loans that took place in 2007-2011 period



II. MUNFI and Shadow Banking

➤ Interlinkages: A risk analysis framework of interconnectedness between banks and OFIFA

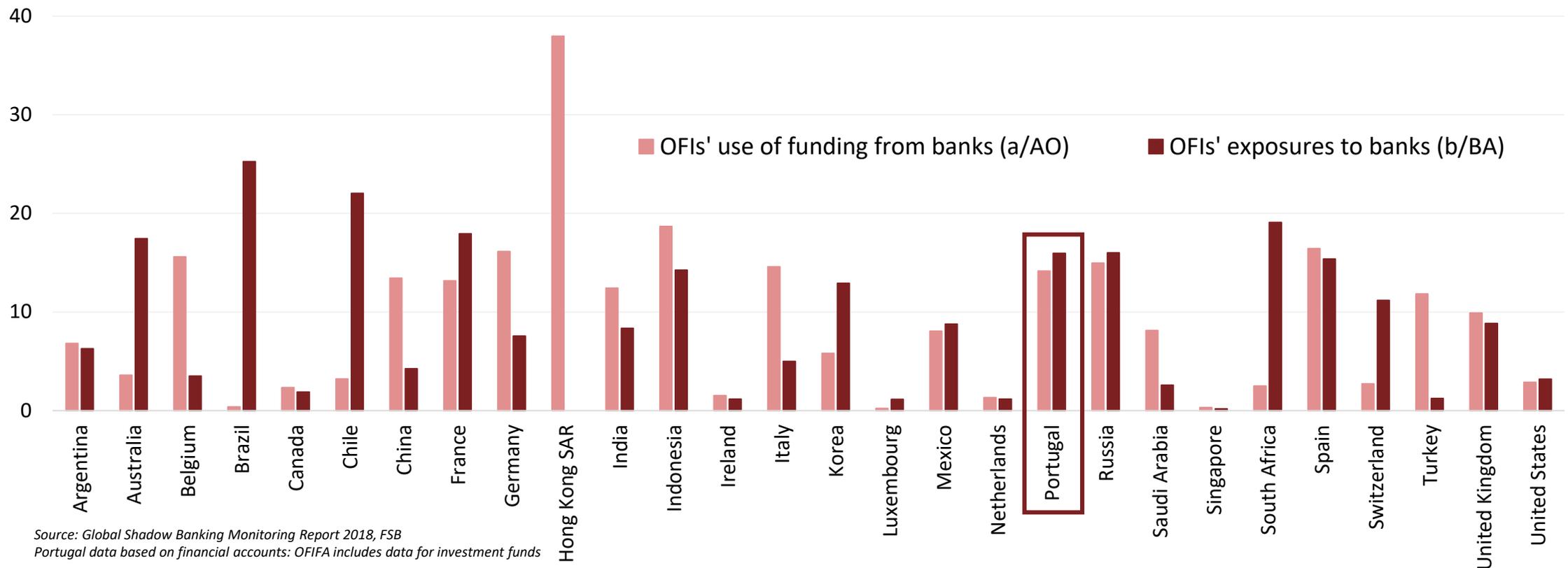
Banks' interconnectedness with OFIs as % of bank assets at end-2017



II. MUNFI and Shadow Banking

➤ Interlinkages: A risk analysis framework of interconnectedness between banks and OFIFA

OFIs' interconnectedness with banks as % of OFIs assets at end-2017

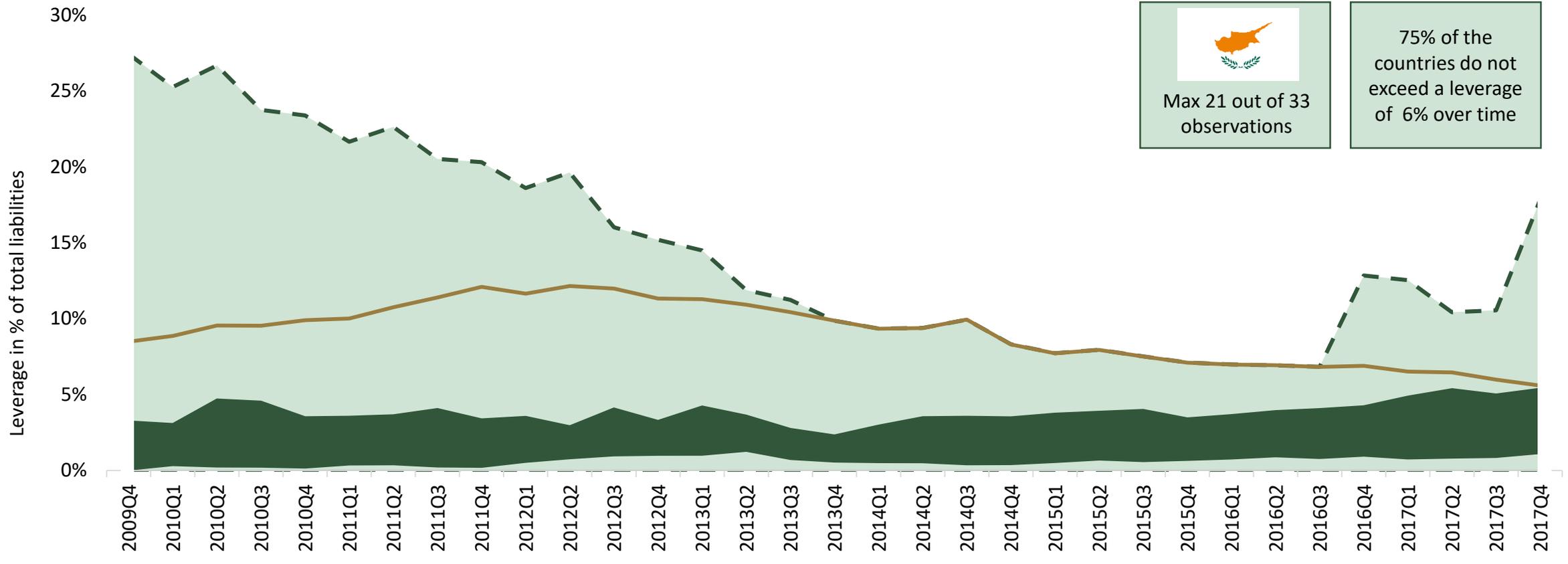


II. MUNFI and Shadow Banking



➤ Total investment funds' leverage: dispersion measures for european countries

Leverage =
Loans received / Total liabilities




Max 21 out of 33 observations

75% of the countries do not exceed a leverage of 6% over time

Source: ECB; Data for 22 European countries
Note 1: Adapted from Agresti and Brence (2017),
Statistical work on shadow banking: development of new datasets and indicators for shadow banking

 Interquartile range  Portugal  Maximum

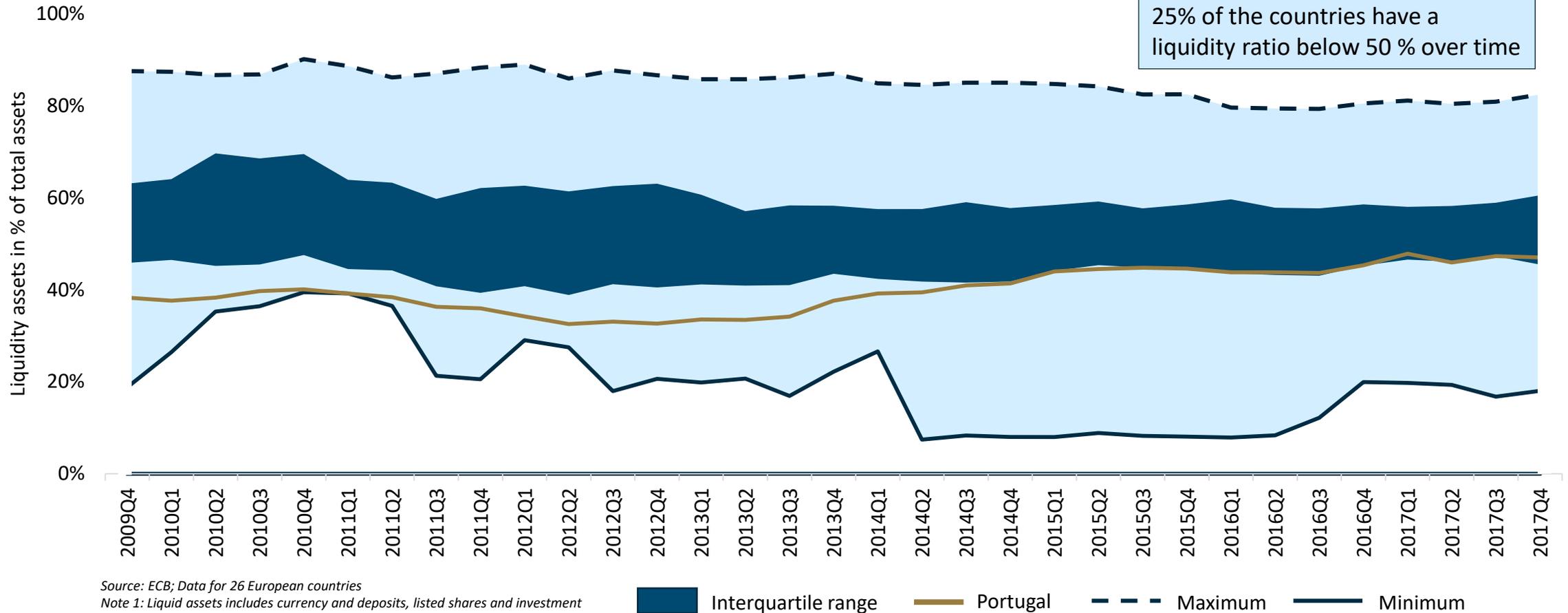


II. MUNFI and Shadow Banking

Liquidity transformation

➤ Total investment funds' liquidity: dispersion measures for european countries

Liquid assets / Total assets



25% of the countries have a liquidity ratio below 50% over time

Source: ECB; Data for 26 European countries

Note 1: Liquid assets includes currency and deposits, listed shares and investment funds shares

Note 2: Adapted from Agresti and Brence (2017),

Statistical work on shadow banking: development of new datasets and indicators for shadow banking

■ Interquartile range — Portugal - - - Maximum — Minimum

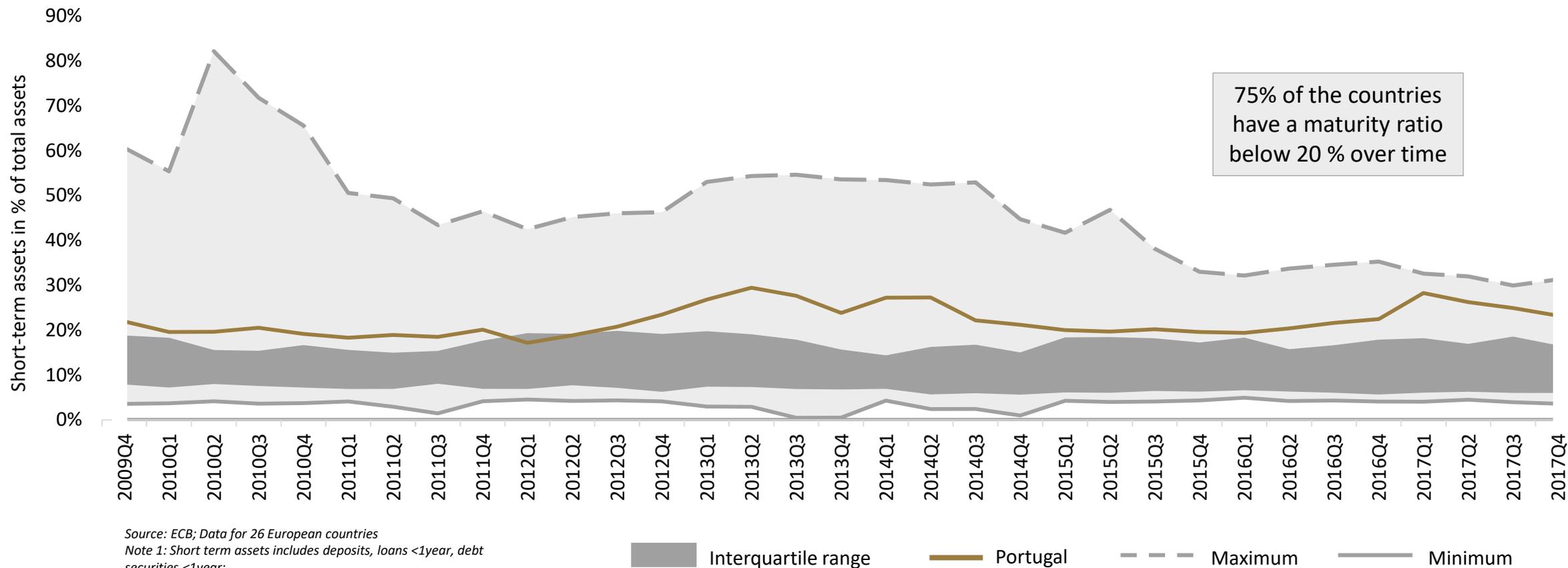


II. MUNFI and Shadow Banking

Maturity transformation

➤ Total investment funds' maturity: dispersion measures for european countries

Short-term assets / Total assets



Source: ECB; Data for 26 European countries

Note 1: Short term assets includes deposits, loans <1year, debt securities <1year;

Note 2: Adapted from Agresti and Brence (2017),

Statistical work on shadow banking: development of new datasets and indicators for shadow banking

Interquartile range Portugal Maximum Minimum



II. MUNFI and Shadow Banking

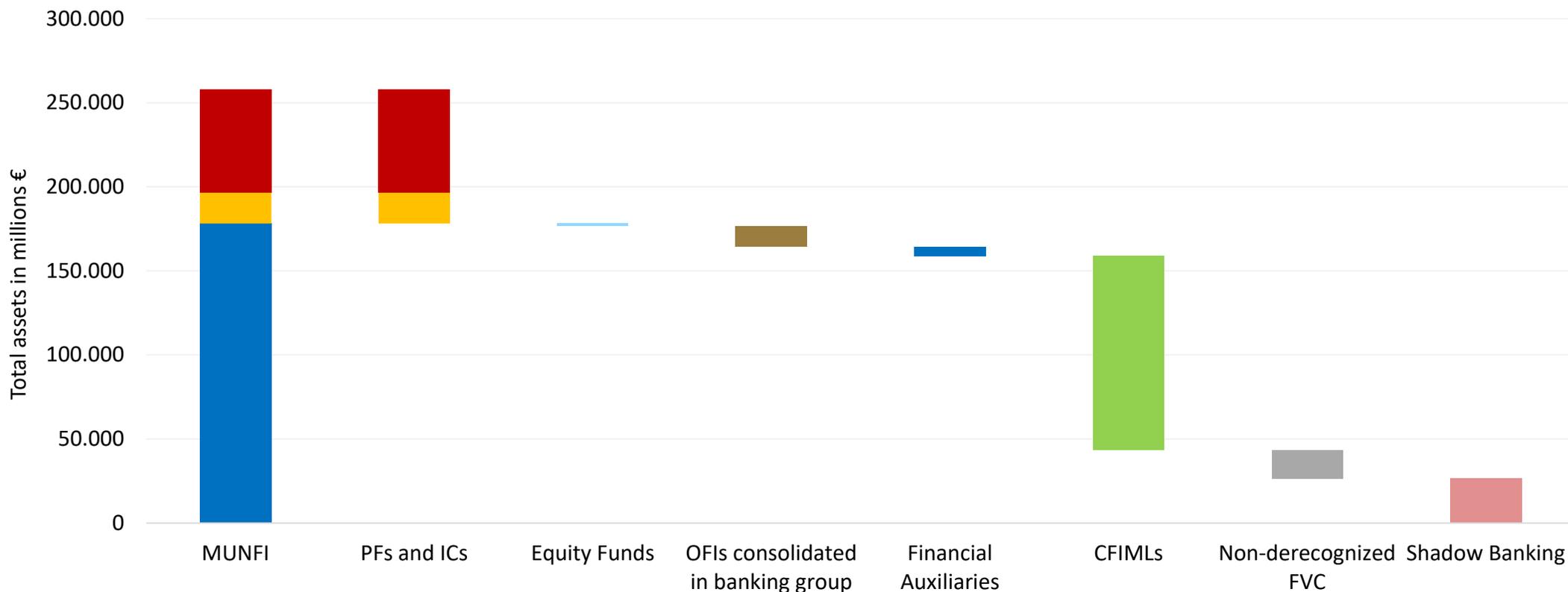
➤ FSB approach: Narrow measure of shadow banking based in 5 economic functions

Economic Function	Definition	Typical entity types
EF1	Management of collective investment vehicles with features that make them susceptible to runs	Fixed income funds, mixed funds, credit hedge funds, real estate funds
EF2	Loan provision that is dependent on short-term funding	Finance companies, leasing companies, factoring companies, consumer credit companies
EF3	Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets	Broker-dealers
EF4	Facilitation of credit creation	Credit insurance companies, financial guarantors, monolines
EF5	Securitisation-based credit intermediation and funding of financial entities	Securitisation vehicles



II. MUNFI and Shadow Banking

➤ FSB approach: Moving from MUNFI to the narrow measure to Portugal (end of 2017)



Source: Primary statistics, BdP Statistics Department
 Note 1: CFIMLs – Captive Financial Institutions and Money Leders
 Note 2: Adapted from Global Shadow Banking Monitoring Report 2018, FSB



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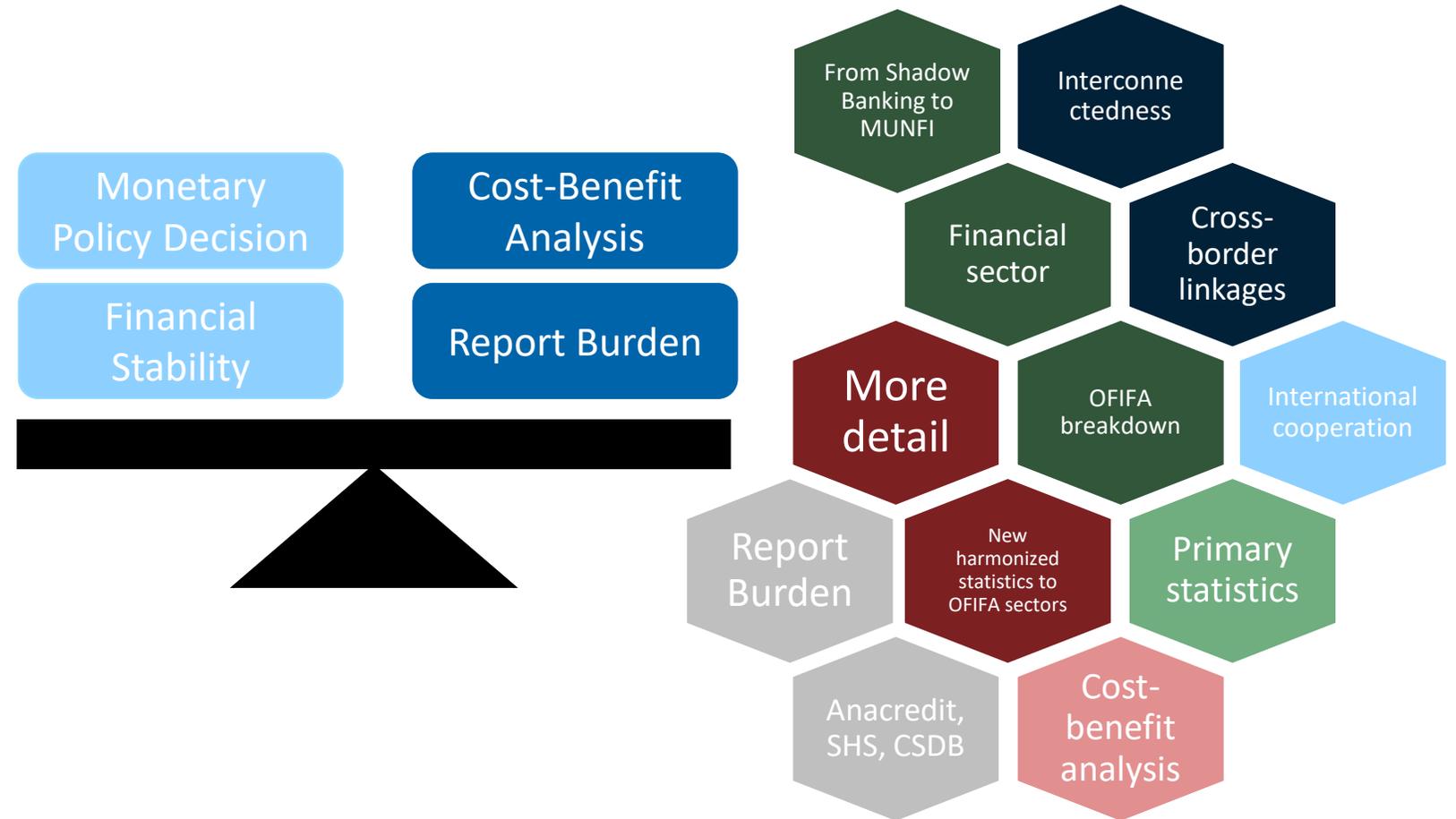
II. MUNFI and Shadow Banking

III. Wrap-up



III. Wrap-up

➤ Challenges



Thank you for your attention

Questions ?



IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Financial accounts and balance sheets as a co-ordinating framework for monitoring financial developments¹

Peter van de Ven,
OECD

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



FINANCIAL ACCOUNTS AND BALANCE SHEETS AS A CO-ORDINATING FRAMEWORK FOR MONITORING FINANCIAL DEVELOPMENTS

Workshop on the Use of Financial Accounts
Istanbul, March 18 – 20, 2019

Peter van de Ven
Head of National Accounts, OECD



Introduction



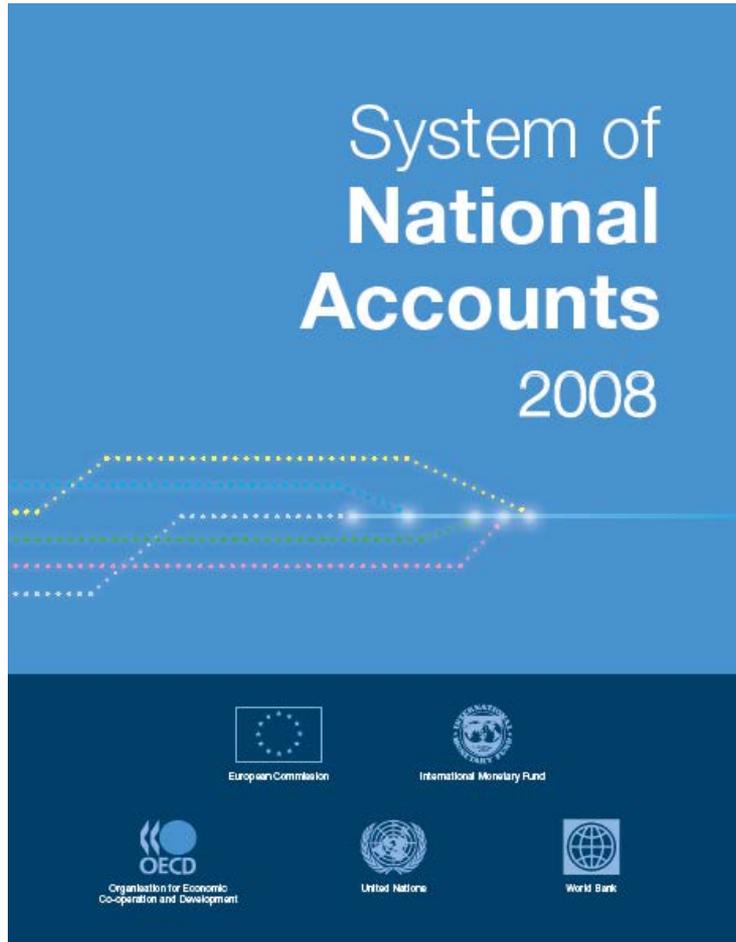


Overview

- Advantages and disadvantages of using sector accounts
- Sector accounts as an organising framework
- Some examples on the use of financial accounts and balance sheets
- An extra???



An expression of love and admiration



I ❤️

National Accounts
She is beautiful,
she is elegant,
she is ...





Advantages (and Disadvantages) of Institutional Sector Accounts



A Snapshot of Sector Accounts

- S11 Non-financial corporations
- S12 Financial corporations
- S13 General government
- S14 Households
- S15 Non-profit institutions serving households
- S2 Rest of the world

<u>Current accounts</u>					
Transaction Accounts					
S11	S12	S13	S14	S15	S2
<u>Production and generation of income</u>					
GDP					
<u>Distribution and use of income</u>					
Net saving					

<u>Accumulation accounts</u>					
Transaction Accounts			Other Flows Accounts		
S11	S12	S13	S14	S15	S2
<u>Capital</u>					
Net Lending/Net borrowing					
<u>Revaluations</u>			<u>Other changes in volume</u>		
Non-financial assets			Non-financial assets		
Financial assets and liabilities			Financial assets and liabilities		
<u>Financial accounts</u>					
Net Lending/ Net borrowing					

Stock Accounts					
S11	S12	S13	S14	S15	S2
<u>Opening balance sheet</u>					
Non-financial assets				Net worth	
Financial assets and liabilities					

Stock Accounts					
S11	S12	S13	S14	S15	S2
<u>Closing balance sheet</u>					
Non-financial assets				Net worth	
Financial assets and liabilities					

Non-Financial accounts

Financial accounts

Opening stocks	+	Transactions	+	Other changes	=	Closing Stocks
----------------	---	--------------	---	---------------	---	----------------



Why Having Sector Accounts?



- Provides a **macro-economic overview** of financial developments:
 - for the **whole economy**
 - **all economic transactions and positions**
 - according to a conceptual framework with a **consistent set of definitions**
- Advantages from a **producer's perspective**:
 - **exhaustiveness** of estimates, detection of gaps
 - **rigour** of a system's approach, **using identities** to improve statistics, and to arrive at a **consistent set of information**:
 - **Budget identity** for each (sub)sector: balance of non-financial transactions = balance of financial transactions
 - **Transaction identity** for each transaction: sum of receipts = sum of payments
 - **Balance sheet identity**: Stocks at end of period = stocks at the start of the period + transactions + revaluations + other changes





Why Having Sector Accounts?

- Advantages from a **user's perspective**:
 - **consistent set of information**
 - **international comparability**
 - **comparability over time** (consistent time series)
 - analysis of **links between sectors**
 - analysis of **links between production, income and finance**
- However ...
 - **viewpoints of economic agents may differ** (e.g. pensions)
 - alternative perspectives (e.g. nationality point of view)
 - growing demand for **granularity** (e.g. distributional data, shadow banking, corporations by ownership, etc., etc.) => **micro-macro linkage** becoming more and more important

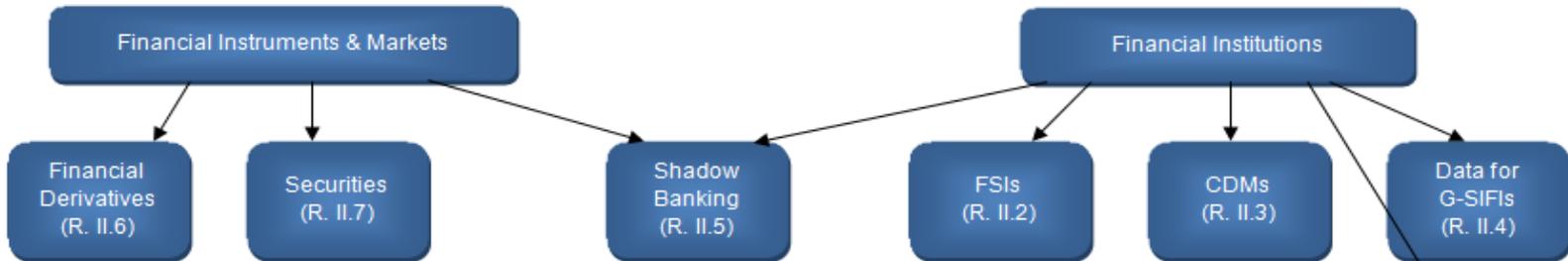


Institutional Sector Accounts as an Organising Framework

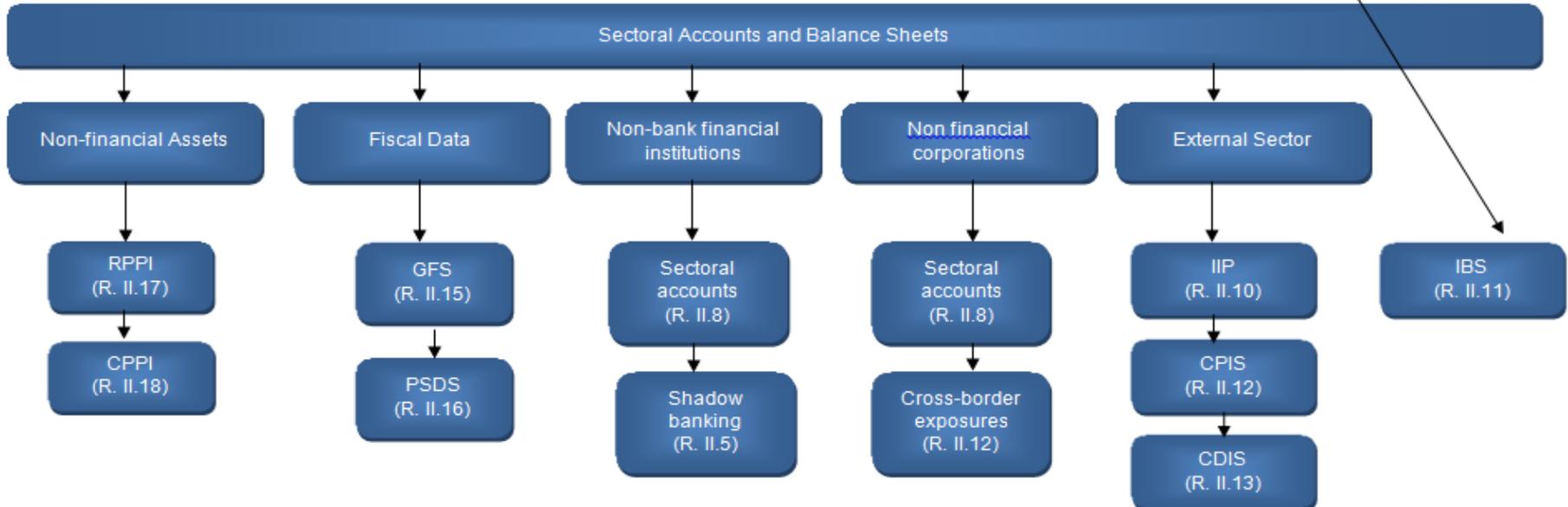


Sector Accounts as an Organising Framework: the G-20 Data Gaps Initiative

I. Monitoring risk in the financial sector



II. Vulnerabilities, Interconnections, and Spillovers





Linking Micro and Macro

- **User demands**

- Quickly evolving
- More specific
- More granular data
- More integrated
- More timely



- Need to quickly adapt => only possible in the case of a **flexible system**, in which statistics are either consistent, or closely linked to each other
- **Typical changes to original source data:**
 - Adjustments to **definitions** (including population)
 - Note BPM6 and GFSM2012 (almost) consistent with SNA 2008/ESA 2010
 - Adjustments for **exhaustiveness**
 - Adjustments for **discontinuity**
 - **Balancing** adjustments
- **Process tables** may enhance linkages, also for users



Some Examples on the Use of Financial Accounts and Balance Sheets



Developments within financial corporations

Monetary Financial Institutions (MFIs) versus Other Financial Intermediaries (OFIs) in the USA, 1990-2017

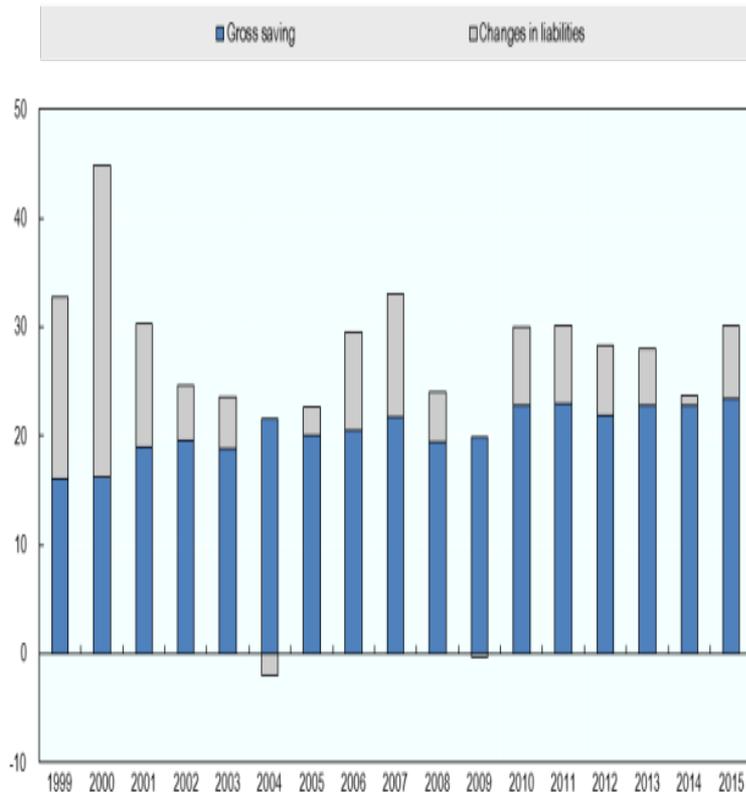




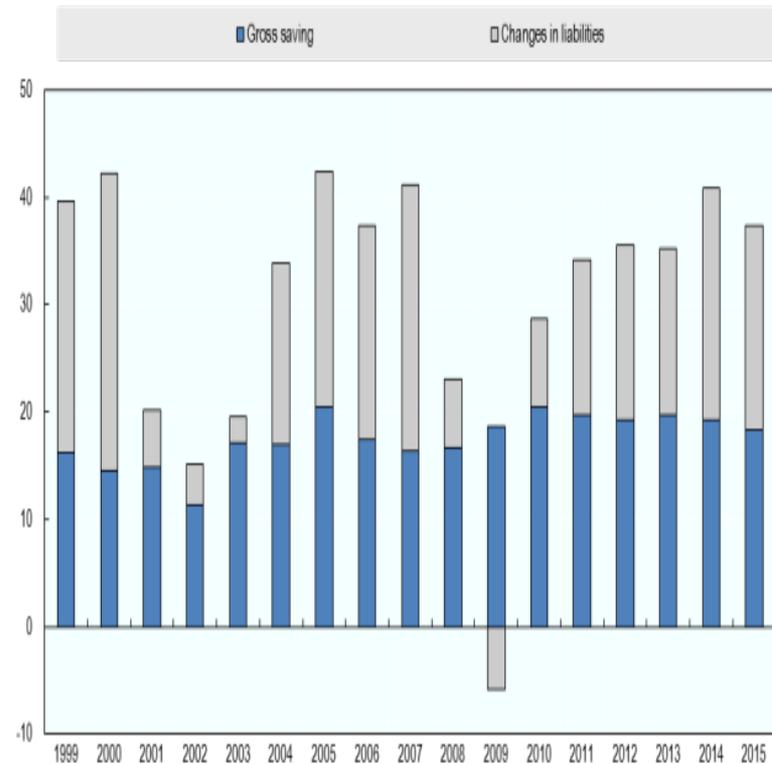
Internal and external sources of funding for non-financial corporations

Internal sources (gross saving) and external sources (change in liabilities) of funds of non-financial corporations in Germany and USA, 1999 – 2015

Germany



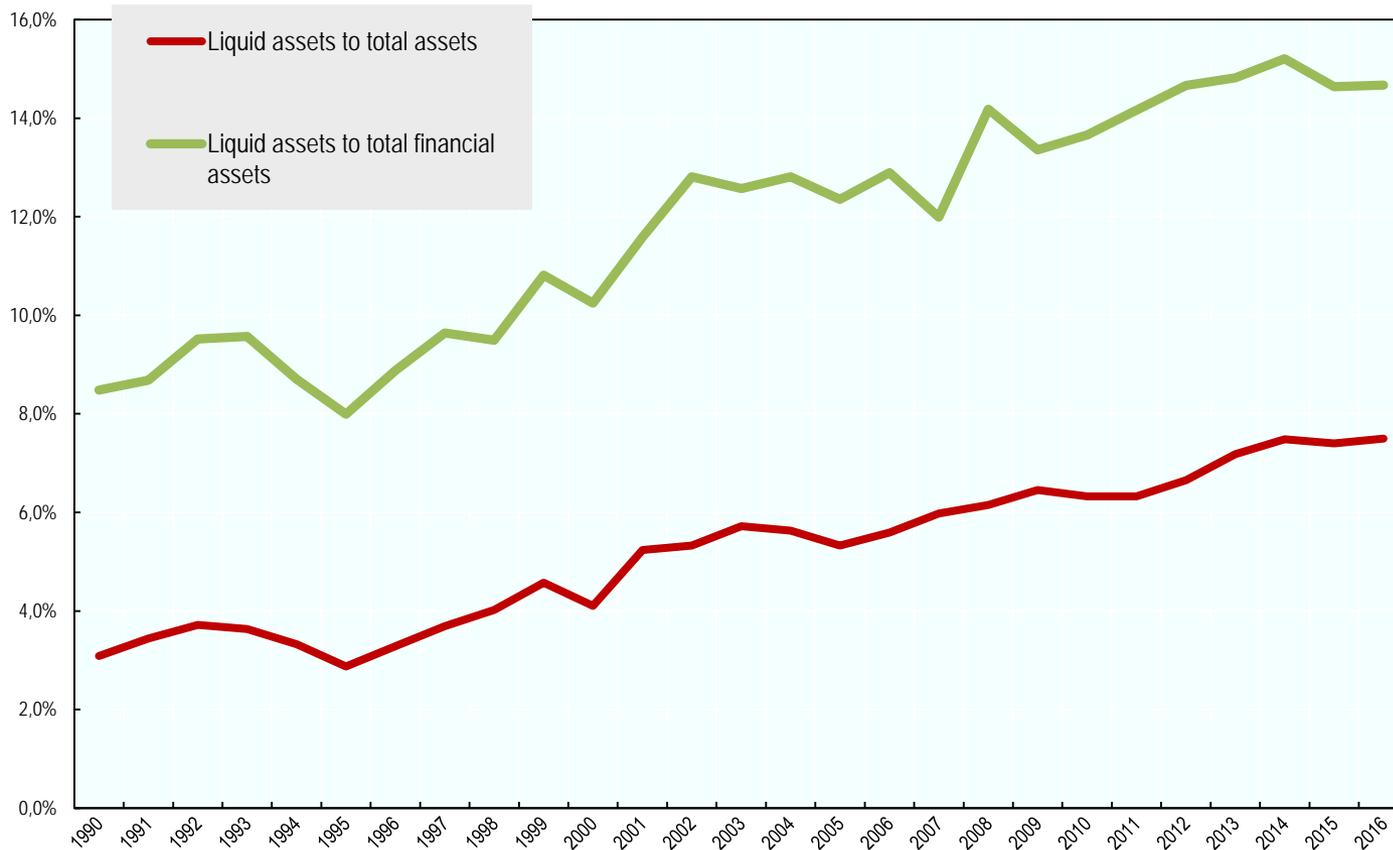
USA





Liquid assets of non-financial corporations

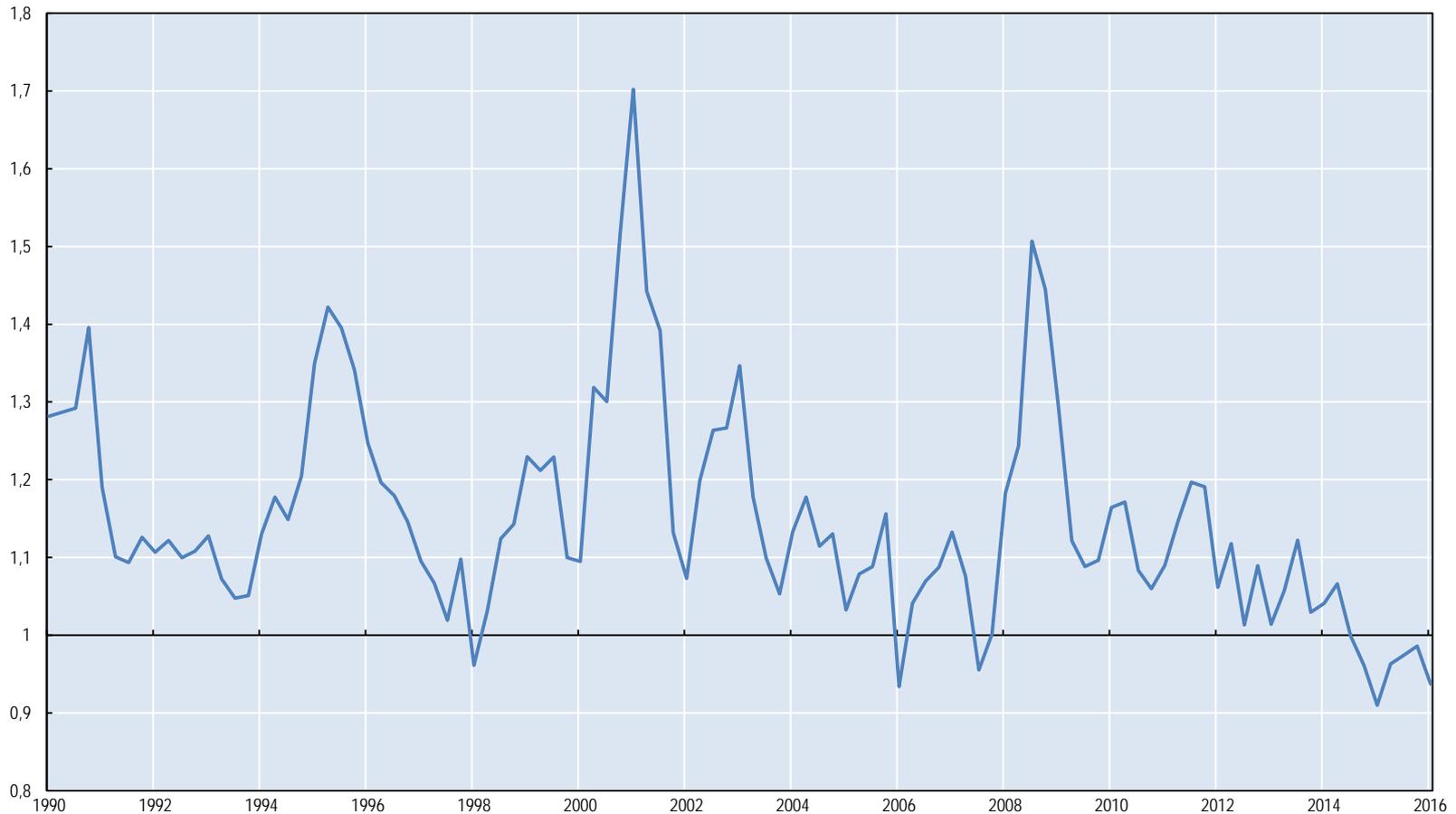
Liquid assets of Canadian non-financial corporations, 2000 – 2016





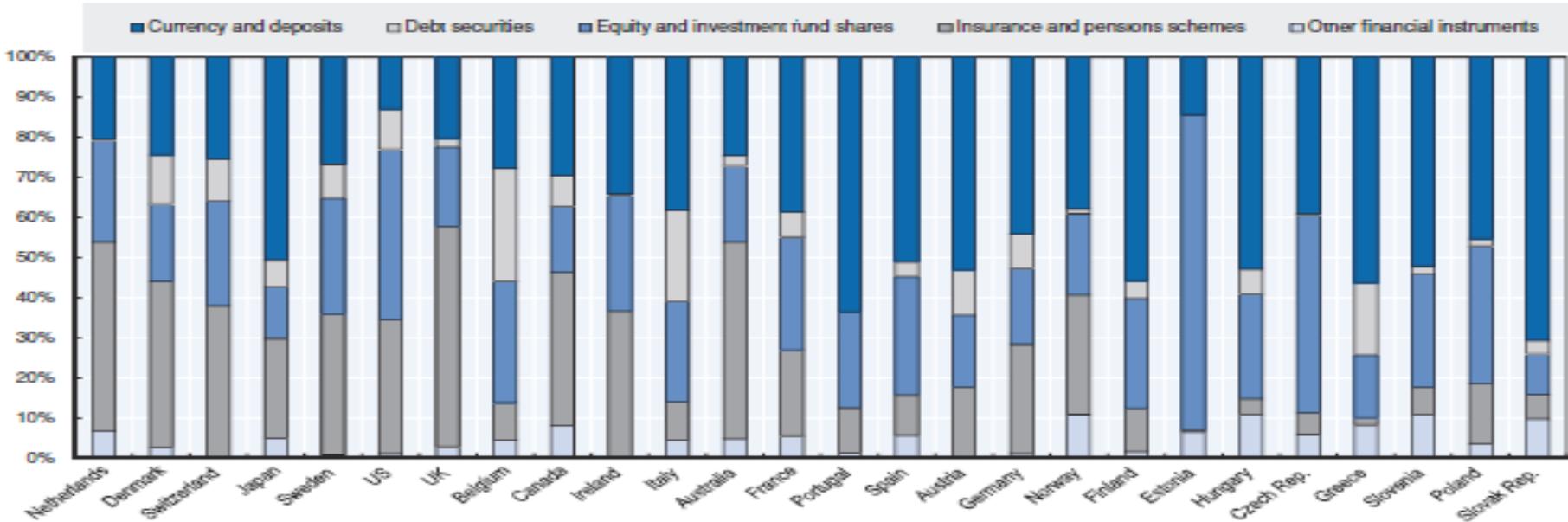
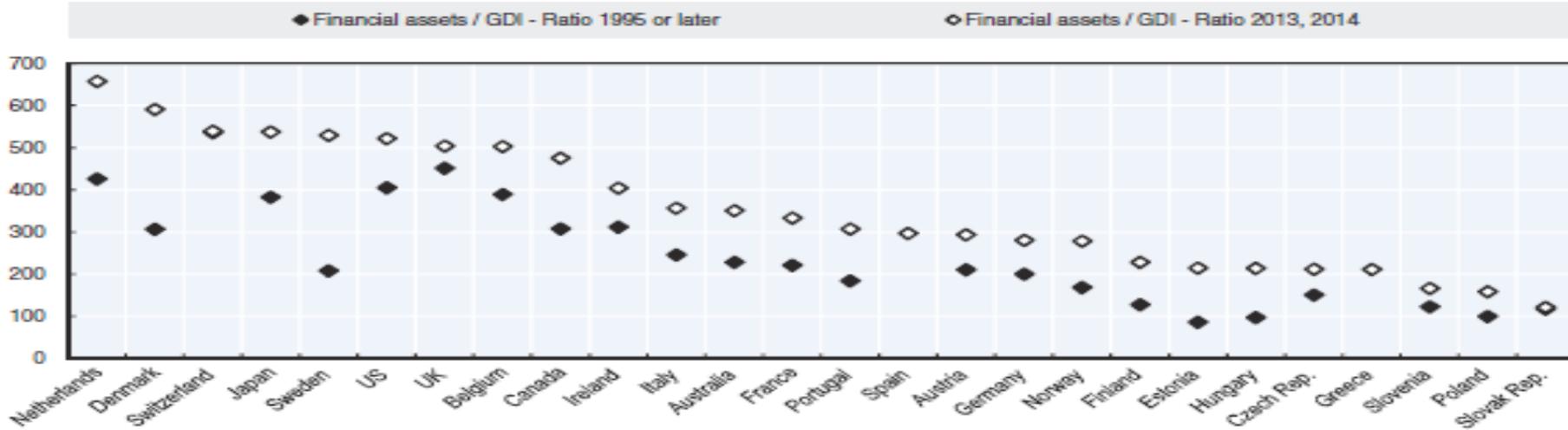
Tobin's q for non-financial corporations

Tobin's q for the non-financial corporations' sector in Canada, 1990 – 2016





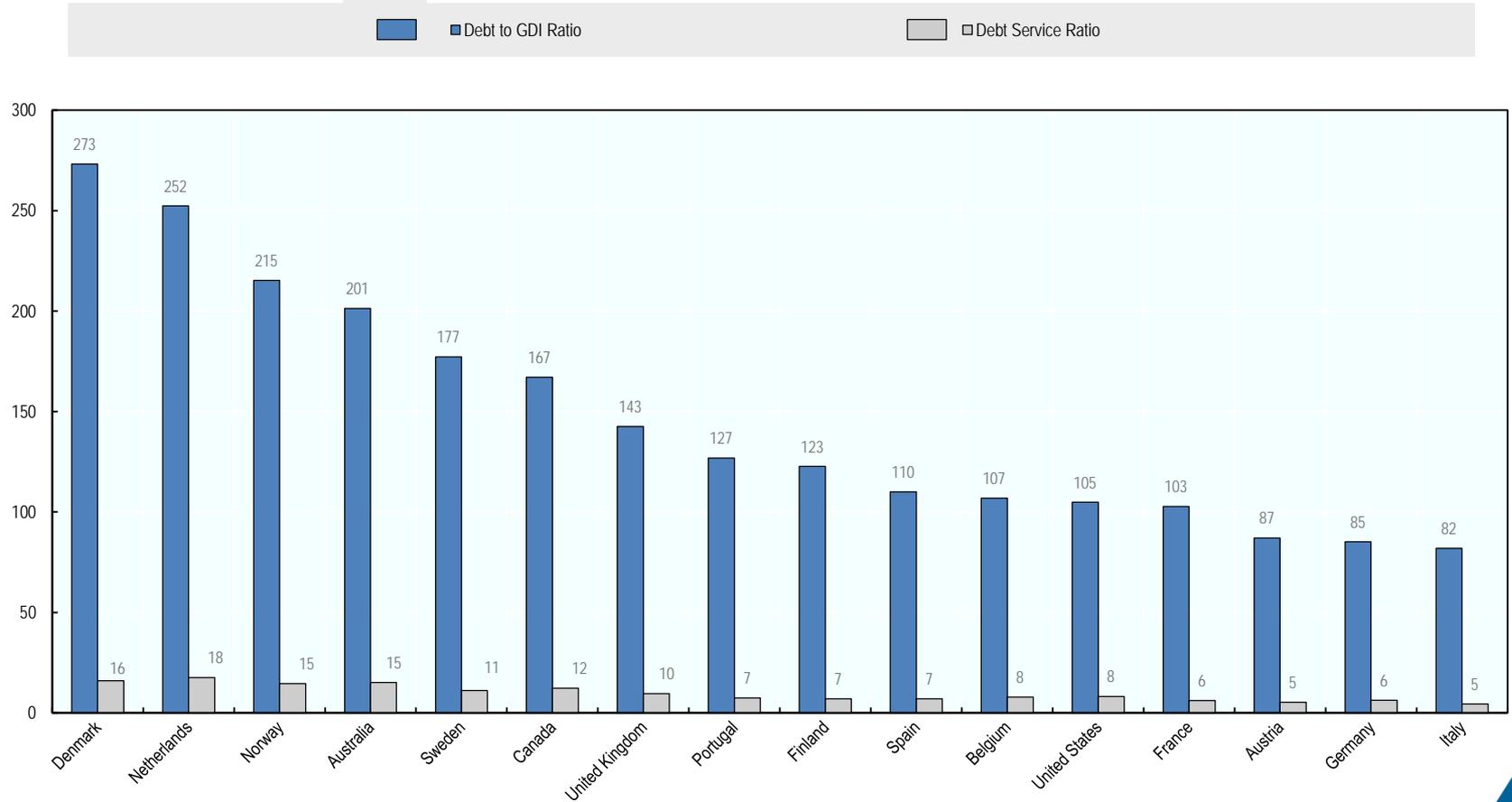
Level and composition of households' financial assets





Debt and debt service of households

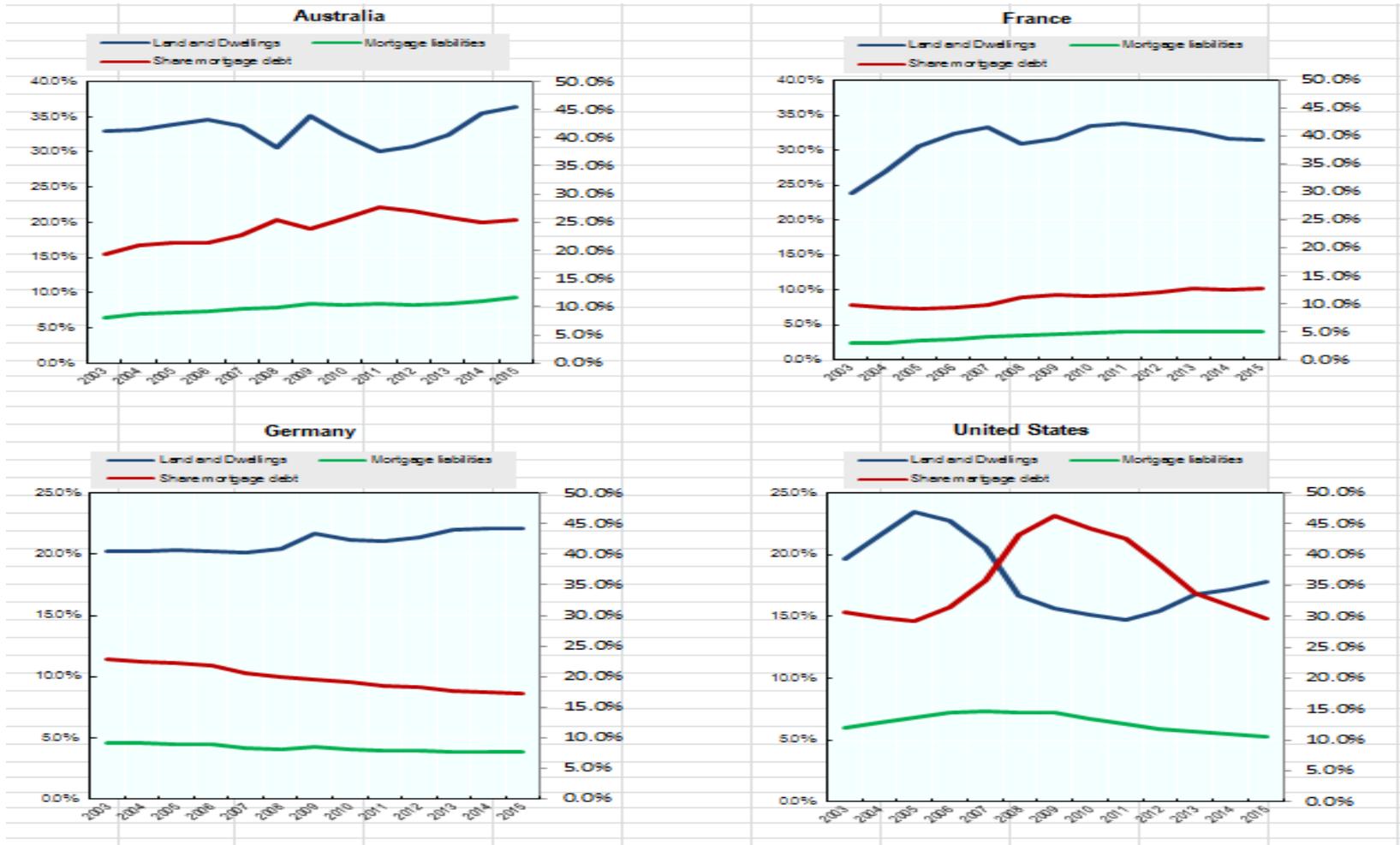
Debt and debt service ratios of households (% of disposable income) in OECD countries, 2016





Dwellings versus mortgage debt of households

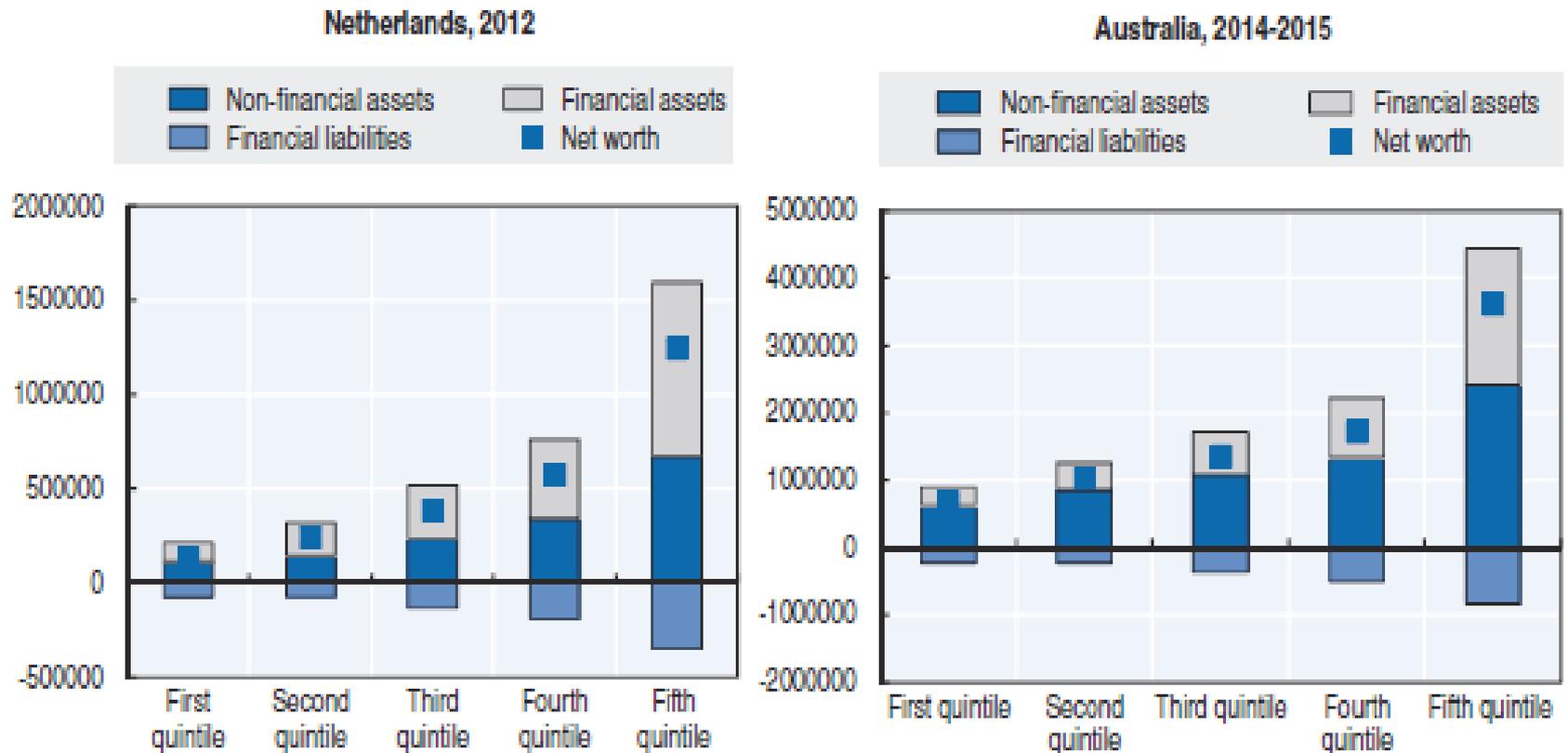
Dwellings (including underlying land) versus mortgage loans, 2003 – 2015





Future needs: distributional data

Figure 8.6. **Wealth inequalities/indebtedness across household groups**
Percentage of household disposable income





Government debt: beware of the definition!

Table 6.3. Consolidated gross government debt for Canada at nominal value, 31 December 2016

Percentage of GDP

	Central government	General government	Public sector
Narrow*	35.1	77.8	90.9
Wide excl. IPSGS*	39.0	97.2	112.4
Wide*	47.1	114.2	129.4

* The narrow definition covers only currency and deposits, loans, and debt securities. The wide definition includes all debt instruments recognised by the 2008 SNA, excluding financial derivatives. The wide measure excluding IPSGS refers to the wide measure excluding insurance, pensions, and standardised guarantee schemes.



Debt and net (financial) worth of general government

Government Balance Sheets, 2015

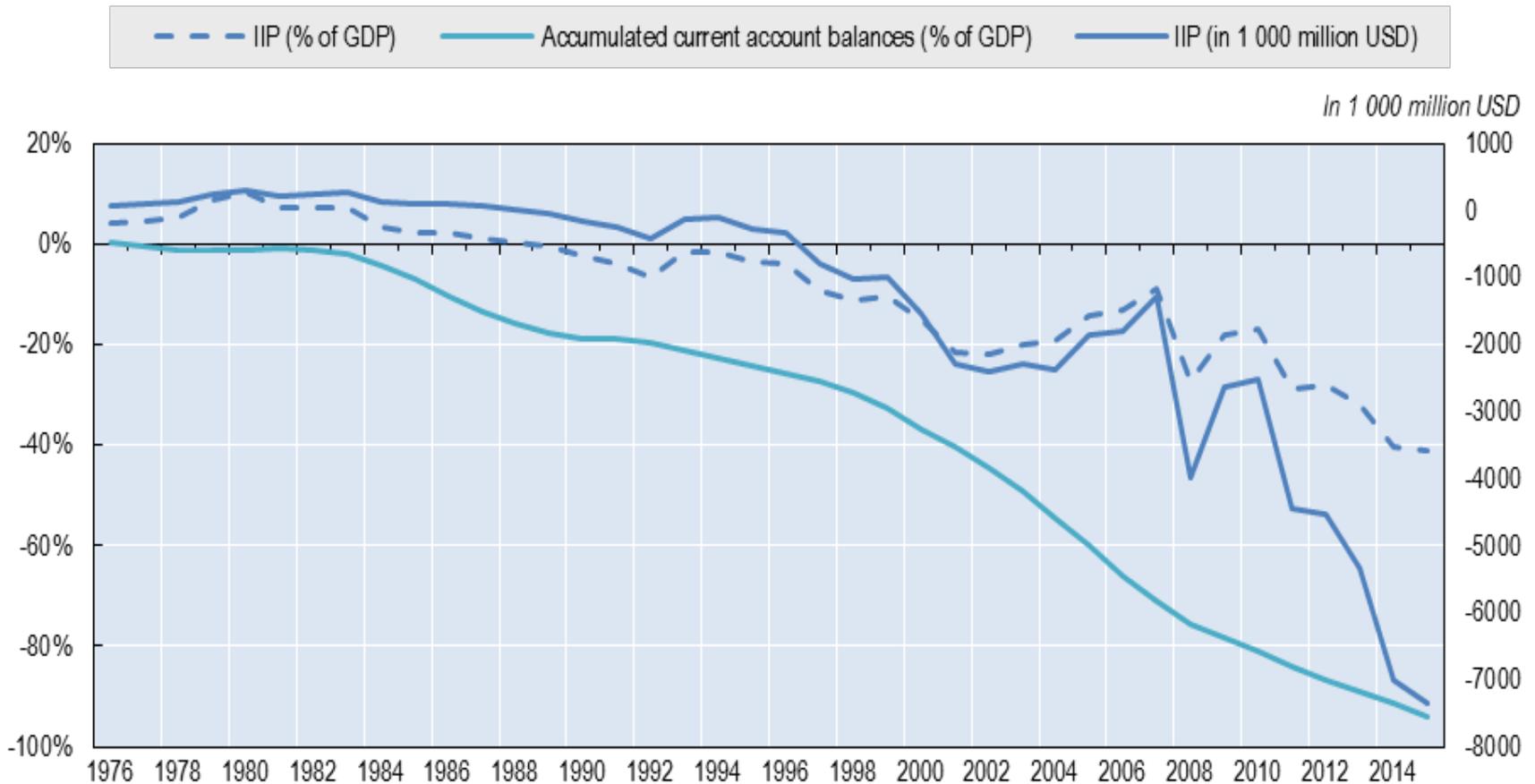
	Australia		France		Germany		United States	
	Australian dollar, billions	Percentage of GDP	Euro, billions	Percentage of GDP	Euro, billions	Percentage of GDP	US dollar, billions	Percentage of GDP
Total fixed assets	655	39.6	1,156	52.7	1,338	44.1	12,340	68.4
Dwellings	11	0.7	60	2.7	28	0.9	399	2.2
Non-residential buildings	516	31.2	328	14.9	1,139	37.6	5,404	30.0
Other structures *	n.a.	n.a.	612	27.9	n.a.	n.a.	4,425	24.5
Machinery and equipment	100	6.0	68	3.1	93	3.1	972	5.4
Intellectual property products	29	1.8	88	4.0	78	2.6	1,140	6.3
Land	322	19.5	726	33.1	454	15.0	n.a.	n.a.
Other non-produced assets	1,035	62.5	12	0.5	n.a.	n.a.	n.a.	n.a.
Including pension liabilities								
Gross government debt	1,127	68.1	2,639	120.3	2,365	78.0	23,698	131.4
Net financial worth	-167	-10.1	-1,659	-75.6	-1,296	-42.7	-18,190	-100.9
Net worth (excluding non-produced assets)	488	29.5	-503	-22.9	42	1.4	-5,850	-32.4
Excluding pension liabilities								
Gross government debt	722	43.6	2,639	120.3	2,365	78.0	19,729	109.4
Net financial worth	238	14.4	-1,659	-75.6	-1,296	-42.7	-14,221	-78.8
Net worth (excluding non-produced assets)	893	54.0	-503	-22.9	42	1.4	-1,881	-10.4

* For Australia and Germany, other structures are included in non-residential buildings.



Development of US external position

US external position, 1976 – 2015



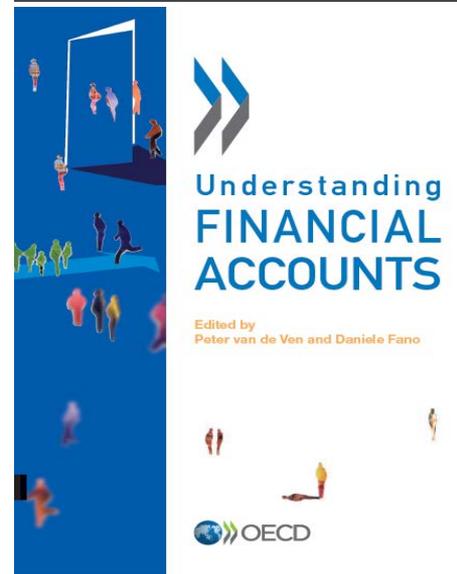
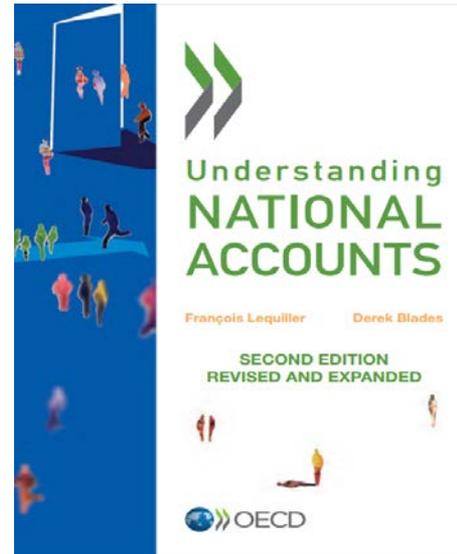


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Understanding Financial Accounts

- **Understanding National Accounts**
 - 1st edition: 2006
 - 2nd edition: 2014
 - Translated in Chinese and Spanish
- **Understanding Economic Statistics** (2008)
- **Understanding Financial Accounts**
- <https://mdequeljoe.github.io/statsday/>





Thank you for your attention!



IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Household wealth in the main advanced countries¹

Diego Caprara, Riccardo De Bonis and Luigi Infante,
Bank of Italy

¹ This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Household wealth in the main advanced countries

Diego Caprara, Riccardo De Bonis, Luigi Infante
Banca d'Italia, DG Economics, Statistics and Research

Workshop on the Use of Financial Accounts, 18-20
March 2019, Istanbul, Turkey

Diego Caprara and Francesco Cusano helped to produce the slides

Motivation

Why is it important to study household wealth?

(i) Consumption is influenced by wealth, non only by income, interest rates, age and other variables: there is a large literature on the **wealth effect** (Poterba 2000, Paiella 2007).

(ii) Household wealth composition provides information on agents' risk aversion (Guiso, Haliassos and Jappelli, 2003), and on the characteristics of the financial system (Goldsmith 1969, De Bonis and Pozzolo 2012): think to the alternative between banks and the Stock Exchange.

(iii) An excessive household debt might have negative consequences for financial stability.

Motivation (*follows*)

(iv) The crisis of public pension schemes and population ageing make the study of wealth accumulation more crucial than in the past.

(v) Well-being depends non only on income but also on wealth (Fitoussi, Sen, and Stiglitz, 2009).

(vi) Piketty (2014) underlined the importance to study the trends of the wealth to income ratio (W/Y), in order to analyze wealth concentration.

Definitions

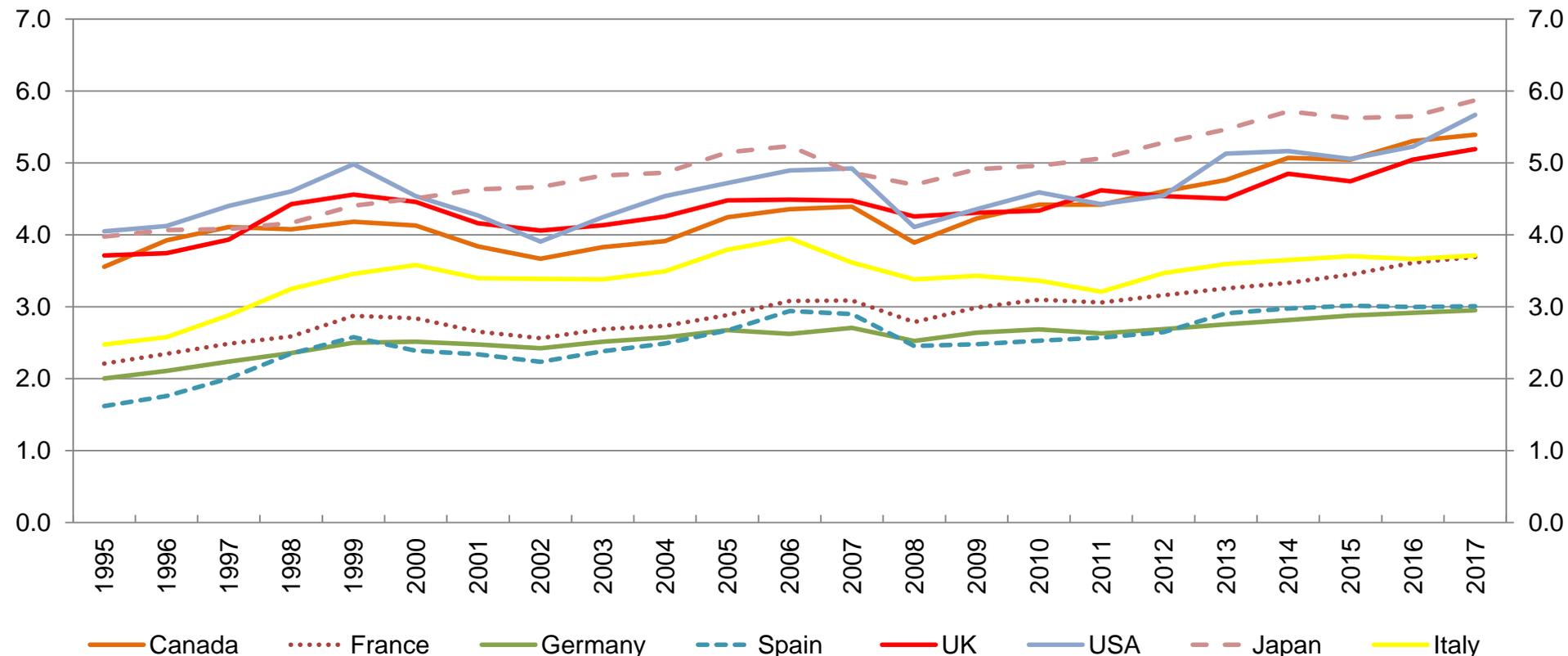
- Following national accounting definitions, household wealth is the sum of financial wealth plus real wealth – largely houses – net of liabilities (mainly made by mortgages and consumer debt).
- According to some economists, human capital should be included in wealth (unconvincing to me).
- Financial wealth includes different assets – currency in circulation and deposits, bonds, shares and other equity, mutual funds, insurance and pension fund products – but not the assets implied by public pension schemes.

Statistical sources

- We focus on household **aggregate** wealth (see www.oecd.org).
- Financial assets and debt are taken from financial accounts, produced by central banks or by institutes of statistics (see van de Ven and Fano, 2017).
- The measurement of real wealth is not harmonized across countries; the quality of these statistics is lower than that of financial accounts.

Financial wealth is greater in the USA, the UK, Japan and Canada than in euro area countries

(1995-2017; ratios of financial assets to disposable income)



Factors that influence the ratio W/Y

- (i) Higher direct and indirect participation to financial markets.
- (ii) Weak public pension schemes in the UK and the US explain high household investments in private insurance and pension fund products.
- (iii) Substitution or complementarity with real wealth: look at the Spanish case.
- (iv) Different weight of price effects vs financial flows.

Do changes in wealth depend on price effects or from financial flows?

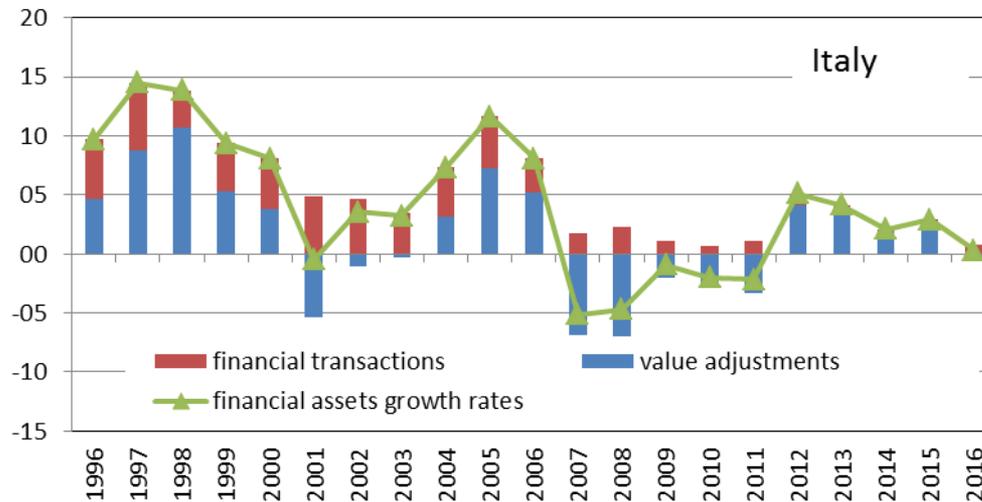
FA: financial assets; P= price effects (value adjustments) ; F=financial flows (transactions)

The link between stocks and flow is the following:

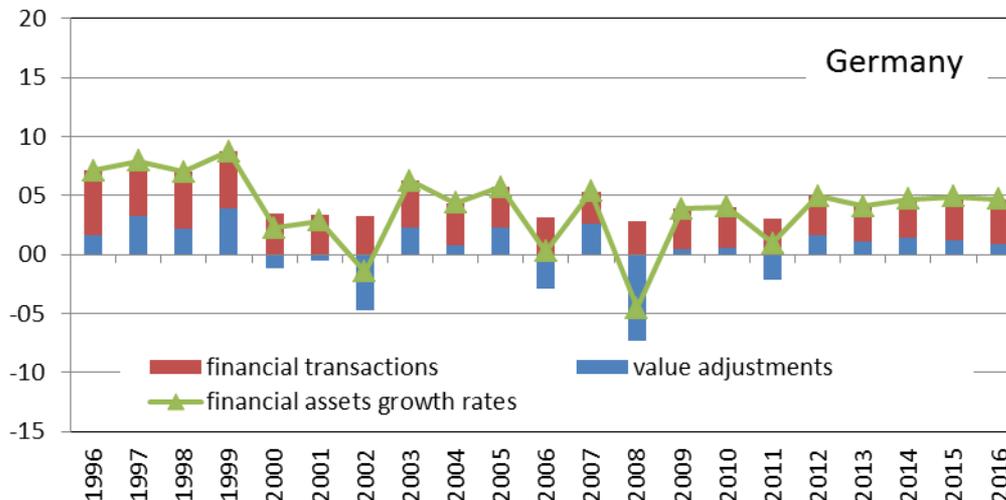
$$FA_t = FA_{t-1} + P_t + F_t$$

$$\frac{FA_t}{FA_{t-1}} - 1 = \frac{P_t}{FA_{t-1}} + \frac{F_t}{FA_{t-1}}$$

Price effects (blue) and financial flows (red) in Italy and Germany

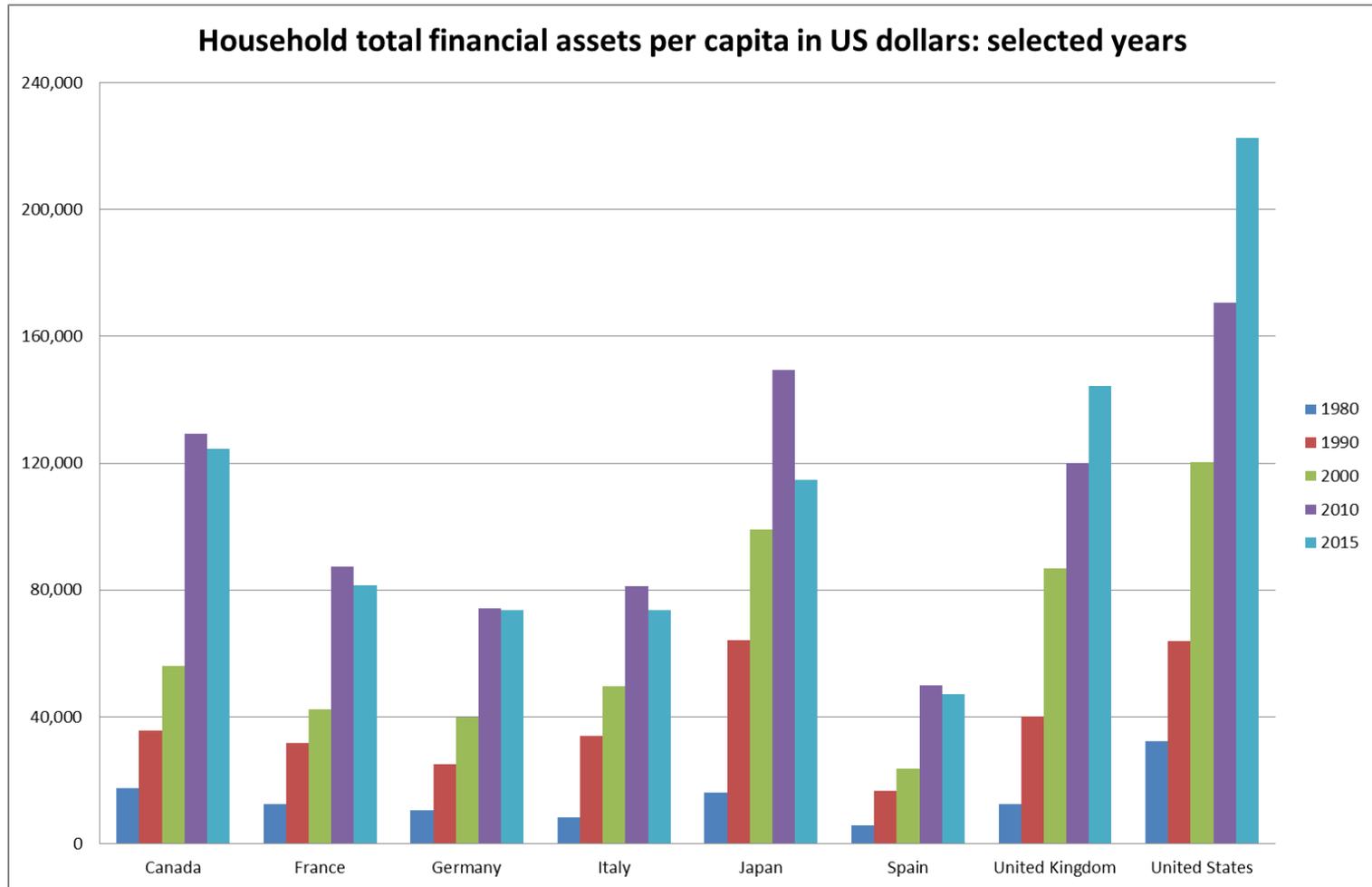


In Italy price effects were greater than financial flows.



In Germany price effects were smaller than financial flows.

Financial wealth per capita also increased



The composition of household financial wealth confirms the existence of different capitalisms

Household financial assets in the main advanced countries (2017)

(percentage composition)

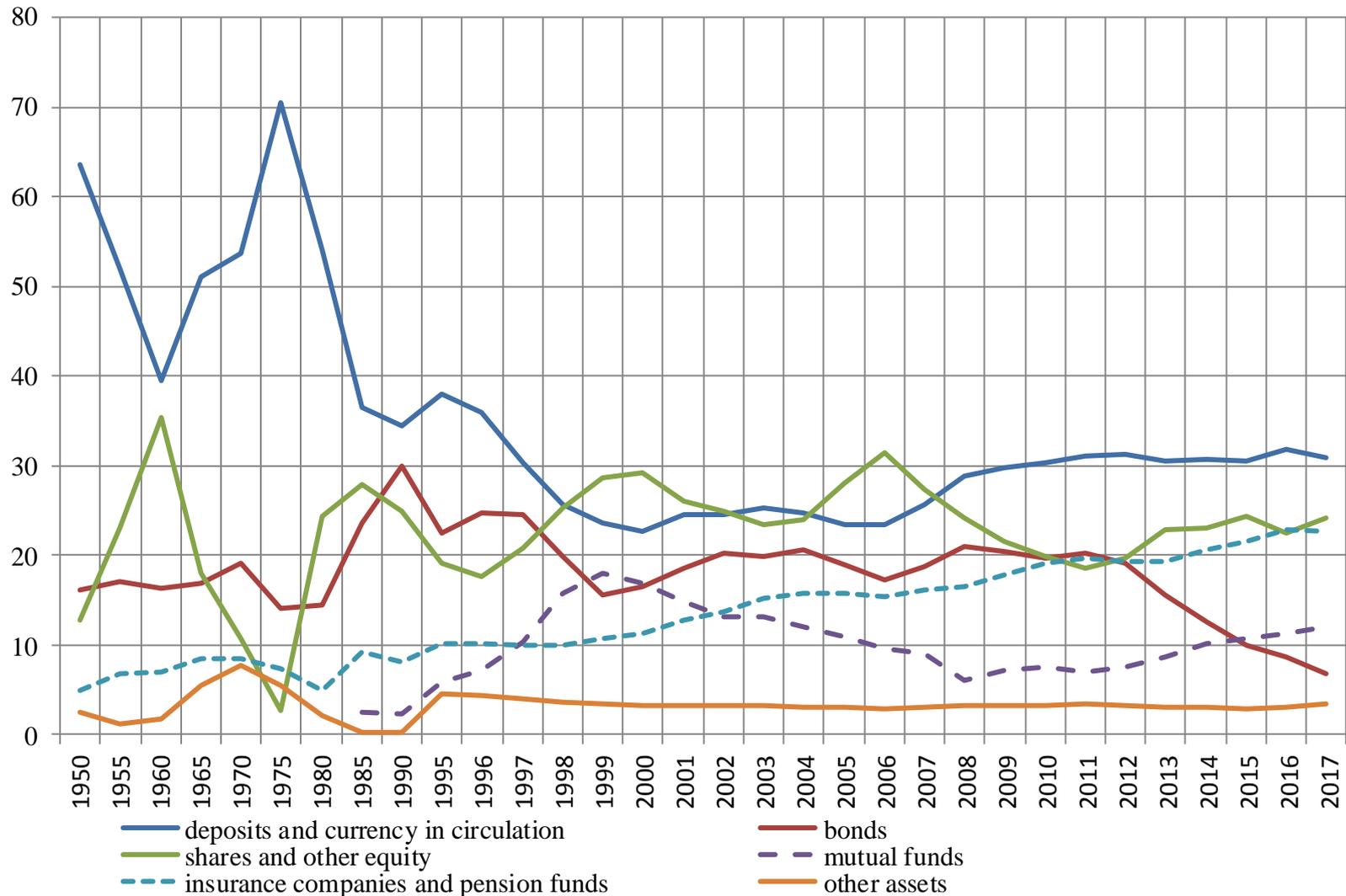
	Currency in circulation and deposits	Bonds	Shares and other equity	of which: quoted shares	Mutual funds	Insurance technical reserves and pension funds	Other assets
Canada*	20.4	2.0	18.9	9.0	19.8	36.5	2.4
France	27.4	1.1	22.8	5.0	5.8	37.2	5.8
Germany	39.2	2.6	10.9	5.6	10.8	36.0	0.6
Italy	30.9	6.9	24.1	1.9	12.2	22.6	3.3
Japan	51.5	1.6	13.4	6.0	3.8	26.9	2.8
Spain	39.9	0.8	26.5	6.0	14.6	16.3	1.8
United Kingdom	23.9	0.4	11.0	4.0	4.9	56.1	3.7
United States	12.4	5.3	35.4	(N.A.)	11.9	33.6	1.4

Source: OECD, Data extracted on 13 Mar 2019. * Our estimates for the last two columns.

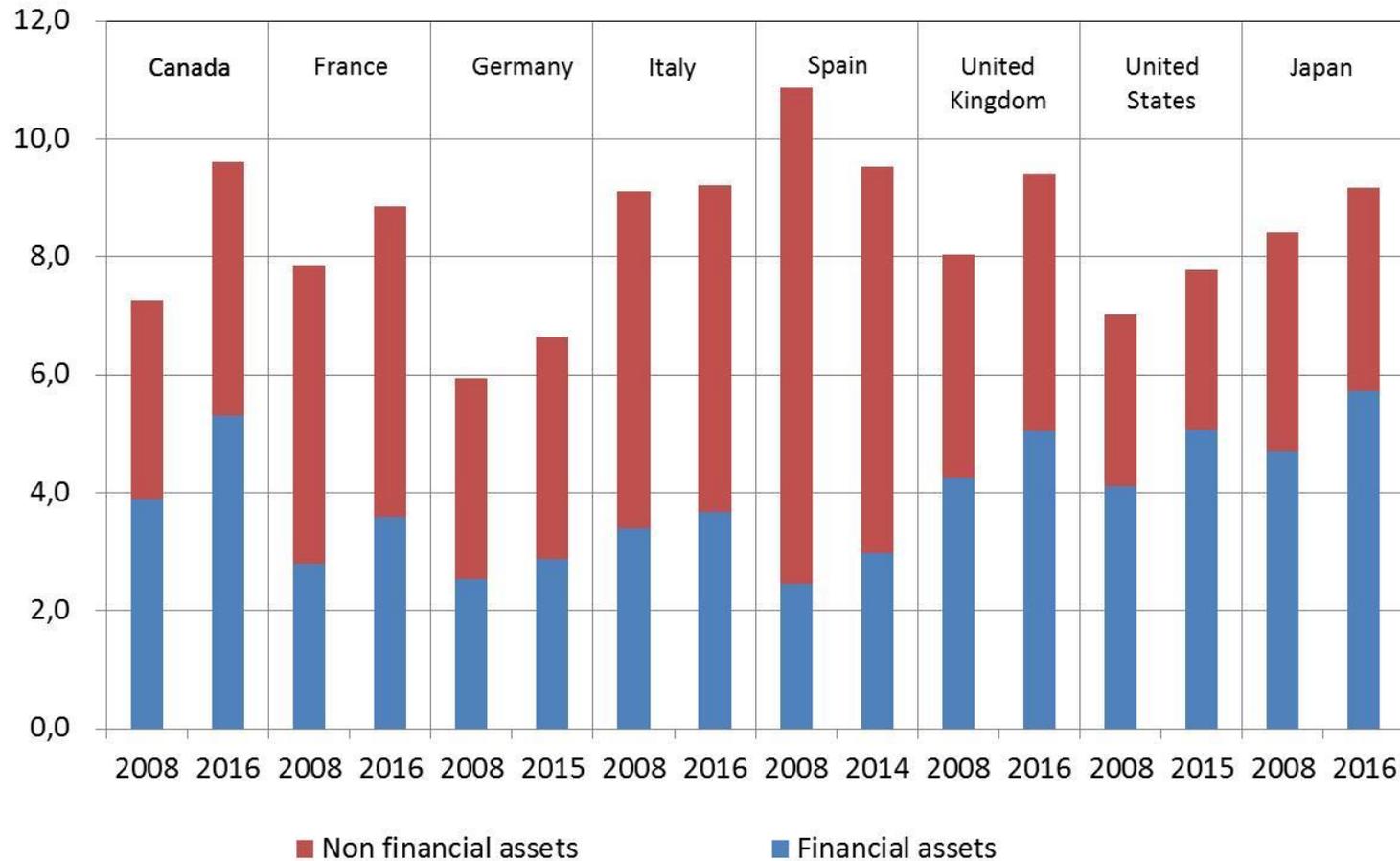
How financial systems differ

- Low inflation, and deflation in some years, explain why deposits prevail in Japan.
- Deposits also prevail in Germany, Spain and Italy, confirming the strong role of banks in these countries.
- American households have the greatest investments in shares and other equity.
- Italy has the highest level of unquoted shares, linked to the diffusion of family ownership of small-medium firms.
- Asset management – the sum of mutual fund, insurance companies, and pension fund assets – in Spain, Italy and Japan are smaller than in other countries.

In Italy business cycles, stock exchange up and downs, taxes, households' and banks' preferences influenced the evolution of the composition of financial assets (1950-2017; percentages)

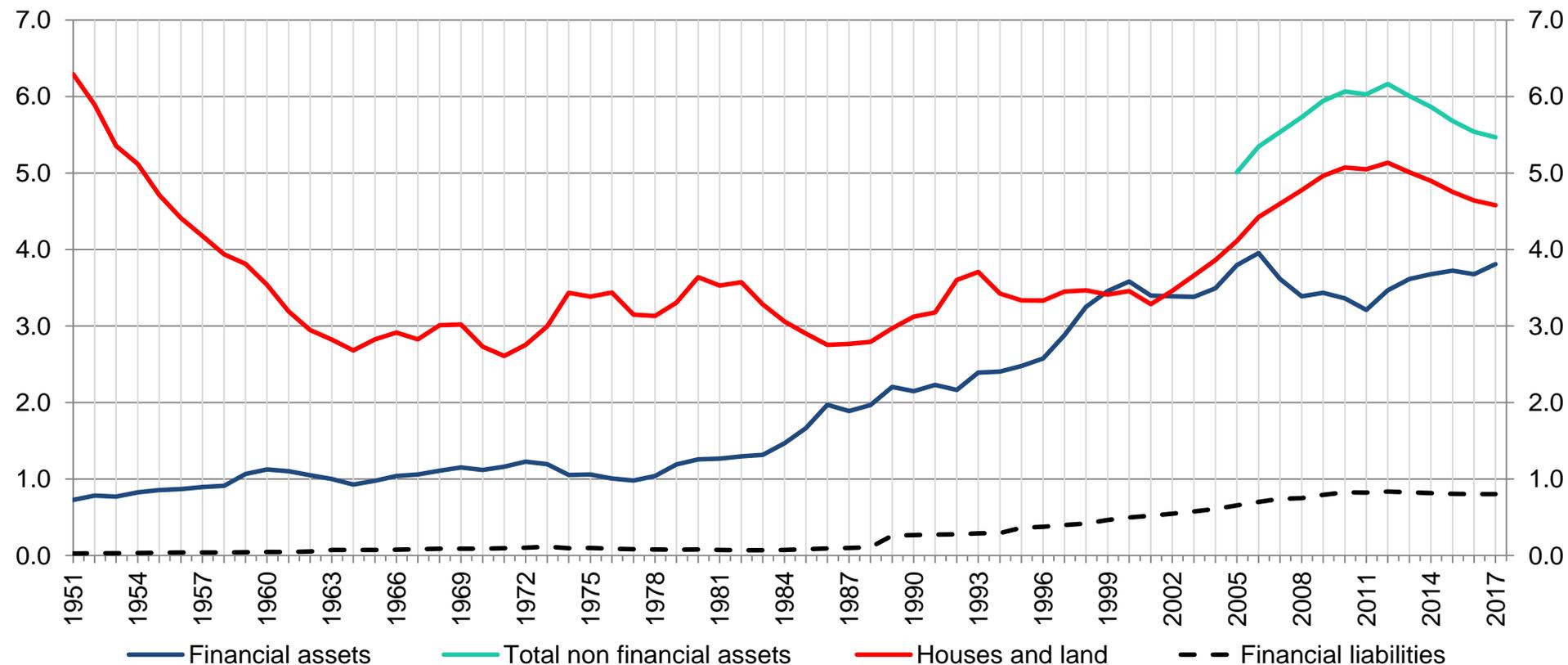


Real assets are greater than financial ones in most of countries *(ratios to disposable income)*



In Italy real assets are greater than financial wealth, but the difference is smaller than in the past

(1951-2017; ratios of financial assets to disposable income)

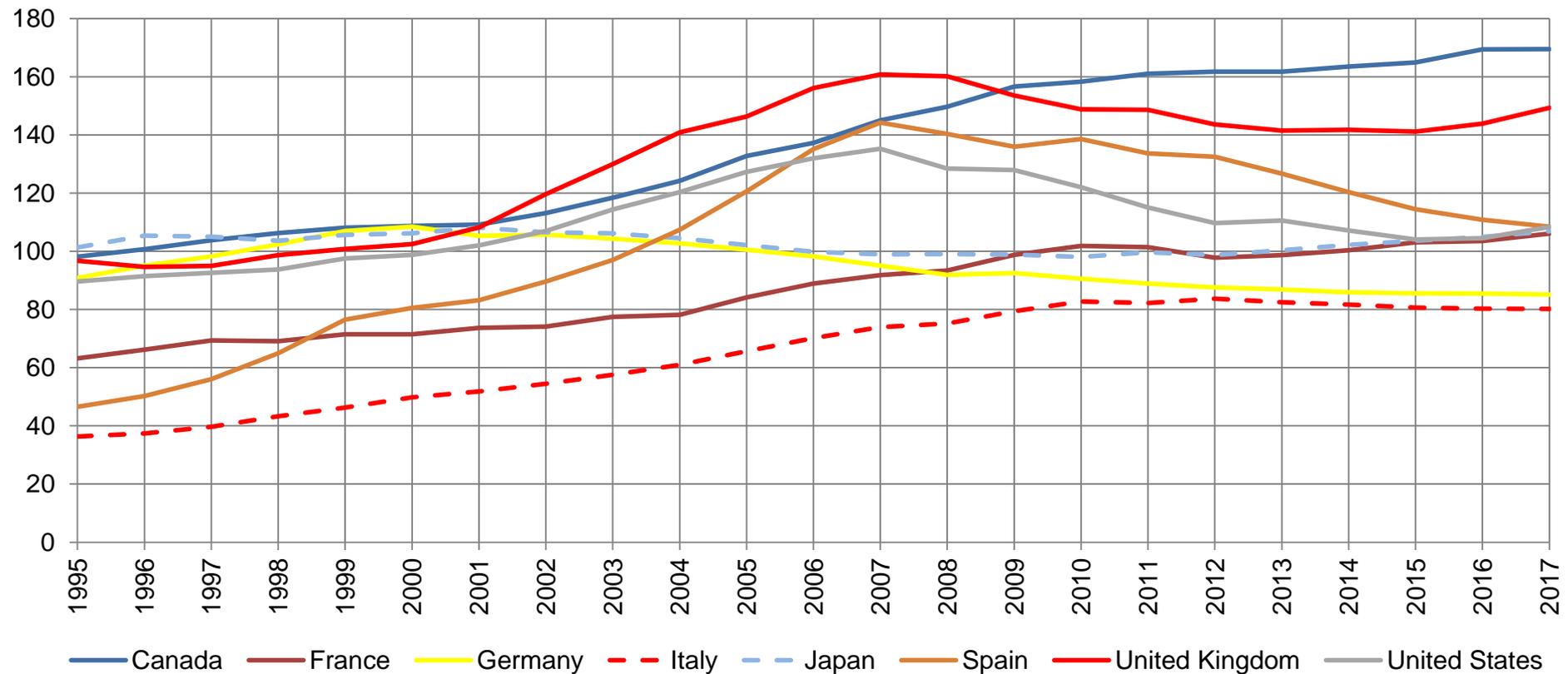


Financial assets vs real assets

- Probably the difference between financial wealth and real wealth became smaller also in other countries: this is the meaning of what we call “financialisation” or “financial deepening”.

Household debt increased in most of countries and stabilized after the global financial crisis

(1995-2017; ratios of financial assets to disposable income; percentages)



Do supply-side or demand-side variables influence household debt?

- Taking into account the consequences of the global financial crisis (2007-2009), economists abandoned the “benign neglect” attitude towards debt that characterized the debate during the “Great Moderation”.
- Supply-side variables include, *inter alia*, the quality of bankruptcy laws, the time required to resolve insolvencies, the availability and quality of Credit Registers, and legal origin (Anglosaxon, Scandinavian, French or German).
- Demand-side variables include, *inter alia*, savings, wealth, interest rates, and welfare State models (liberal, conservative, and social-democratic).
- Supply-side factors are more robust than demand-side indicators to explain household debt.

Conclusions and issues for discussion

- Italian households have a high financial and real wealth. Moreover their debt is low by international comparison.
- Household portfolios reflect national specificities, such as the relative importance of the Stock Exchange vs. the banking system.
- Asset management increased in all the countries.
- In some countries households' high debt and firms' high leverage might increase financial vulnerability if a sharp rise in interest rates will take place.

Conclusions and issues for discussion *(follows)*

- Did household wealth composition become more similar across countries? Do financial systems converge? (Bruno, De Bonis and Silvestrini 2012; Barucci and Colozza 2018).
- What matters more for wealth growth? Saving (Piketty 2014), financial gains or house price increases (Bonnet et al. 2014, Knoll et al. 2014)?
- It is interesting to “look through” the investments of mutual funds, insurance companies and pension funds, with the goal to find the “final” products of asset management.

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Firms' financial surpluses in advanced economies: the role of net foreign direct investments¹

Luigi Infante, Tatiana Cesaroni and Riccardo De Bonis,
Bank of Italy

¹ This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Firms' financial surpluses in advanced economies: the role of net foreign direct investments

Luigi Infante (joint with T. Cesaroni and R. De Bonis)

Banca d'Italia – Statistical Analysis Department

Workshop on the Use of Financial Accounts

Central Bank of the Republic of Turkey and Irving Fisher Committee

Istanbul, 19 March, 2019

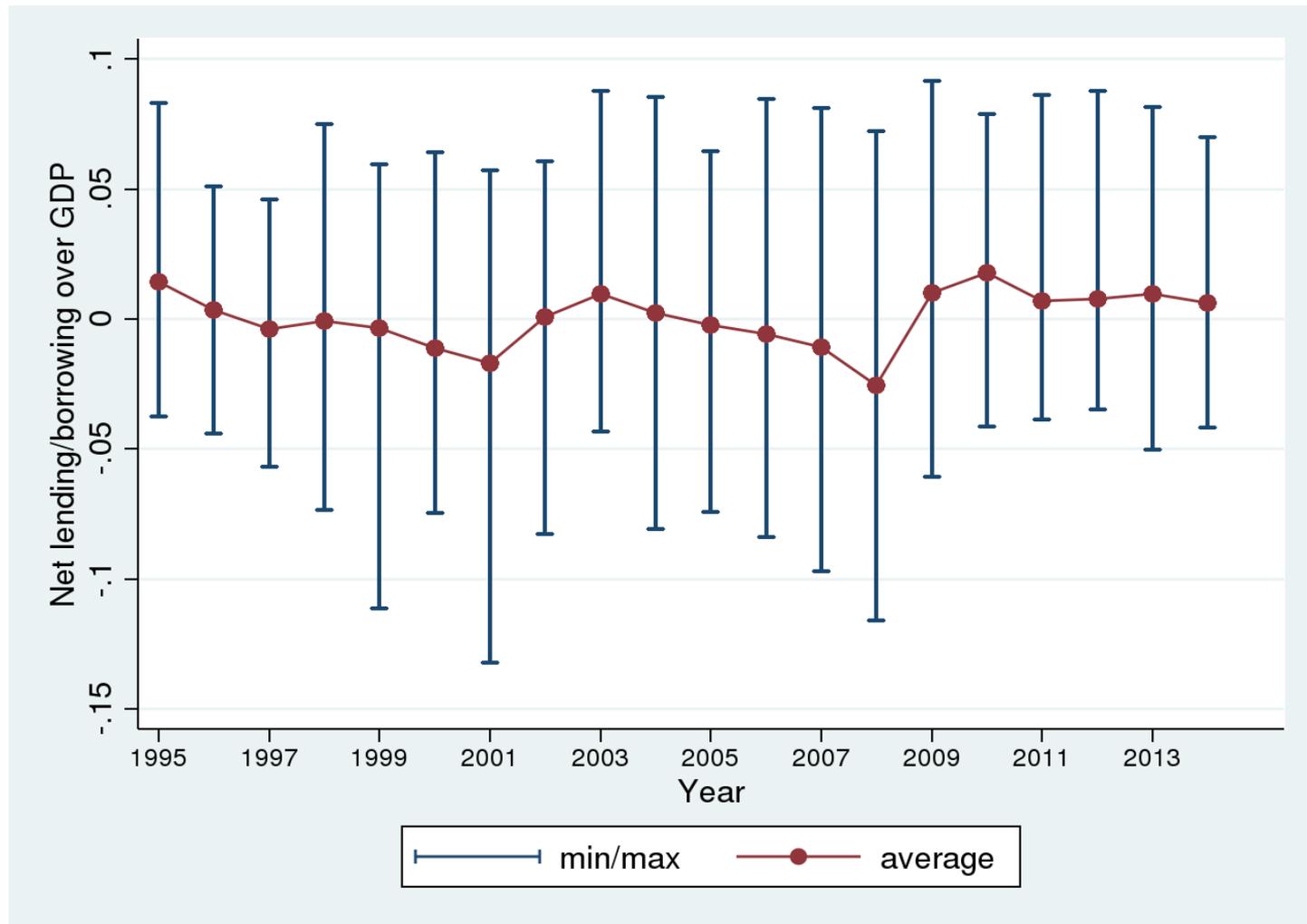
Motivations of the paper

- Non-financial corporations usually act as net borrowers
 - In last years, in many countries firms *have turned thrifty*
 - This paper attempts to shed light on this evidence:
 - *How spread is the excess savings?*
 - *What are the main forces driving the phenomenon?*
 - *Are there differences across countries?*
 - Our exercise is performed on a large number of developed countries over a long time horizon
-

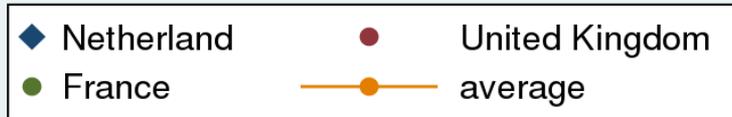
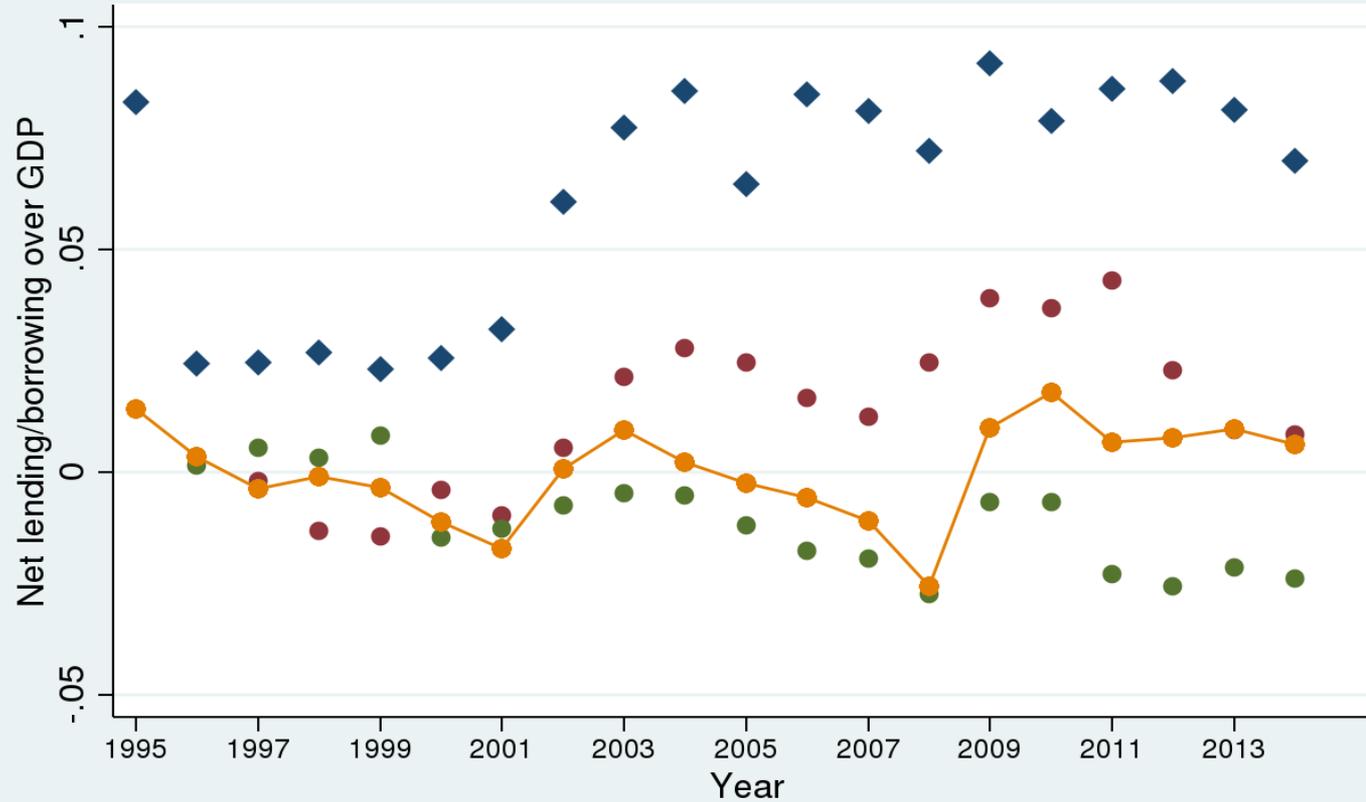
Literature and previous evidence: a glance

- The corporate *net lender status* during the first mid of 2000s was considered the reaction to: the **excess debt** and **accumulation of physical capital** during the 1990s (IMF, 2006)
 - Further factors for the same period have been investigated: **the fall of corporate investment, the growth of net foreign investment abroad** (Andrè et al, 2007)
 - Recently, Gruber and Kamin (2015) still stressed the low **investment** level along with an increase in **corporate payouts**
 - Theoretical papers emphasize the **precautionary motive** of firms, the accumulation of financial assets avoids future constraints (Armenter and Hnatkovska, 2014)
-

Non-financial corporations net lending/borrowing: an *average* view

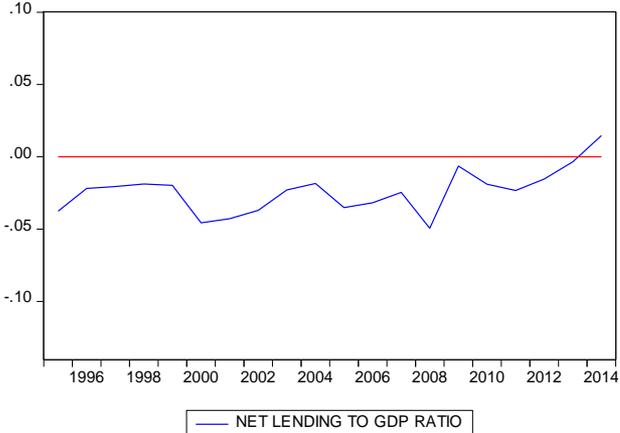


Non-financial corporations net lending/borrowing: selected countries

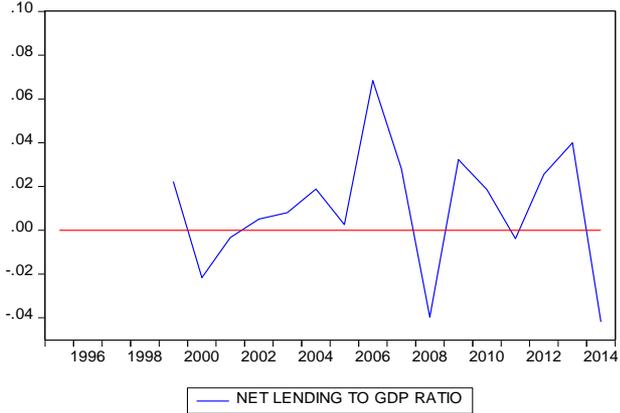


Non-financial corporations net lending/borrowing: selected countries [2]

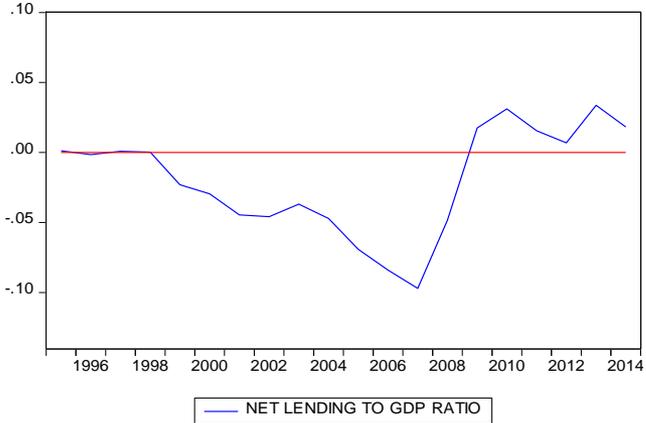
Italy



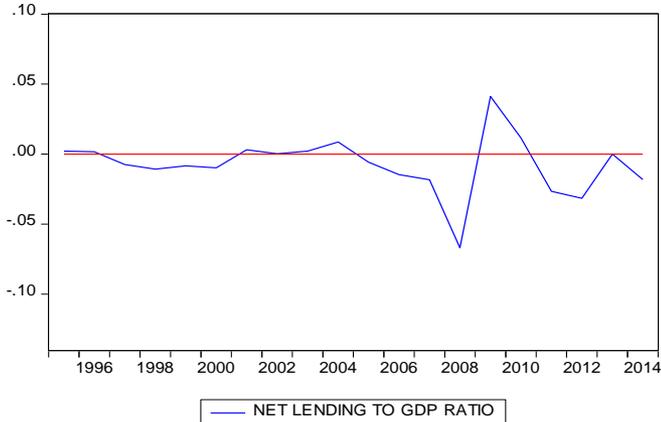
Germany



Spain



United States



Data set description

- Country level analysis, data are mainly related to non-financial corporations
 - Data come from Flow-of-Funds statistics (ESA2010 and SNA2008)
 - 18 countries => 16 European countries plus US and Japan
 - Time spans from 1995 to 2014
 - Annual data
 - The explanatory variables try to catch:
 - Structural changes
 - Aggregate Demand and Supply factors
 - Uncertainty
 - Debt level
-

The variables used: definitions

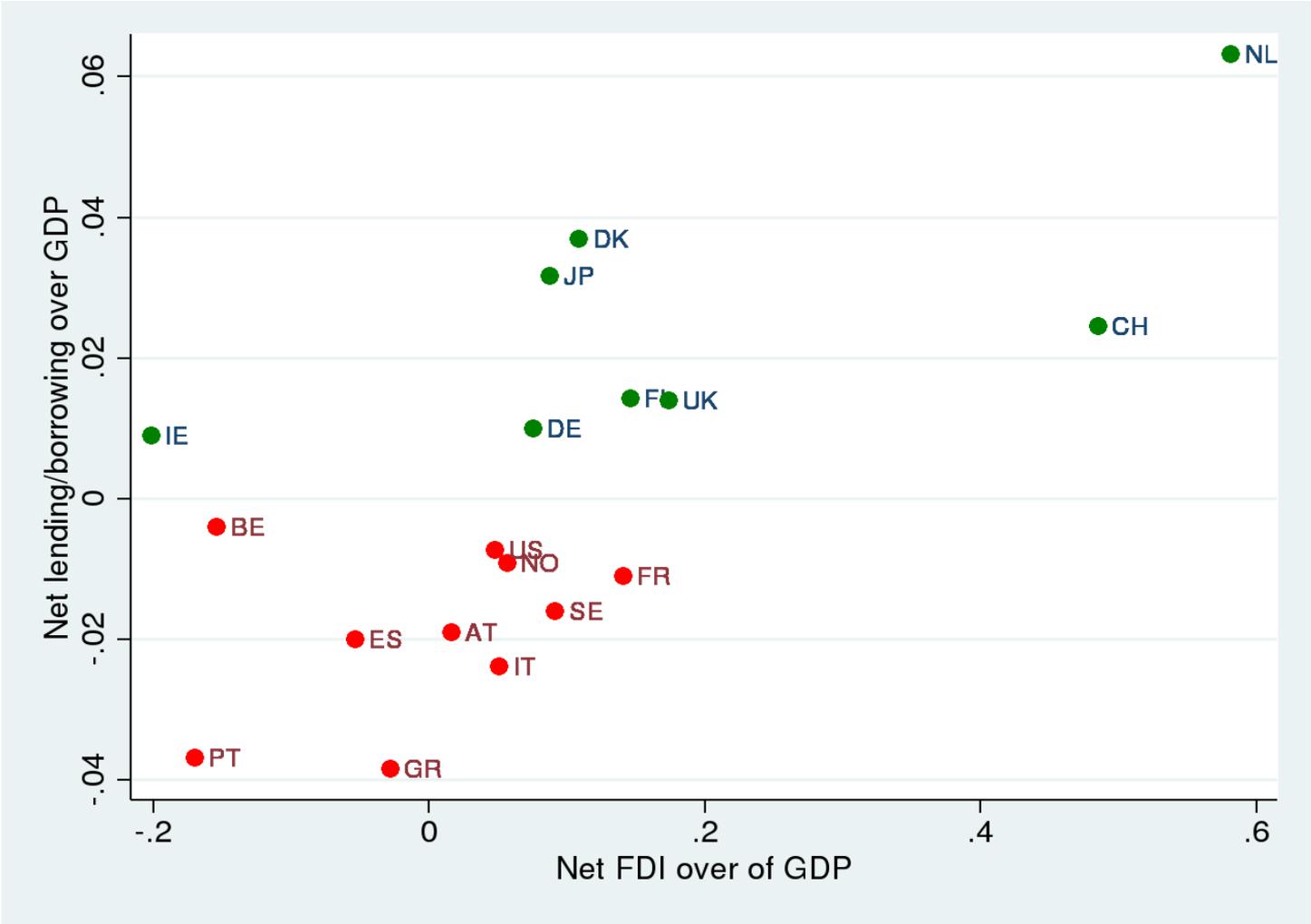
<i>Variable</i>	<i>Description</i>	<i>Source</i>	<i>Expected sign</i>
Net lending/net borrowing (NLBGDP)	Net lending/net borrowing as a percentage of GDP.	Financial accounts	Dependent variable
Net FDI/GDP	Net foreign direct investment (stocks) as a ratio to GDP.	OECD	Positive
Output gap	$(\text{Effective GDP} - \text{Potential GDP}) / \text{Potential GDP} * 100$.	OECD	Negative
Investment/GDP	Gross investment rate of corporate sector as a ratio of GDP.	National accounts	Negative
Profits/GDP	Profits after net interest and taxes as a ratio to GDP: profits are defined as the sum of gross operating surplus and property income minus the sum of interest rate paid and taxes (IMF 2006).	National accounts	Positive
Oil price	Price of Brent in US dollars.	OECD	Negative
Interest rates spread	Long term – short term interest rates on deposits.	OECD	Positive
Leverage	Ratio of financial debt (loans plus bonds issued) to equity and financial debt.	Financial accounts	?
Financial openness (Finopen)	Ratio of foreign financial assets and liabilities to GDP.	OECD	Positive
Taxation	Taxes on production and imports, and on income and wealth (over GDP).	National accounts	Negative

Descriptive statistics

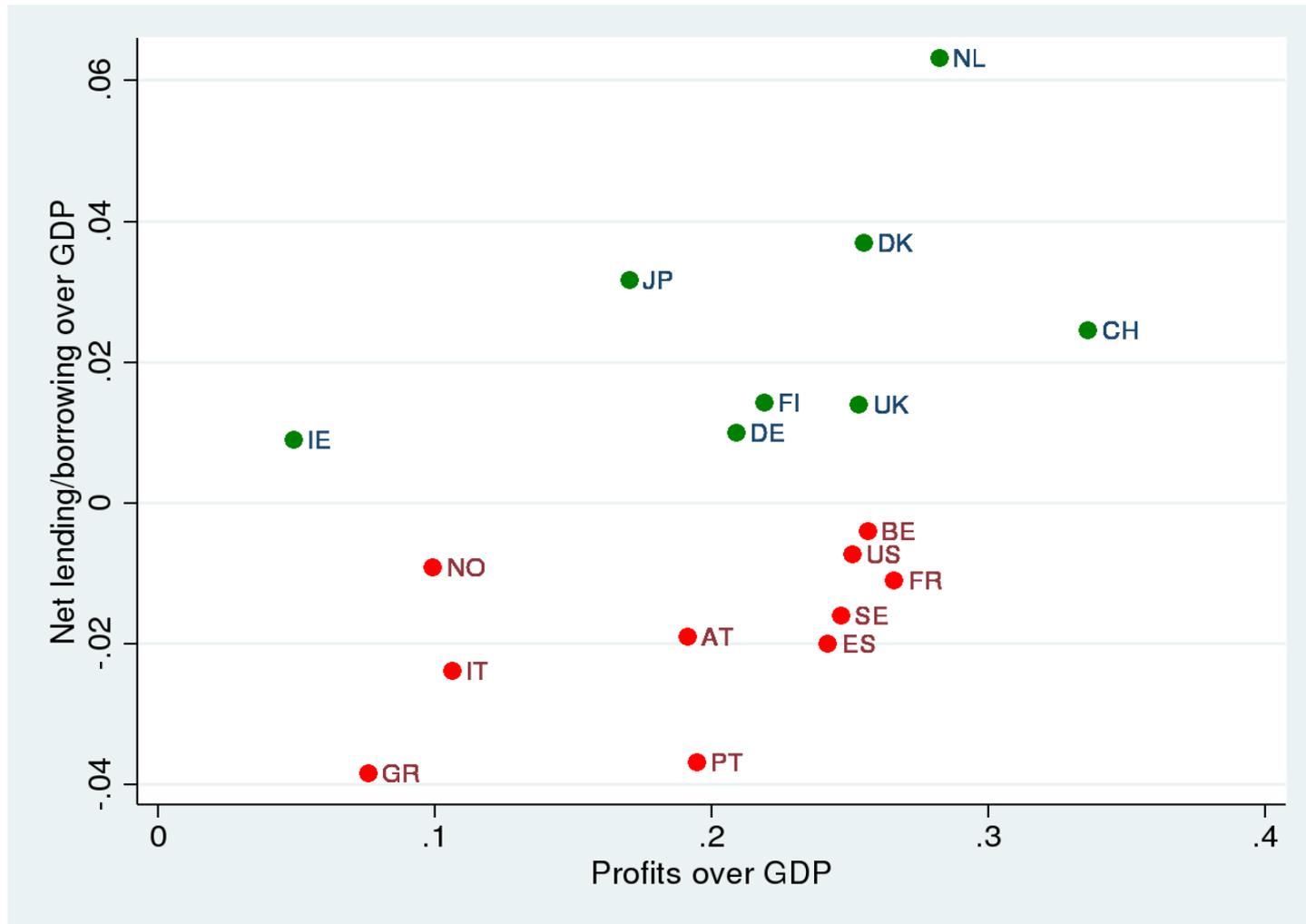
Variables	Net Lender Countries			Net Borrowers Countries		
	Number of observations	Mean	Std. dev.	Number of observations	Mean	Std. dev.
Net Lending/borr. (over GDP)	139	0.027	0.031	197	-0.019	0.033
Output gap	160	-0.138	2.930	201	-0.333	3.212
Net FDI / GDP	160	0.182	0.333	200	-0.000	0.109
Investment/GDP	153	0.120	0.019	182	0.119	0.025
Brent	160	55.93	33.83	200	55.93	33.81
Consumption / GDP	153	0.535	0.061	182	0.560	0.079
Profits / GDP	153	0.225	0.079	182	0.198	0.071
Spread rate	152	1.343	1.207	197	1.780	2.467
Leverage	146	0.645	0.193	200	0.650	0.226
Financial Openness (over GDP)	160	7.840	7.327	200	3.540	1.947

The relationship between the net lending/borrowing and FDI

(averages: 1995-2014)



...and between the net lending/borrowing and NFC profits (averages: 1995-2014)



A simple econometric exercise

- The data are combined and used in an econometric test aimed at verify the role played by the variables in the net lending/borrowing behaviour of non-financial corporations
- We use a simple regression analysis as follows:

$$Y_{it} = \alpha_i + \beta_1 * FDI_{it} + \beta_2 * Igdp_{it} + \beta_3 * profitsgdp_{it} + \beta_4 * outputgap_{it} + \beta_5 * controls_{it} + e_{it}$$

- Panel data with country fixed effects
- Robustness exercises on the definition of internationalisation and further control refinements
- In order to investigate the role of heterogeneity between countries we finally split the main coefficients between net lenders and net borrowers

A panel data regression analysis

(fixed effects estimator; 1995 – 2014)

Dependent variable Net Lending/Borrowing	[1]	[2]	[3]	[4]
FDI / GDP	0.041*** (0.01)	0.038*** (0.01)	0.042*** (0.01)	0.033** (0.01)
Investment/GDP_11	-0.917*** (0.18)	-0.953*** (0.18)	-0.94*** (0.18)	-0.91*** (0.18)
Output gap_11	-0.001* (0.00)	-0.002** (0.00)	-0.001 (0.00)	-0.0003 (0.00)
Oil price	-0.0001* (0.00)	-0.0001** (0.00)	-0.0001** (0.00)	-0.0001*** (0.00)
Profits / GDP_11		0.168*** (0.07)	0.251*** (0.07)	0.14*** (0.07)
Spread rate			0.002** (0.001)	0.003*** (0.001)
Leverage				-0.043** (0.016)
Constant	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes
R2	0.14	0.30	0.34	0.32
Observations	307	307	299	299
Groups	18	18	18	18

Testing for financial openness, crisis, taxation and banking intermediation (fixed effects estimators; 1995 – 2014)

Dependent variable Net Lending/Borrowing	[1]	[2]	[3]	[4]
FDI / GDP		0.029** (0.01)	0.030*** (0.01)	0.026** (0.01)
Investment/GDP_11	-0.893*** (0.18)	-0.827*** (0.18)	-0.915*** (0.18)	-0.973*** (0.17)
Output gap_11	-0.001 (0.00)	-0.001 (0.00)	-0.000 (0.00)	-0.000 (0.00)
Oil price	-0.0001*** (0.00)	-0.0001* (0.00)	-0.0001** (0.00)	-0.0002*** (0.00)
Profits / GDP_11	0.161*** (0.07)	0.120* (0.07)	0.068 (0.08)	0.144** (0.07)
Spread rate	0.003** (0.00)	0.003*** (0.00)	0.003** (0.00)	0.001 (0.00)
Financial Openness_11 (over GDP)	0.002*** (0.00)			
Leverage	-0.042** (0.02)	-0.046*** (0.02)	-0.044*** (0.02)	-0.042** (0.02)
Crisis dummy		-0.041*** (0.01)		
Leverage*Crisis		0.062*** (0.02)		
Taxprod/GDP			-0.473** (0.23)	
Bank funding flow				-0.139*** (0.039)
Constant	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes
R2	0.24	0.27	0.26	0.27
N. of observations	299	299	299	299
N. of groups	18	18	18	18

(***), (**) and (*) denote significance at the 1%, 5% and 10% respectively. Standard errors in parenthesis.

Splitting the main coefficients across countries

(fixed effects estimators; 1995 – 2014)

Dependent variable: firms' net lending/net borrowing	[1]	[2]
FDI / GDP net lenders	0.032*** (0.01)	0.032*** (0.04)
FDI / GDP net borrowers	0.046 (0.04)	0.044 (0.04)
Investment/GDP _11	-0.904*** (0.18)	
Investment/GDP _11 net lenders		-0.764*** (0.26)
Investment/GDP _11 net borrowers		-0.997*** (0.22)
Output gap_11	-0.000 (0.00)	-0.000 (0.00)
Oil price	-0.0001** (0.00)	0.0001** (0.00)
Profits / GDP_11	0.136* (0.14)	0.145** (0.07)
Spread rate	0.003** (0.00)	0.003** (0.00)
Leverage	-0.043** (0.02)	-0.043* (0.02)
Constant	yes	Yes
Country fixed effects	yes	yes
R2	0.24	0.25
Observations	299	299
Groups	18	18

Conclusions

- Traditional corporate sector theory predicts that firms run deficits to finance investment spending...
 - ...since mid-1990s many industrial countries have been experiencing surpluses
 - Our results suggest that net lending/borrowing is clearly negatively associated to investment spending and in turn to demand condition
 - At the same time, globalization affected the organization of the production within countries increasing the convenience to invest abroad. Foreign direct investment therefore turns out to be positively associated to net lending/borrowing
 - The debt plays an important role in our story, while it seems that in good time the leverage negatively affects the balance of non-financial corporation, firms try to deleverage during the global financial crisis
-

THANK YOU FOR YOUR ATTENTION

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Use of financial accounts and sectoral balance sheets for enhancing macroeconomic analysis in the Russian Federation¹

Alieva Piruza,
The Central Bank of the Russian Federation

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



Bank of Russia

USE OF FINANCIAL ACCOUNTS AND SECTORAL
BALANCE SHEETS FOR ENHANCING
MACROECONOMIC ANALYSIS IN THE RUSSIAN
FEDERATION

Piruzza Alieva
Statistics & Data Management Department

Workshop on the use of financial accounts
Istanbul, 18-20 March 2019



Financial Accounts and Financial balance sheets within the system of national accounts of the Russian Federation

Statistics

[Macroeconomic Financial Statistics](#)

[Monetary and Financial Statistics](#)

[External Sector Statistics](#)

[Securities Statistics](#)

[Financial accounts and Financial balance sheets](#)

[Action Strategy](#)

Statistics > [Macroeconomic Financial Statistics](#)

Financial accounts and Financial balance sheets

 [Annual financial accounts](#)

[2017](#) [2016](#) [2015](#) [2014](#) [2013](#) [2012](#)

 [Short overview of the data on the financial accounts and the financial balance sheets of the system of national accounts of the Russian Federation in 2017](#)

 [Quarterly financial accounts](#)

[Q2, 2018](#) [Q1, 2018](#) [Q4, 2017](#) [Q3, 2017](#) [Q2, 2017](#) [Q1, 2017](#) [Q4, 2016](#) [Q3, 2016](#) [Q2, 2016](#) [Q1, 2016](#) [Q4, 2015](#) [Q3, 2015](#) [Q2, 2015](#) ... [Close](#)
[Q1, 2015](#)

 [Financial balance sheets](#)

[01.07.2018](#) [01.04.2018](#) [01.01.2018](#) [01.10.2017](#) [01.07.2017](#) [01.04.2017](#) [01.01.2017](#) [01.10.2016](#) [01.07.2016](#) [01.04.2016](#) [01.01.2016](#) ... [Close](#)
[01.10.2015](#) [01.07.2015](#) [01.04.2015](#) [01.01.2015](#) [01.01.2014](#) [01.01.2013](#) [01.01.2012](#)

 [Quarterly financial accounts \(time series\)](#)

 [Financial balance sheets \(time series\)](#)

 [Methodological notes on the financial accounts and the financial balance sheets of the system of national accounts of the Russian Federation](#)

Please, send your questions, comments and suggestions to the Statistics Department of the Bank of Russia (ds_info2@cbr.ru).

Financial Accounts and Financial balance sheets within the system of national accounts of the Russian Federation

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2	Financial account, by instrument and by sector																
3	Year: 2017																
4	Min of rubles																
5		Financial corporations											General government	Non-financial corporations	Households and NPISH	Total economy	Rest of the world
6		Total	Central bank and other depository corporations	Investment funds	Other financial intermediaries	Insurance corporations	Pension funds										
7		S12	S121+S122	S124	S125	S128	S129	S13	S11	S14/S15	S1	S2					
8	Financial assets	11 597 269	8 183 427	547 867	1 887 834	-473 660	584 481	3 835 396	12 835 944	5 868 296	32 536 985	173 145	Financial assets				
9	F.1 Monetary gold and SDRs	703	703	0	0	0	0	0	0	0	0	703	Monetary gold and SDRs	F.1			
10	F.2 Currency and deposits	4 232 154	4 250 075	-89 915	-169 810	103 939	-1 985	380 217	1 680 438	3 918 046	10 130 835	-854 127	Currency and deposits	F.2			
11	F.3 Debt securities	2 023 976	1 324 461	94 151	-156 429	347 258	414 535	-2 923	911 901	279 476	3 212 430	985 870	Debt securities	F.3			
12	F.4 Loans	3 346 769	1 793 868	-46 244	1 585 568	-923	12	72 213	2 827 345	59 561	6 306 288	-257 434	Loans	F.4			
13	F.5 Equity and investment fund shares	2 329 000	1 581 258	312 814	440 752	10 328	-16 152	973 842	613 901	840 833	4 757 576	1 099 212	Equity and investment fund shares	F.5			
14	F.6 Insurance, pension and standardized guarantee schemes	19 688	23 562	0	-3 216	-437	-223	1 842	-1 468	780 571	730 633	-1 945	Insurance, pension and standardized guarantee schemes	F.6			
15	F.8 Other accounts receivable	-355 001	-792 580	44 743	270 969	13 495	108 292	1 610 205	6 083 827	69 489	7 408 440	-818 812	Other accounts receivable	F.8			
16																	
17	Liabilities	18 917 760	6 924 119	527 985	2 638 583	-435 422	399 811	3 884 310	13 726 960	1 956 707	38 485 746	2 224 385	Liabilities				
18	F.1 Monetary gold and SDRs	381	381	0	0	0	0	0	0	0	0	381	Monetary gold and SDRs	F.1			
19	F.2 Currency and deposits	8 225 231	8 225 231	0	0	0	0	0	0	0	8 225 231	1 071 476	Currency and deposits	F.2			
20	F.3 Debt securities	895 973	605 921	0	296 829	-5 777	0	1 266 482	1 345 326	-4	3 508 779	689 522	Debt securities	F.3			
21	F.4 Loans	334 306	-1 740 251	0	2 072 983	1 703	-89	-184 156	4 361 863	1 865 823	6 377 876	-328 981	Loans	F.4			
22	F.5 Equity and investment fund shares	1 664 122	744 308	410 618	-893 046	15 224	926	0	2 141 508	0	3 885 630	2 051 160	Equity and investment fund shares	F.5			
23	F.6 Insurance, pension and standardized guarantee schemes	733 353	0	0	0	330 163	403 190	0	0	0	733 353	-14 666	Insurance, pension and standardized guarantee schemes	F.6			
24	F.8 Other accounts payable	-936 686	-911 471	117 287	-232 275	94 189	-4 256	2 801 993	5 878 261	90 888	7 834 436	-1 244 909	Other accounts payable	F.8			
25																	
26	Net lending (+) / Net borrowing (-)	679 589	1 259 388	19 962	-742 669	38 238	184 670	-848 923	-1 691 016	3 911 589	2 051 159	-2 051 160	Net lending (+) / Net borrowing (-)				
27		S12	S121+S122	S124	S125	S128	S129	S13	S11	S14/S15	S1	S2					
28		Total	Central bank and other depository corporations	Investment funds	Other financial intermediaries	Insurance corporations	Pension funds	General government	Non-financial corporations	Households and NPISH	Total economy	Rest of the world					
29		Financial corporations															
30																	
31	Updated on 28 December 2018.																
32																	
33																	
34																	
35																	
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56																	

Financial accounts in Russia

Institutional sectors (9 sectors) based on the SNA 2008:

- Central bank and other depository corporations (S121+S122)
- Investment funds (S124)
- Other financial intermediaries (S125)
- Insurance corporations (S128)
- Pension funds (S129)
- General government (S13)
- Non-financial corporations (S11)
- Households and non-profit institutions serving households (S14+S15)
- Rest of the world (S2)

Financial instruments (7 instruments) based on the SNA 2008:

- Monetary gold and Special Drawing Rights (F1)
- Currency and deposits (F2)
- Debt securities (F3)
- Loans (F4)
- Equity and investment fund shares (F5)
- Insurance, pension and standardized guarantee schemes (F6)
- Other accounts receivable/payable (F8)

The motivation for using Financial Accounts

1

Analysis of economic cycles and growth

2

Investigation in the financial investment trends

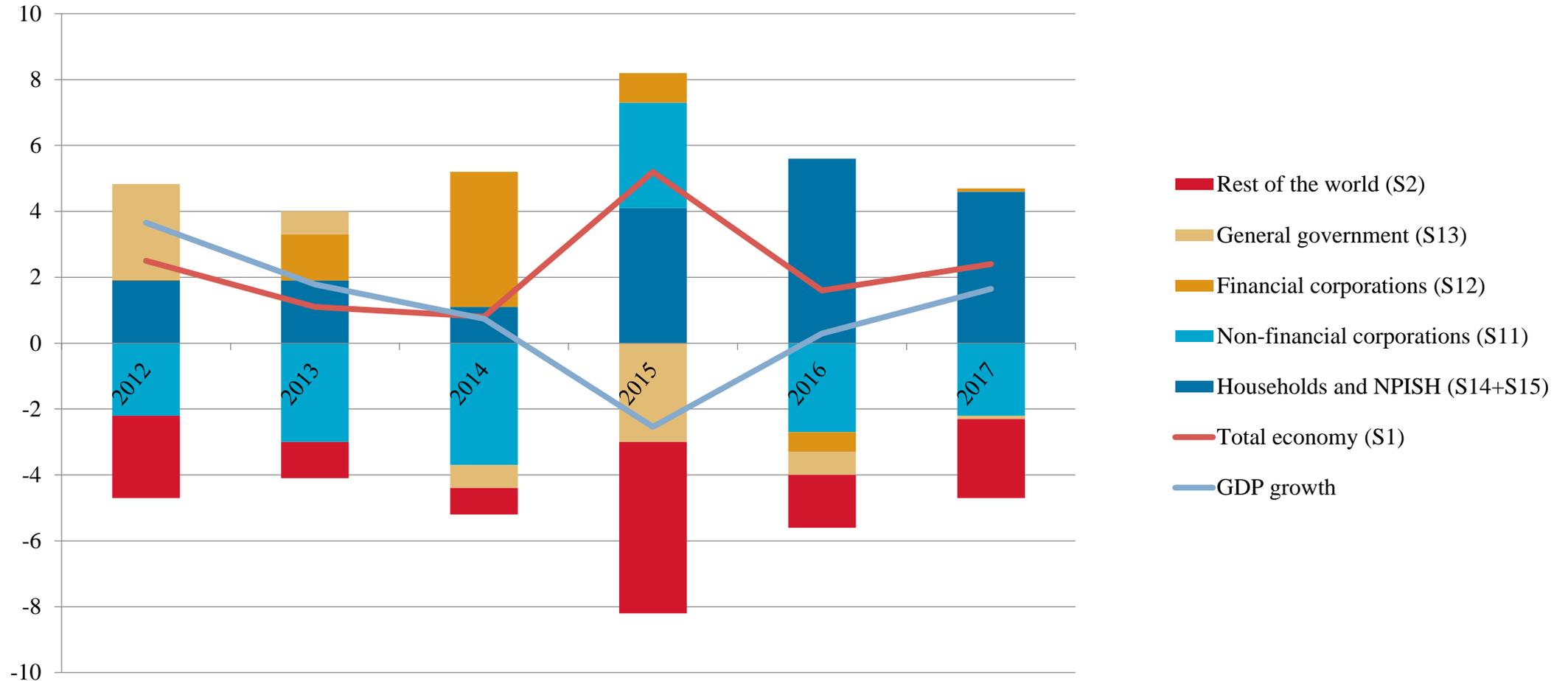
3

Ensuring financial stability purposes

The rationale for using financial accounts data

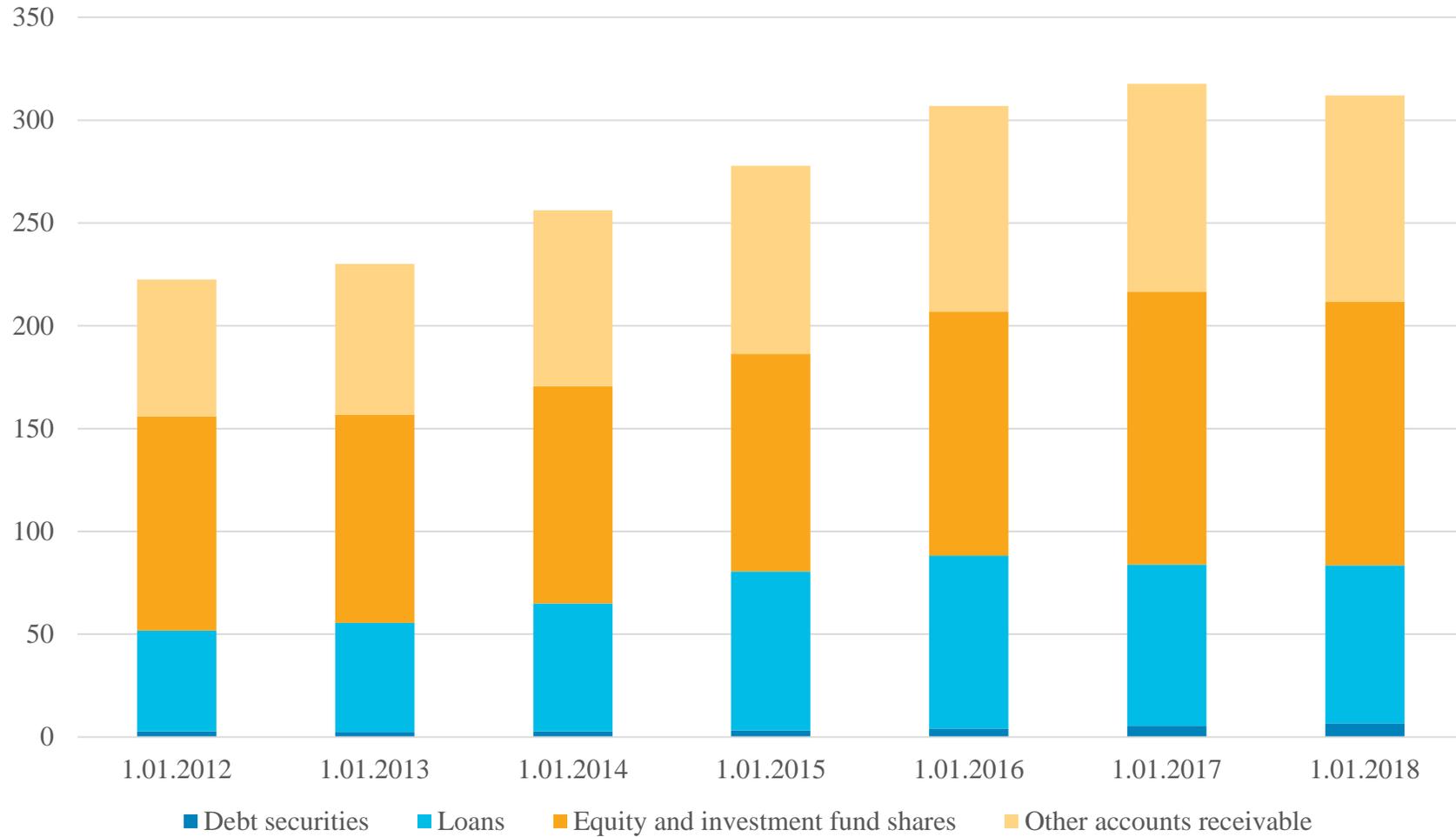


**FINANCIAL ACCOUNT. NET LENDING (+)/BORROWING (-) BY SECTOR, 2012-2017
(PERCENTAGE OF GDP)**

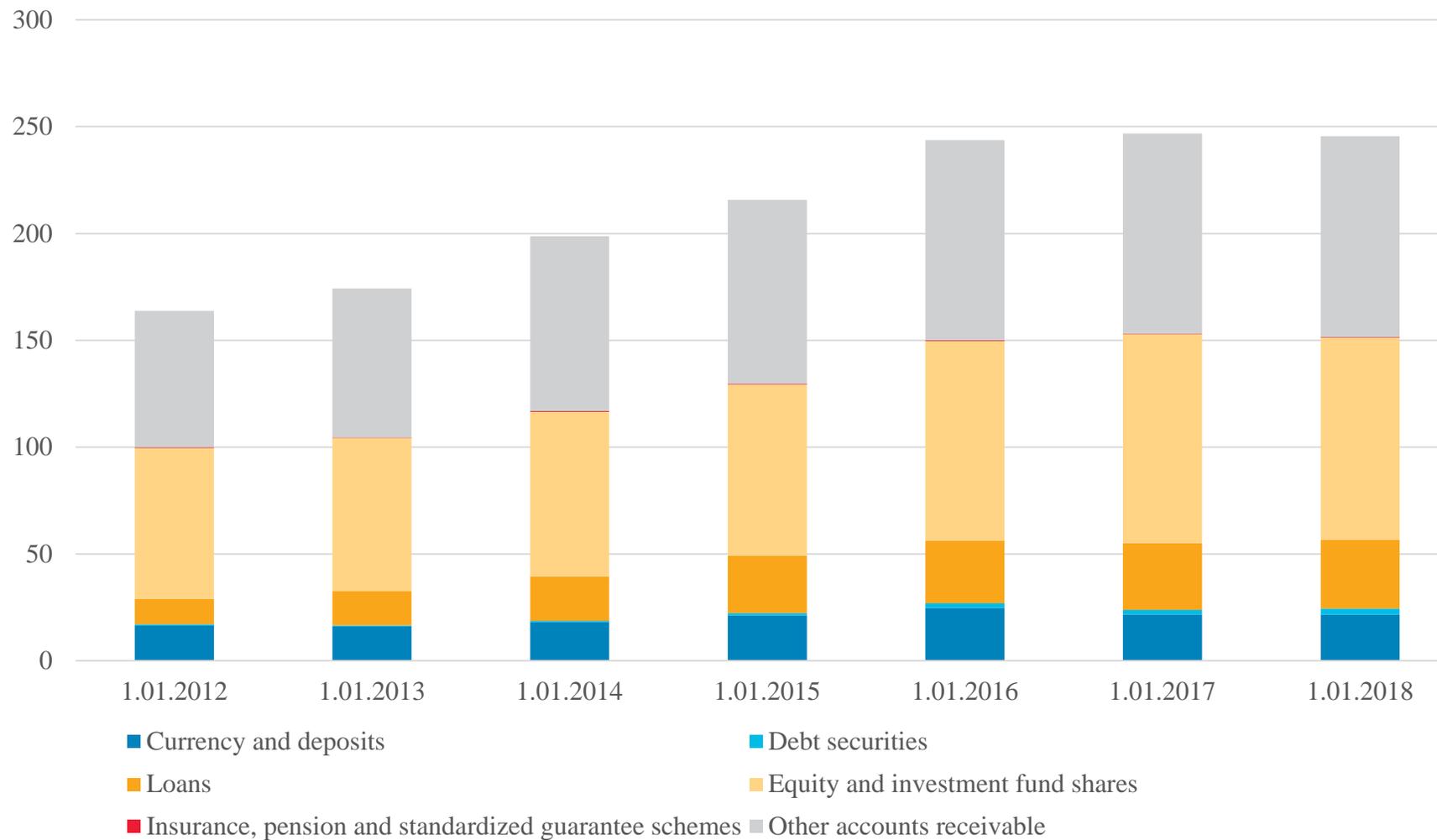




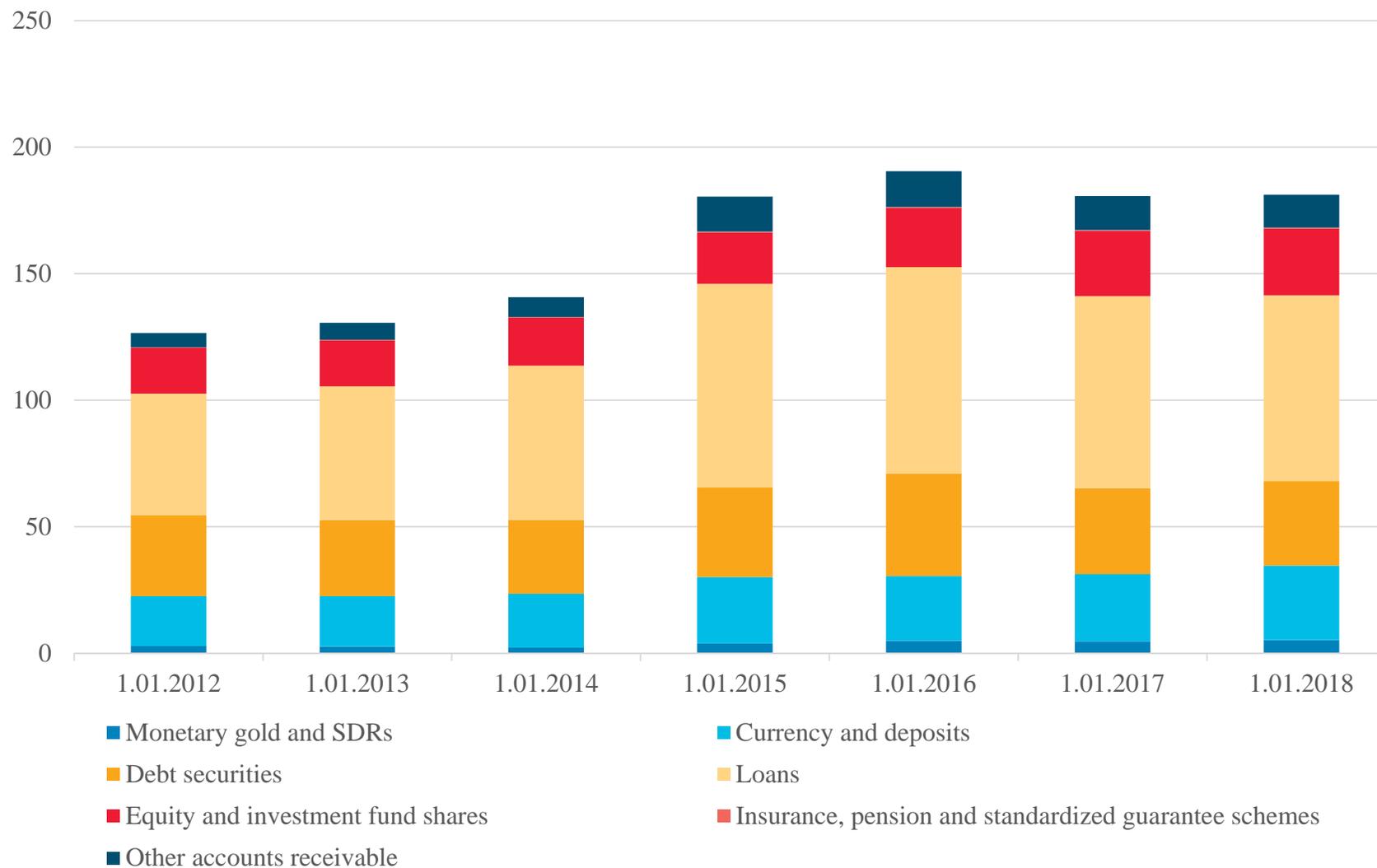
**THE FINANCING OF NON-FINANCIAL CORPORATIONS, 2012-2017
(PERCENTAGE OF GDP)**



**THE FINANCIAL ASSETS OF NON-FINANCIAL CORPORATIONS, 2012-2017
(PERCENTAGE OF GDP)**

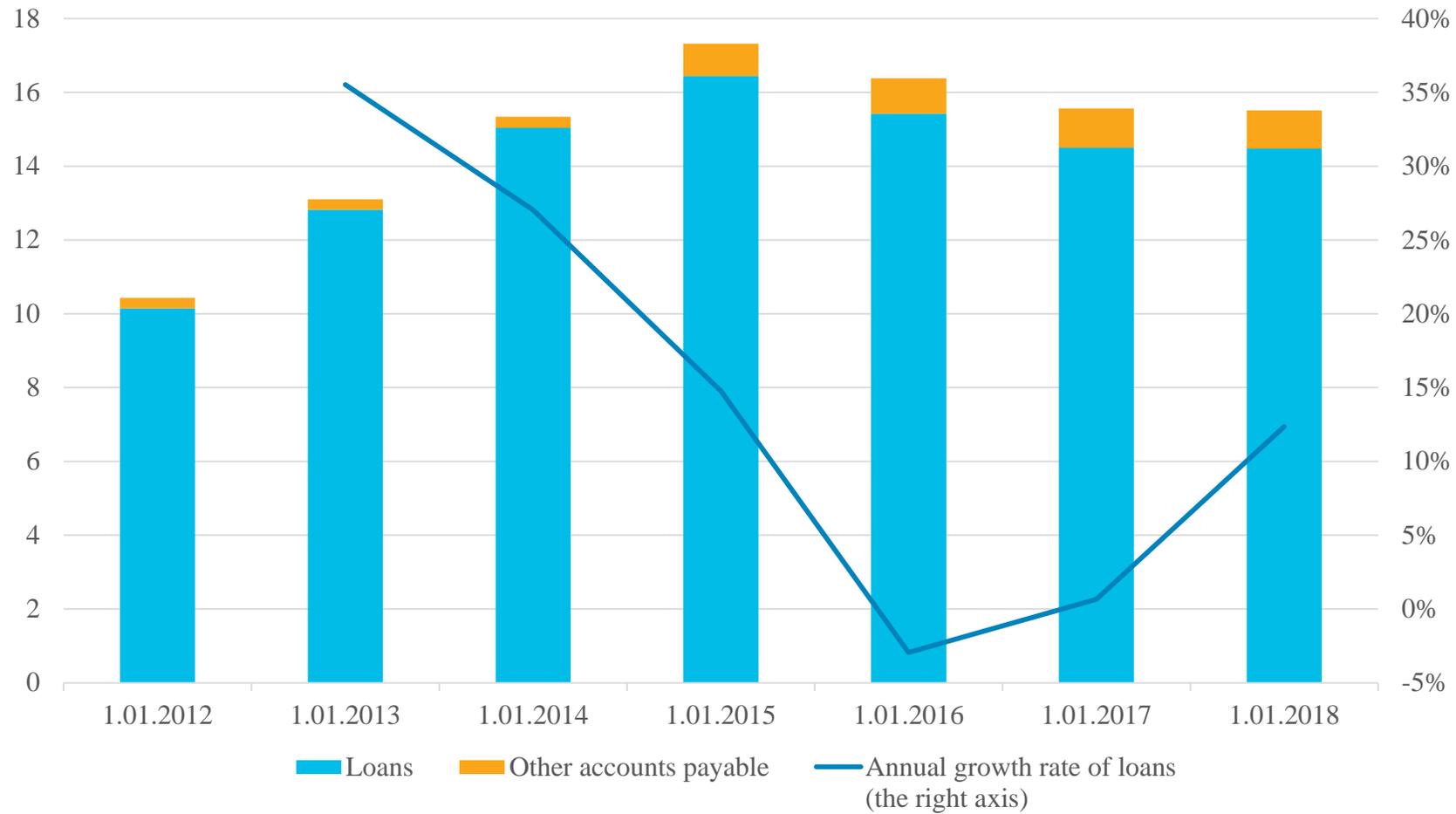


**THE FINANCIAL ASSETS OF FINANCIAL CORPORATIONS, 2012-2017
(PERCENTAGE OF GDP)**





THE FINANCIAL LIABILITIES OF HOUSEHOLDS, 2012-2017 (PERCENTAGE OF GDP)



Dashboards on debt securities

URL: http://www.cbr.ru/Eng/statistics/?PrId=sec_st



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Financial accounts and Financial balance sheets

Action Strategy

Statistics > Macroeconomic Financial Statistics

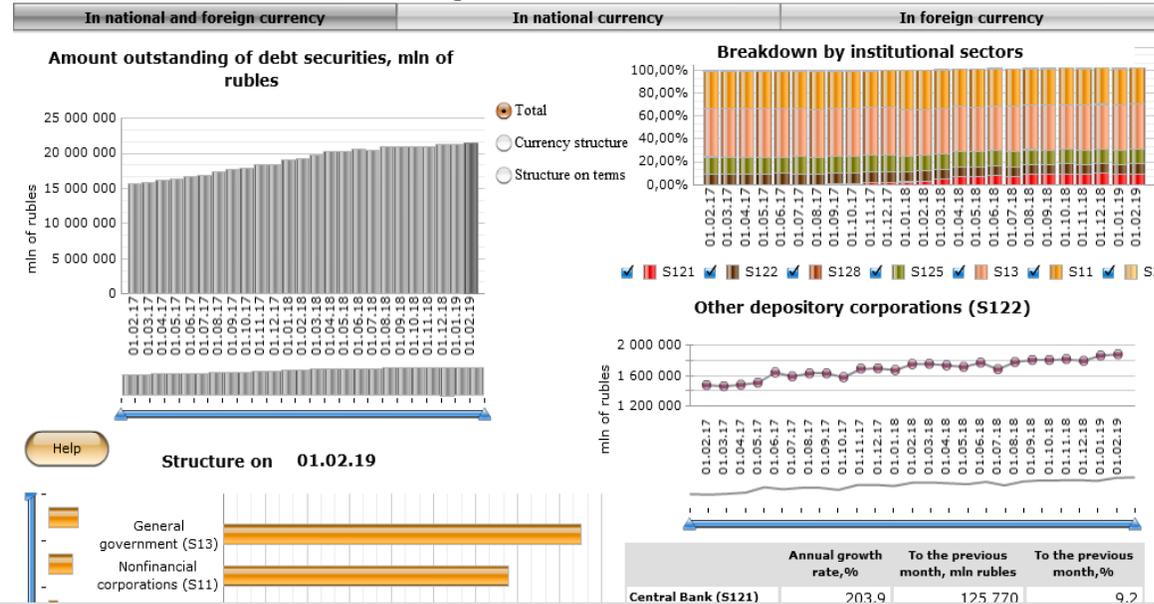
Securities Statistics

Amount outstanding of debt securities provided by Other depository corporations to the Bank of Russia under a REPO

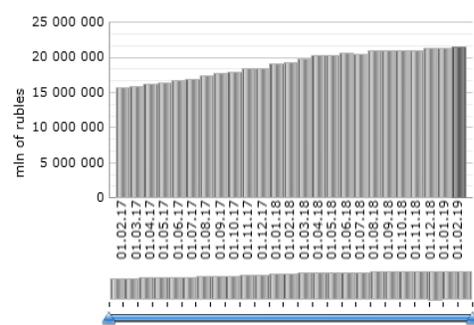
Amount outstanding of debt securities issued on domestic market

Dashboards

Amount outstanding of debt securities issued on domestic market



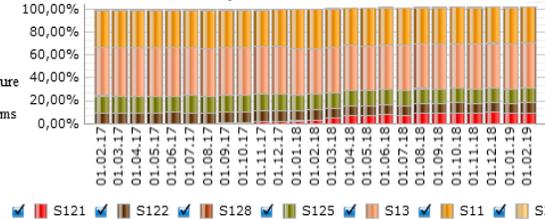
Amount outstanding of debt securities, mln of rubles



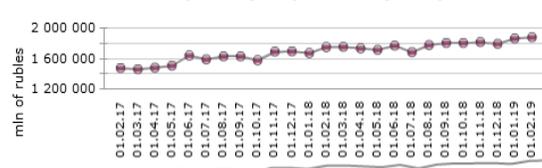
Structure on 01.02.19



Breakdown by institutional sectors

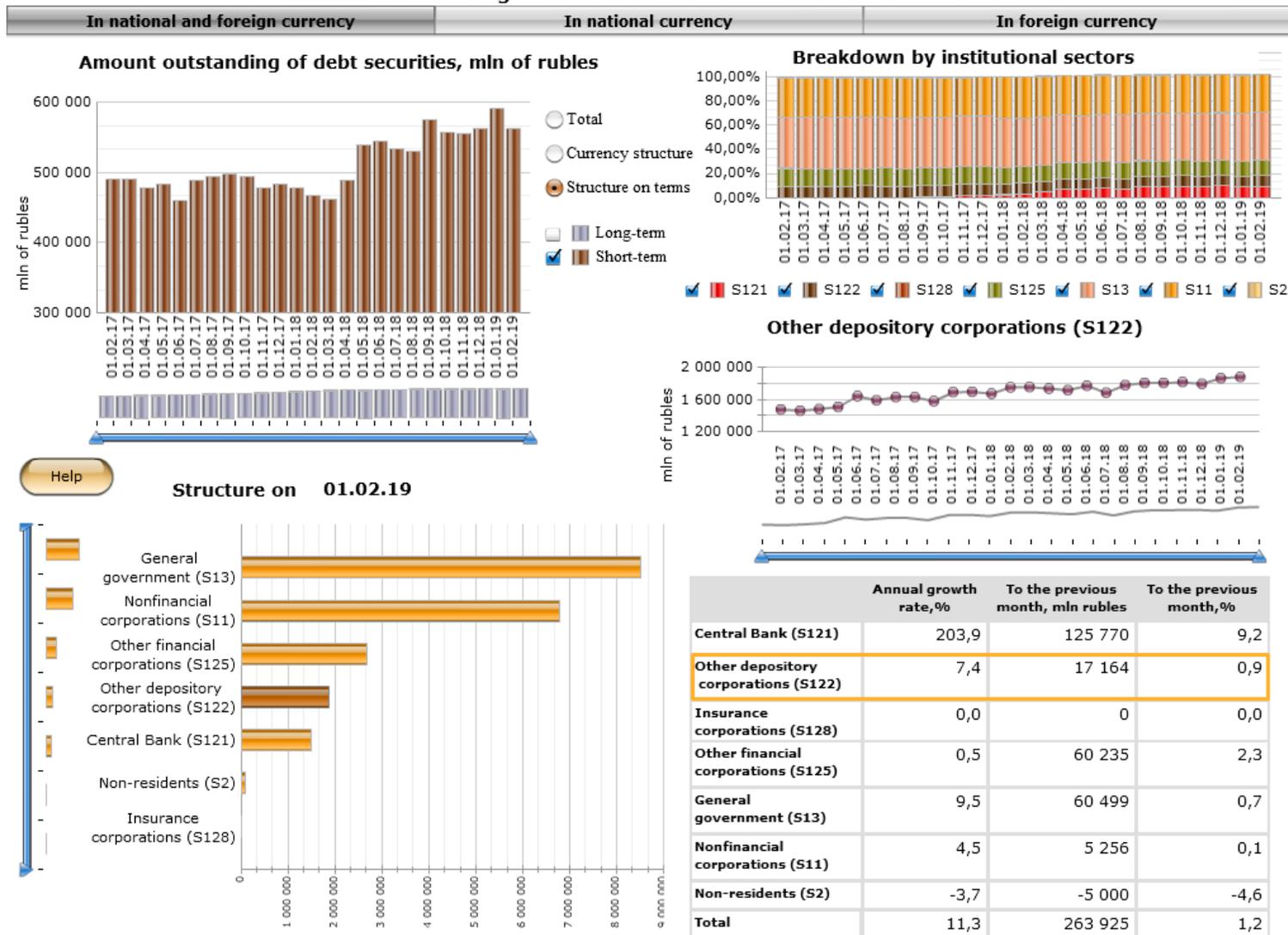


Other depository corporations (S122)



Dashboards

Amount outstanding of debt securities issued on domestic market



Further developments (DGI-II requirements Recommendation #7)

- Published on the website: http://www.cbr.ru/eng/statistics/macro_fin_stat/strategy_e.pdf
- Quality of data improvement based on:
 - International statistics standards and data gaps initiatives
 - Introduction of micro-databases into the statistical activity
- Use of modern IT components
- Automatization of all processes
- From-whom-to-whom tables
- Further development of the methodology for compiling indicators of quarterly sectoral financial accounts and balance sheets
- The expansion of the published indicators
- The reduction of the time lag of publications



Bank of Russia

THANK YOU FOR YOUR ATTENTION

ILGİNİZ İÇİN TEŞEKKÜRLER

Piruz Alieva
Statistics & Data Management Department

Workshop on the use of financial accounts
Istanbul, 18-20 March 2019

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

From financial accounts towards integrated accounts: the case of Turkey¹

Aycan Ozek,
Central Bank of the Republic of Turkey

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

From Financial Accounts Towards Integrated Accounts: Case of Turkey

Aycan Ozek

Statistics Department
Monetary and Financial Data Division

March 18-20, 2019 | Workshop on the Use of Financial Accounts, Istanbul

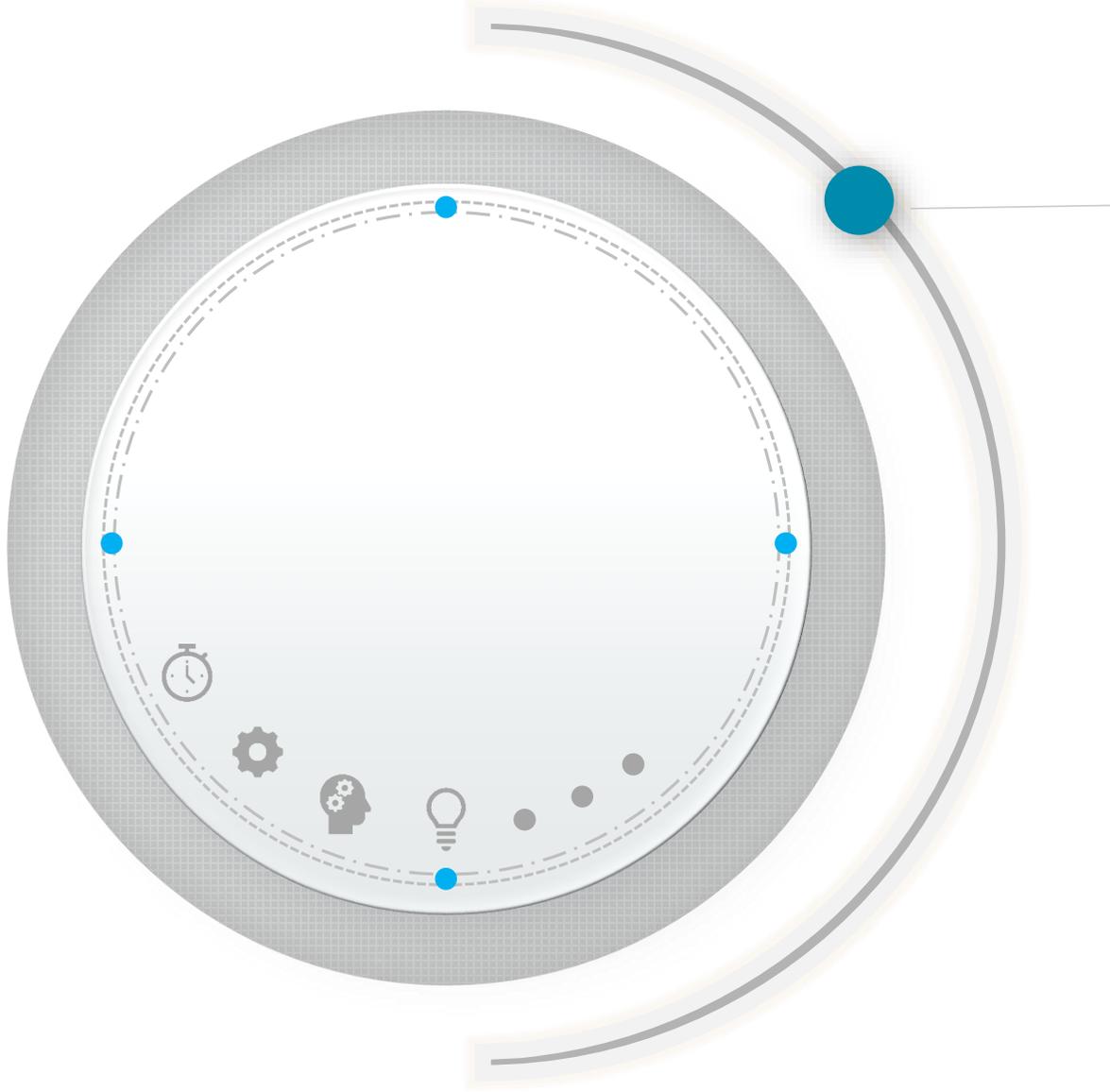
OUTLINE

MOTIVATION AND
BACKGROUND

CONSISTENCY ISSUES BY
SECTOR

WAY FORWARD

MOTIVATION AND BACKGROUND



International Initiatives

G 20 DATA GAPS INITIATIVE



Recommendation II.8. Sectoral Accounts

Target: Disseminate non-financial, financial accounts and balance sheet data ^{8/1}

- Dissemination of non-financial accounts transactions (Annual data)

- Dissemination of non-financial accounts transactions (Quarterly data)

- Dissemination of stocks of non-financial assets (Annual data)

- Dissemination of financial accounts and balance sheets (Annual data)

- Dissemination of financial accounts and balance sheets (Quarterly data)



Home > Publications > Reports > Macroeconomic and sectoral statistics > Euro area accounts > Euro area > **2. Integrated economic accounts**

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2. Integrated economic accounts

[2.1 Non-financial accounts](#)

[2.2 Financial accounts](#)



European Commission > Eurostat > Data > Database

Information

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Population Census 2011 [↗](#)

Experimental statistics

Bulk download

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SDMX Web Services

Json and Unicode Web Services

Access to microdata

GISCO: Geographical Information and maps

▲ Metadata

ESS Reference Metadata

Reporting Standards

Classifications

DATABASE

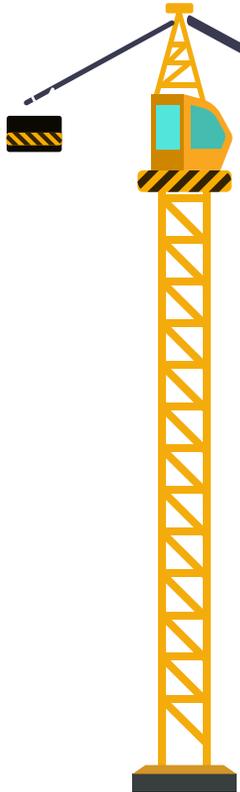
Data navigation tree

Database by themes

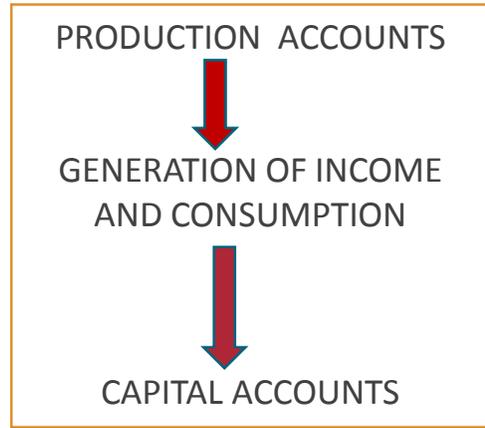
- General and regional statistics
- Economy and finance
 - National accounts (ESA 2010) (na10) [M](#)
 - Annual national accounts (nama10) [M](#) (Explanations) (Overview)
 - Quarterly national accounts (nama_10) [M](#) (Explanations) (Overview)
 - Supply, use and input-output tables (naio_10) [M](#)
 - Annual sector accounts (ESA 2010) (nasa_10) (Explanations)
 - Quarterly sector accounts (ESA 2010) (naso_10) (Explanations)
 - National accounts - international data cooperation (naid_10) [M](#) (Explanations)
 - Government statistics (gov)

Consistency Concern

B9_NON FINANCIAL ACCOUNTS



Net Lending / Borrowing



B9F_FINANCIAL ACCOUNTS

Timeline



Institutional
Sector Accounts
by Turkstat



Integrated Accounts
Working Group



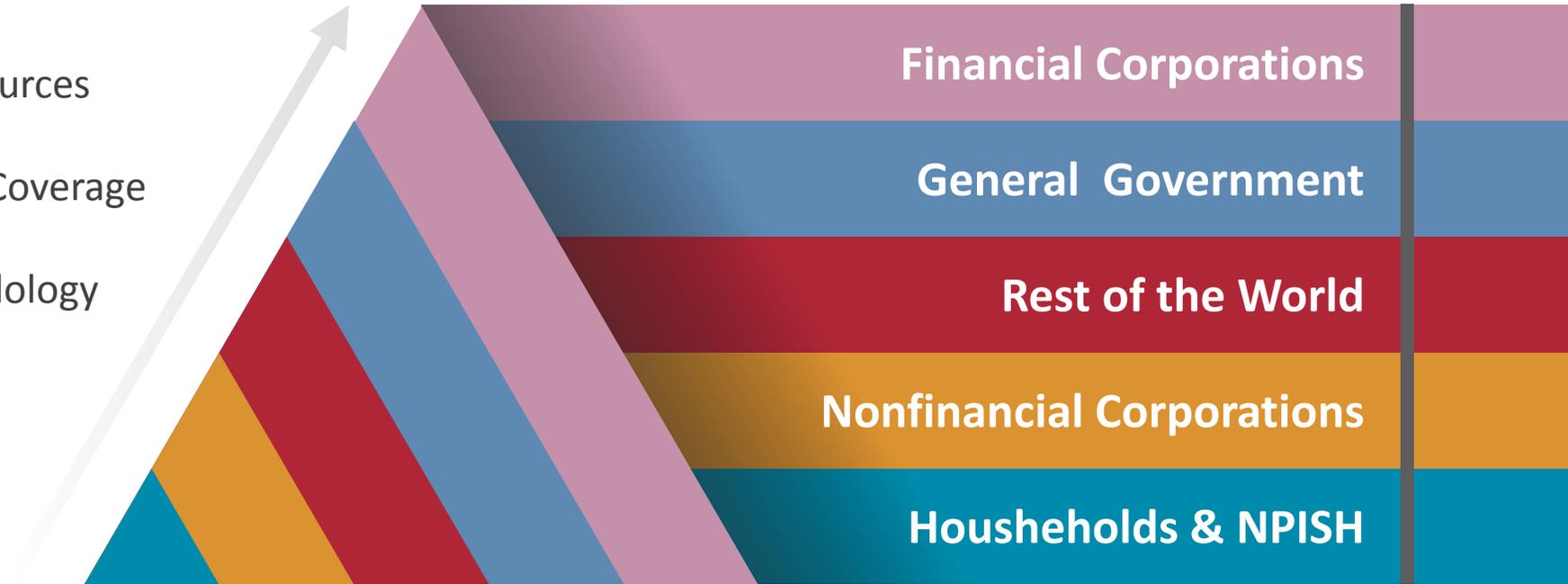
1st Workshop



2nd Workshop

Integrated Accounts Working Group

- Data Sources
- Sector Coverage
- Methodology

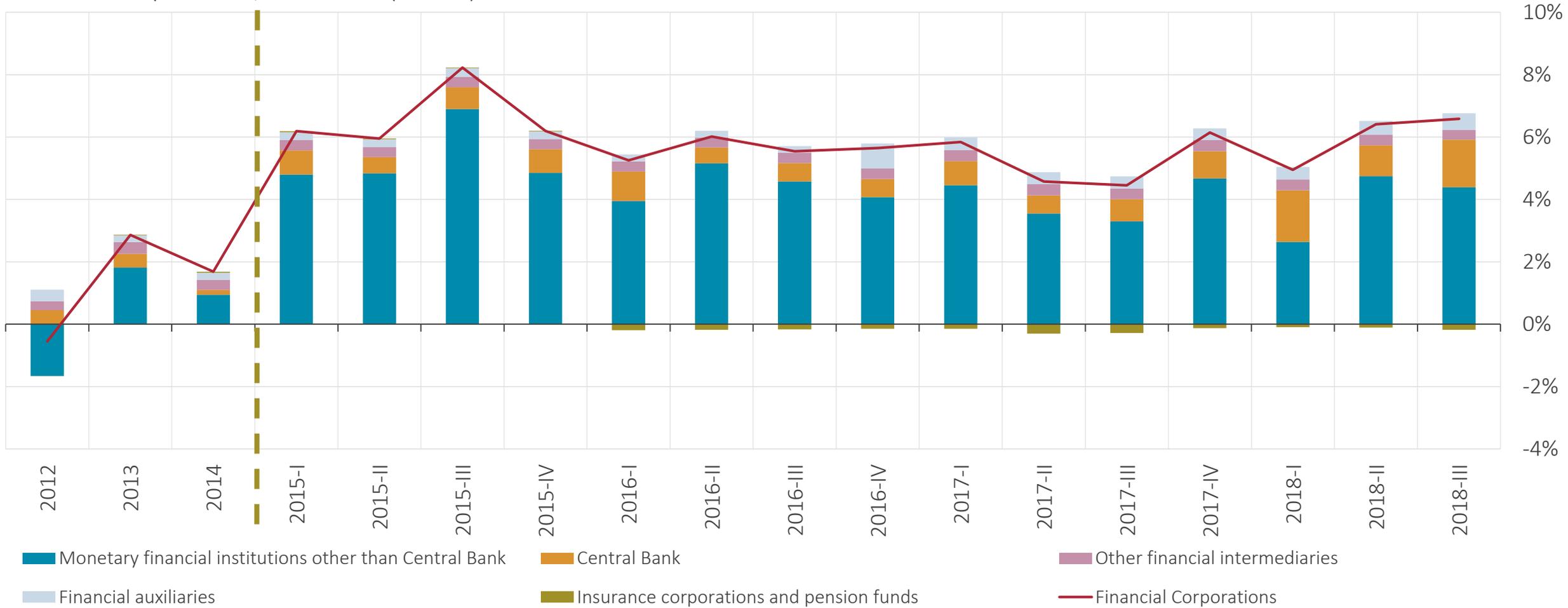




CONSISTENCY
ISSUES BY SECTOR

Financial Corporations

Financial Corporations, Net Worth (% GDP)



Financial Corporations



PILOT STUDY
AND
CONSULTANCE



INSURANCE
SECTOR TASK
FORCE

- Eliminate discrepancies in FA and NFA
- Data warehouse for all financial reports (IIMC)
- Counterpart data of ITC

DIFFERENT
DATA SOURCES



WORK AT
SUBSECTOR
LEVEL



NFA sub sector
breakdown is not
sufficient

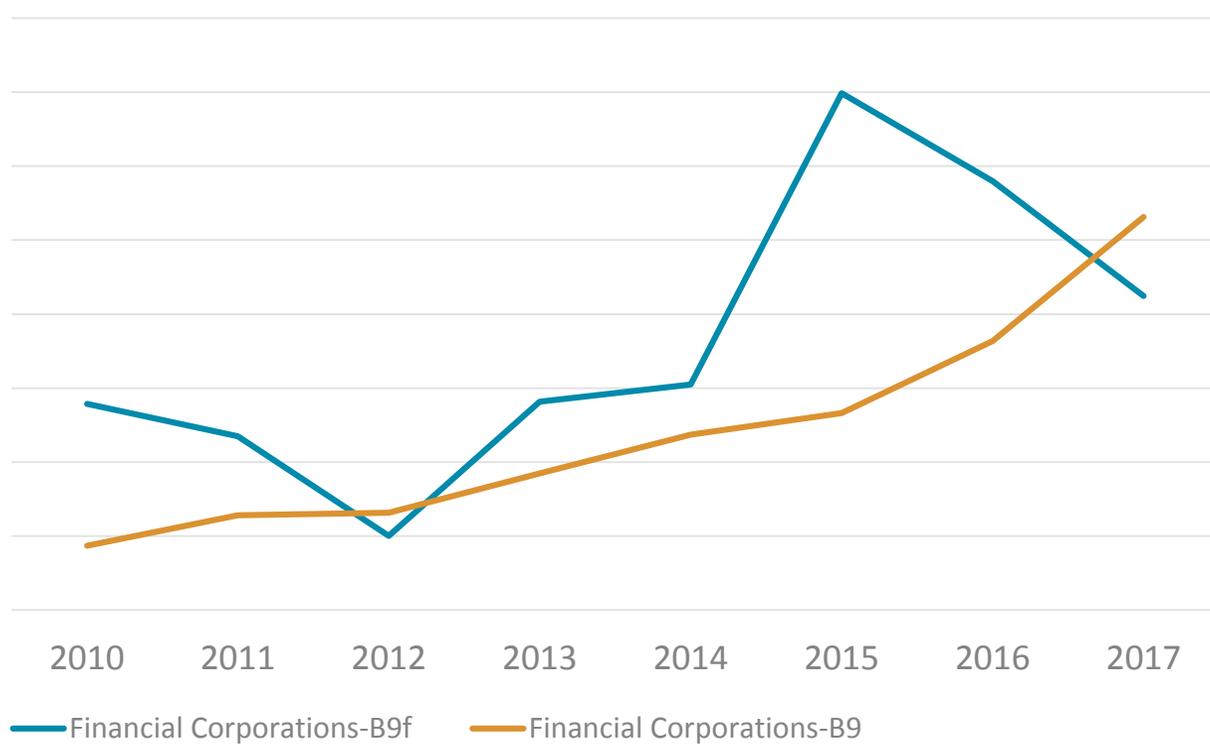
IMPROVEMENT
IN DATA
COVERAGE



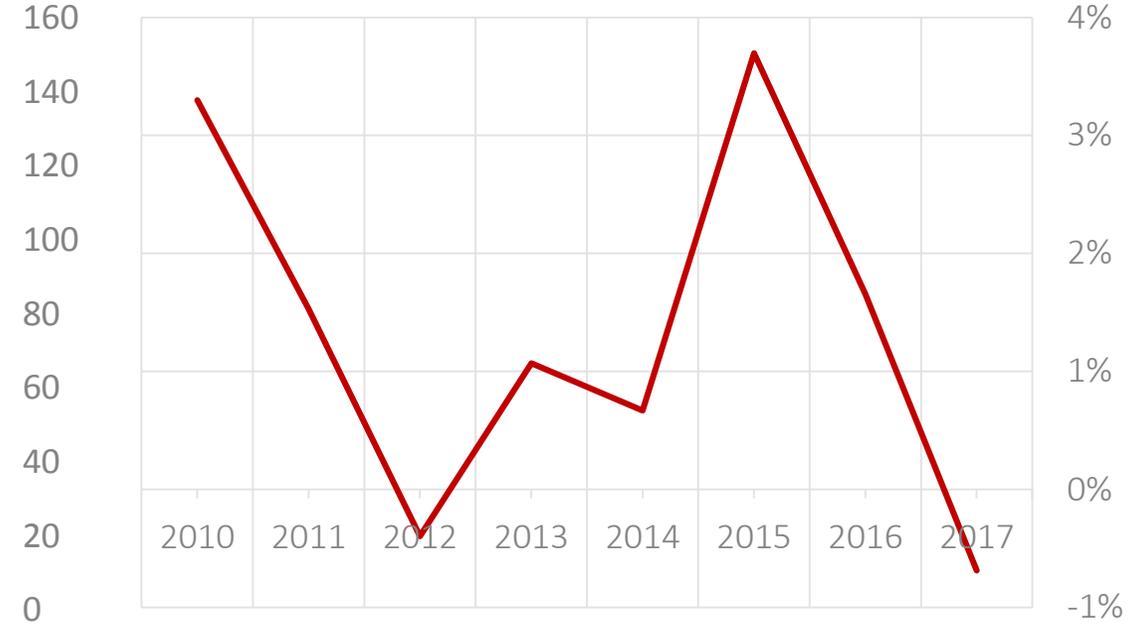
- Investment funds
- Financial auxiliaries

Financial Corporations

Net Lending/Borrowing (thousand TRY)



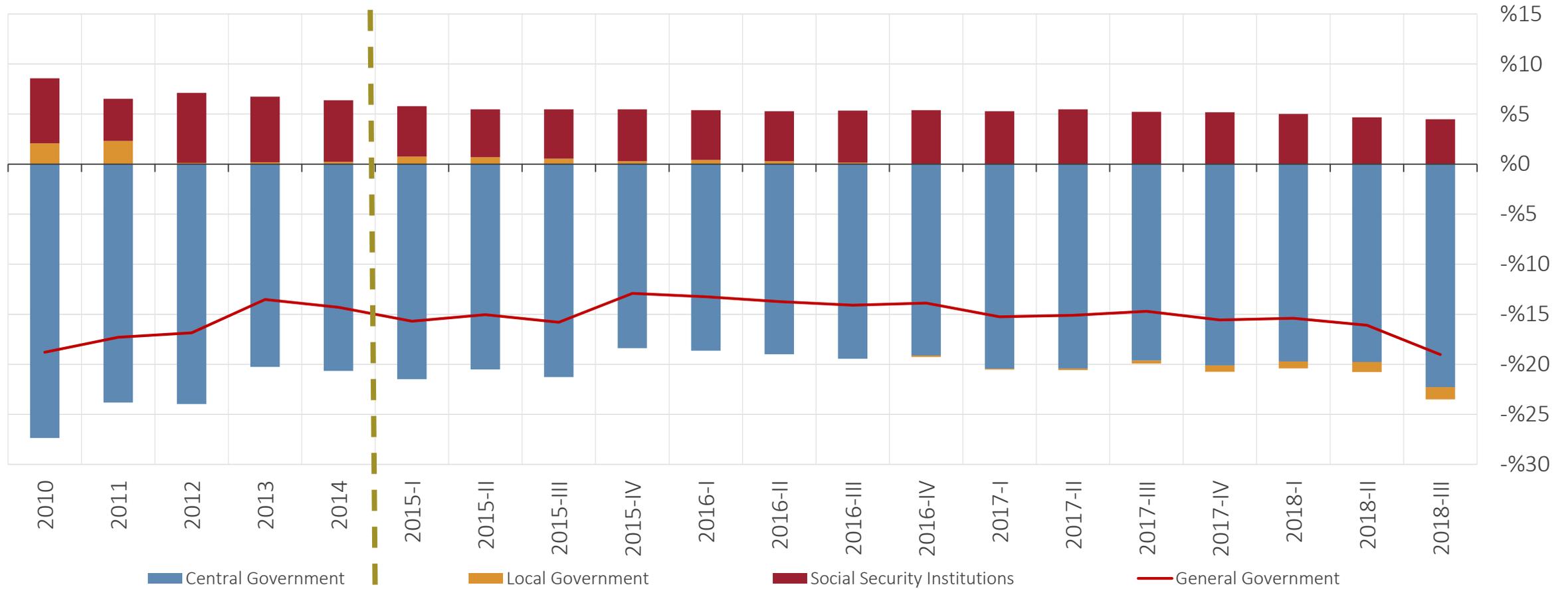
Coherence Indicator (% GDP)*



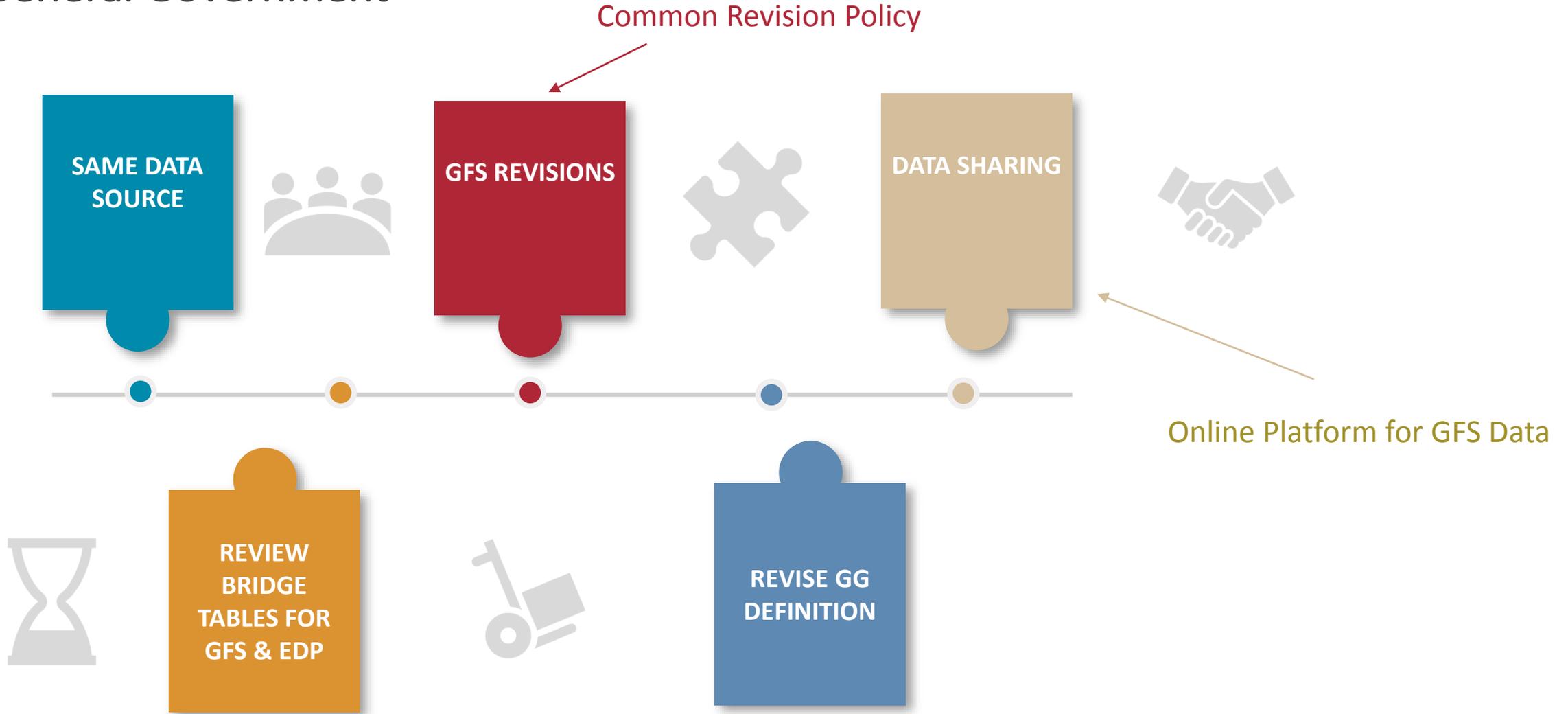
* Coherence indicator= (B9F-B9)/GDP

General Government

General Government, Net Worth (% GDP)

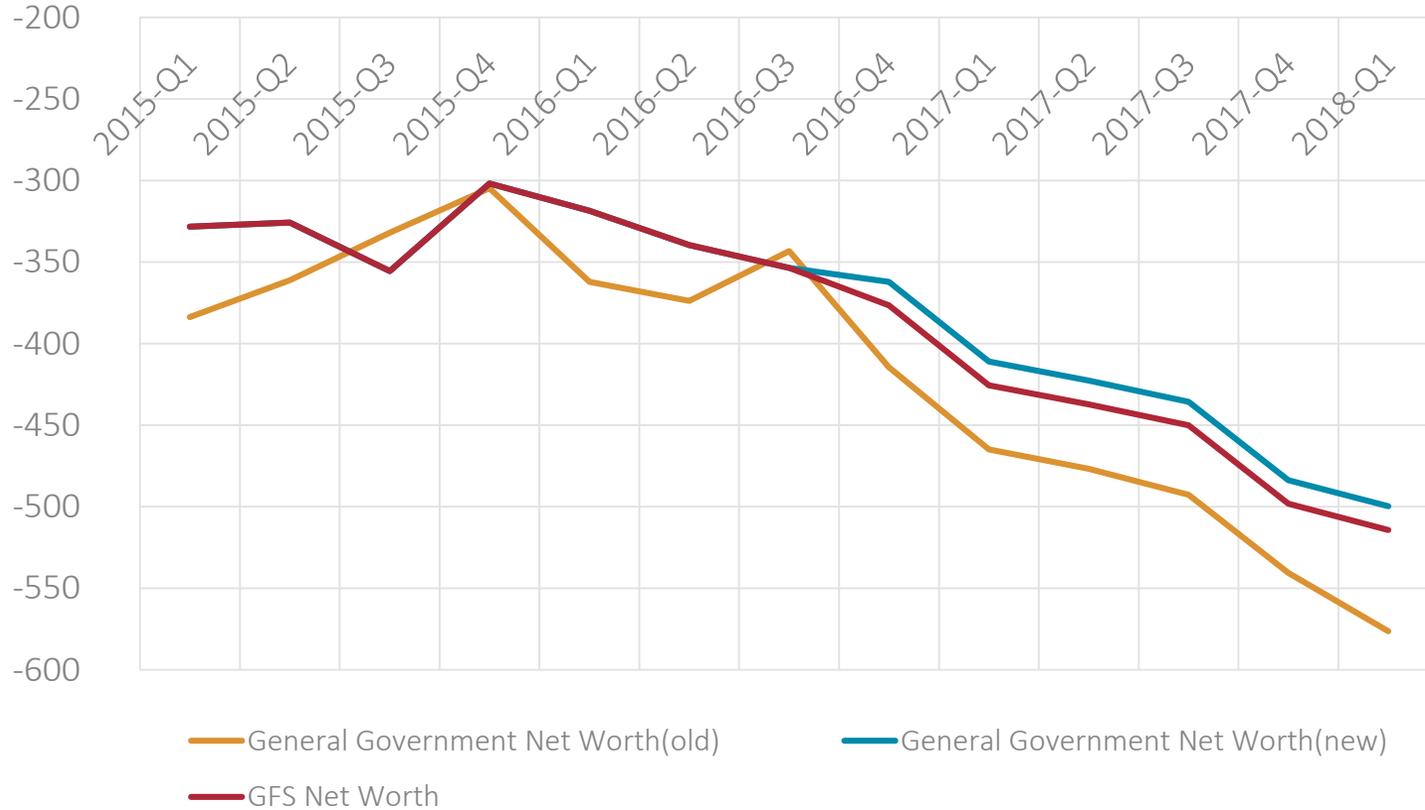


General Government



General Government _After Revision

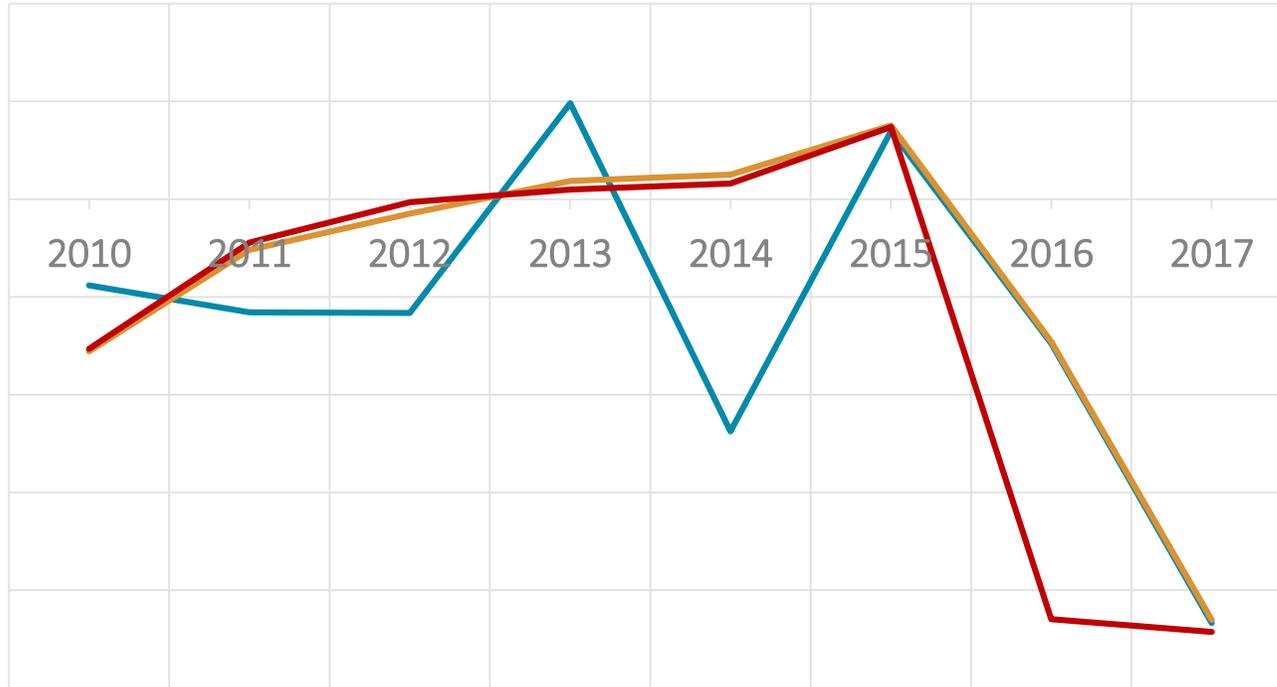
General Government, (TRY billion)



- General government data is revised beginning the 1st Quarter of 2015
- The biggest effect is on central government sector for 2015 and 2016 data periods
- The biggest change is observed in other accounts payable/receivable in all sectors
- Maturity breakdowns are updated for loans and debt securities
- PPPs are the only difference between FA and GFS since 2016 Q4

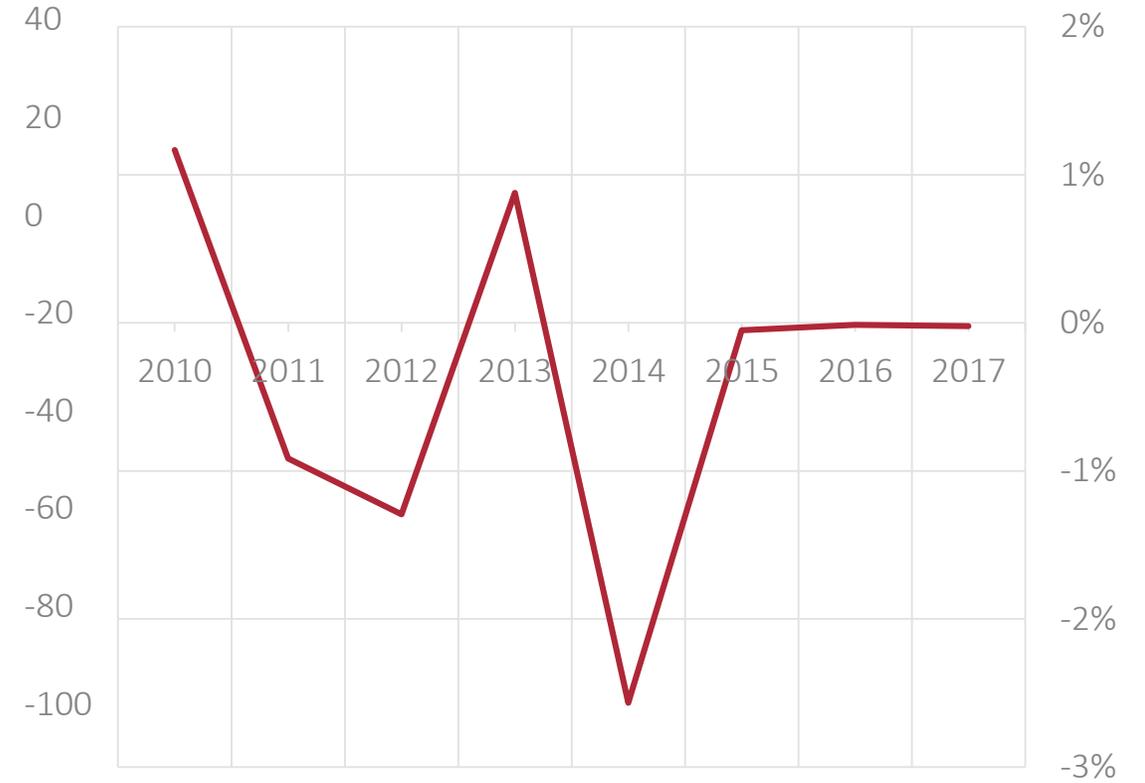
General Government

Net Lending/Borrowing (thousand TRY)



— General Government-B9f — General Government-B9 — GFS

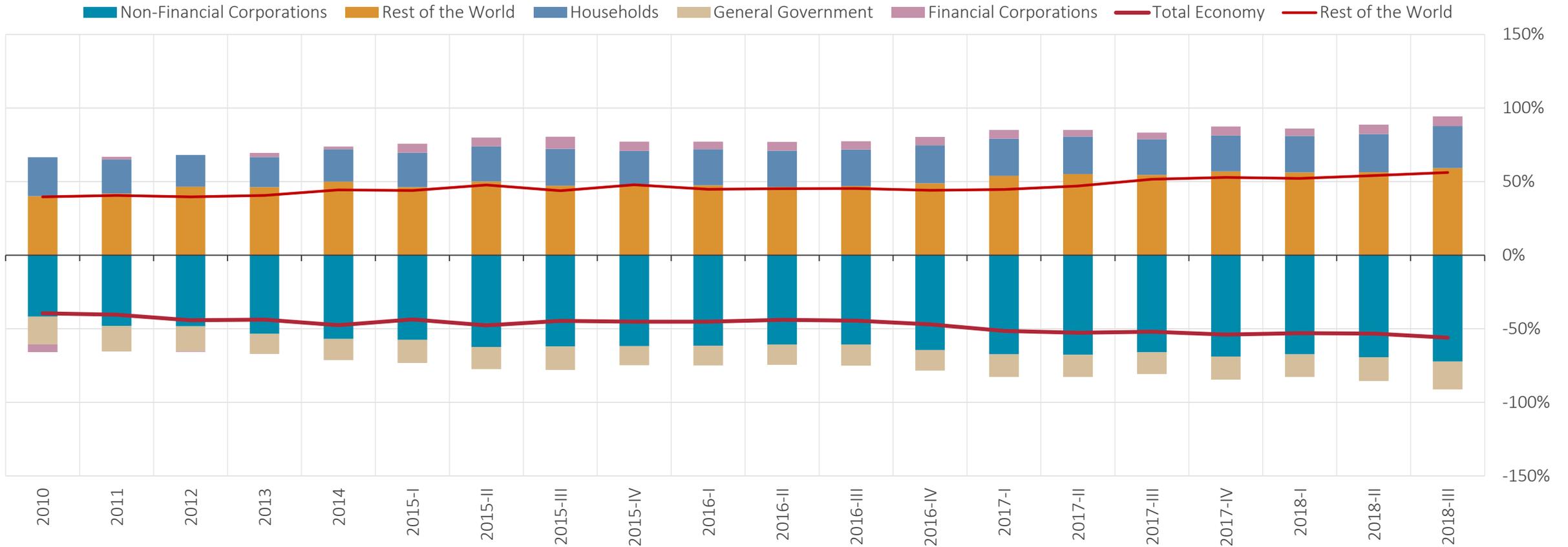
Coherence Indicator (% GDP)*



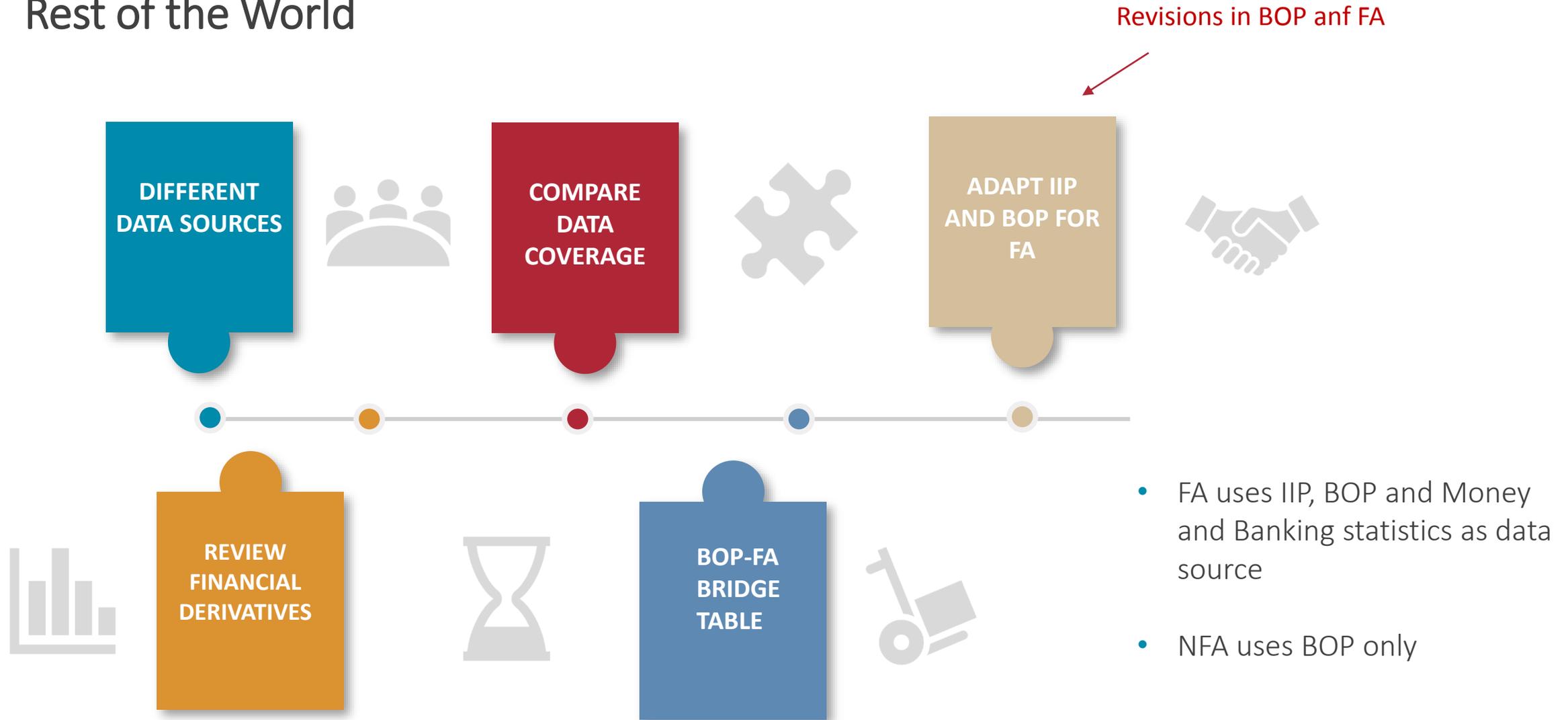
* Coherence indicator= (B9F-B9)/GDP

Rest of the World

Net Worth by Sectors (% GDP)



Rest of the World



Rest of the World

Financial assets
Monetary gold and SDRs
Currency and deposits
Debt securities
Loans
Equity and IF Shares/units
Financial derivatives
Other accounts receivable
Trade credits and advances
Other
Liabilities
Currency and deposits
Debt securities
Loans
Equity and IF Shares/units
Financial derivatives
Other accounts payable
Trade credits and advances
Other
Financial net worth

Cash Base

Accrual Base

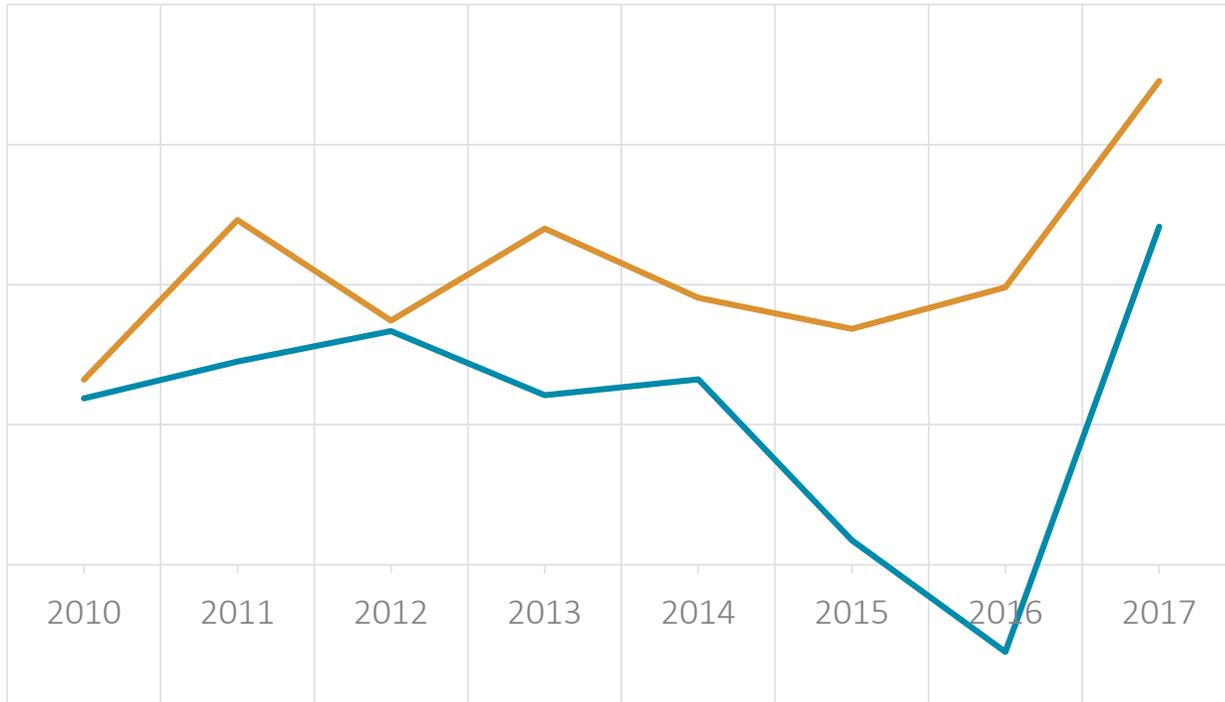


Instrument	IIP	FA
Deposits (precious metal deposit account)	Not included	Included
Equity (shares)	Fully covered	Partially covered
Financial derivatives	Not included	Included
Other AR/AP-Other	Not included	Included



Rest of the World

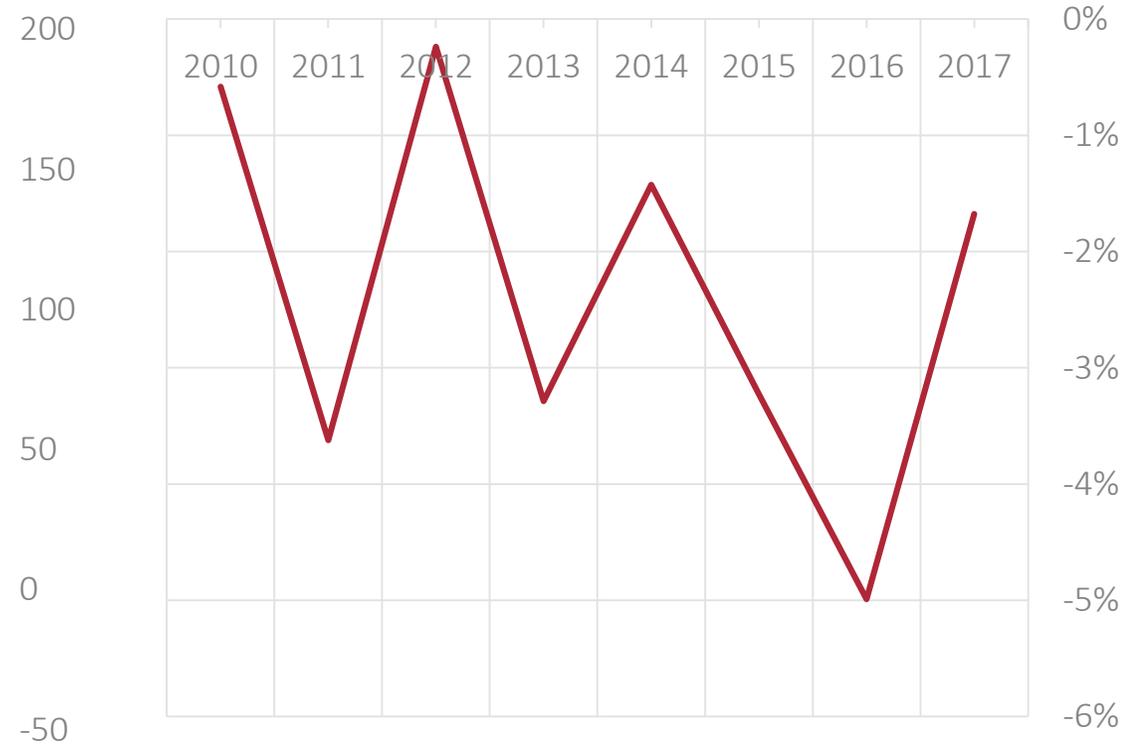
Net Lending/Borrowing (thousand TRY)



Rest of the World-B9f

Rest of the World-B9

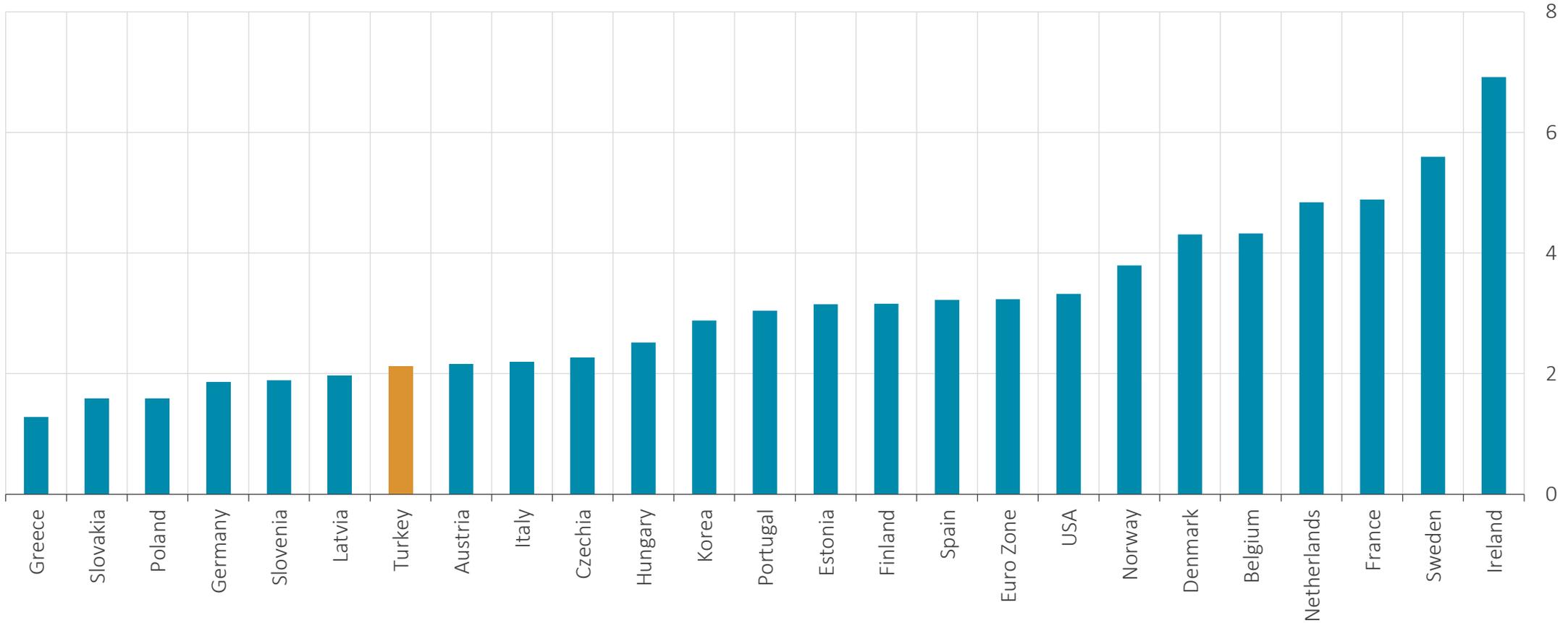
Coherence Indicator (% GDP)*



* Coherence indicator= (B9F-B9)/GDP

Non Financial Corporations

Non Financial Corporations' Liabilities / GDP, Country Comparison



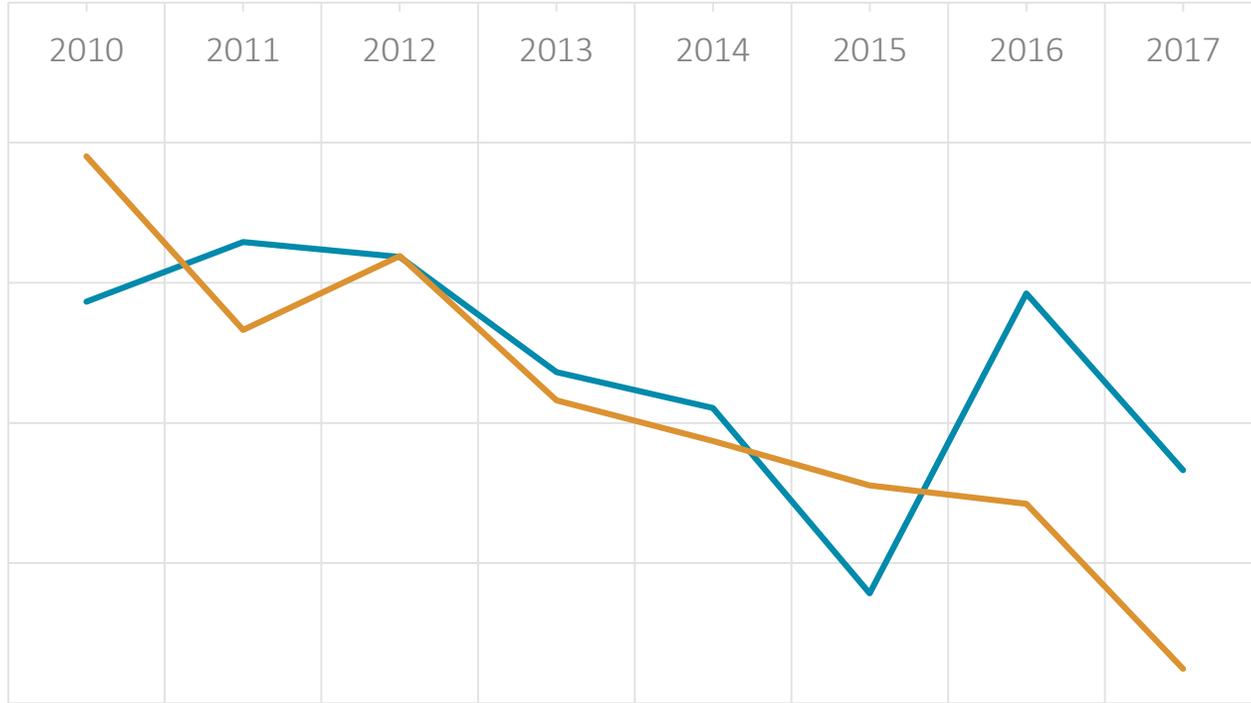
Non Financial Corporations



- Same administrative data (Revenue Administration) in FA for some instruments, mainly counterpart data
- Unrecorded economy is included in NFA
- Will be compared after all sectors are consistent

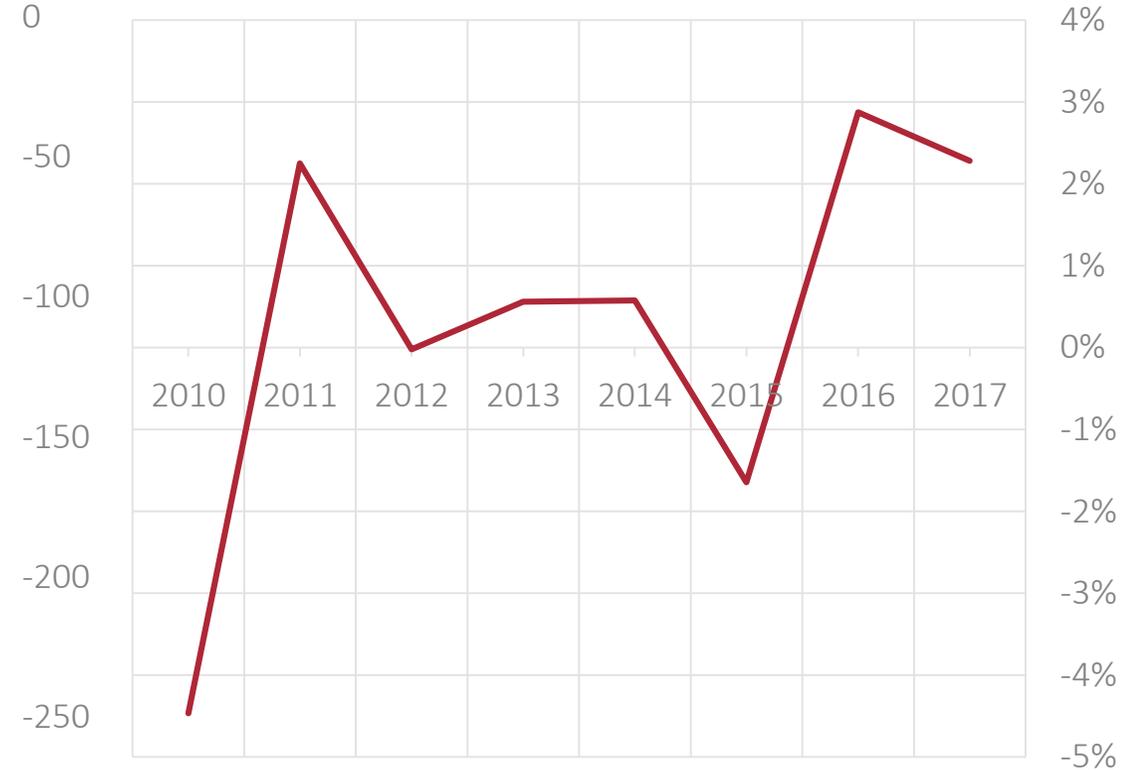
Non Financial Corporations

Net Lending/Borrowing (thousand TRY)



— Non Financial Corporations-B9f — Non Financial Corporations-B9

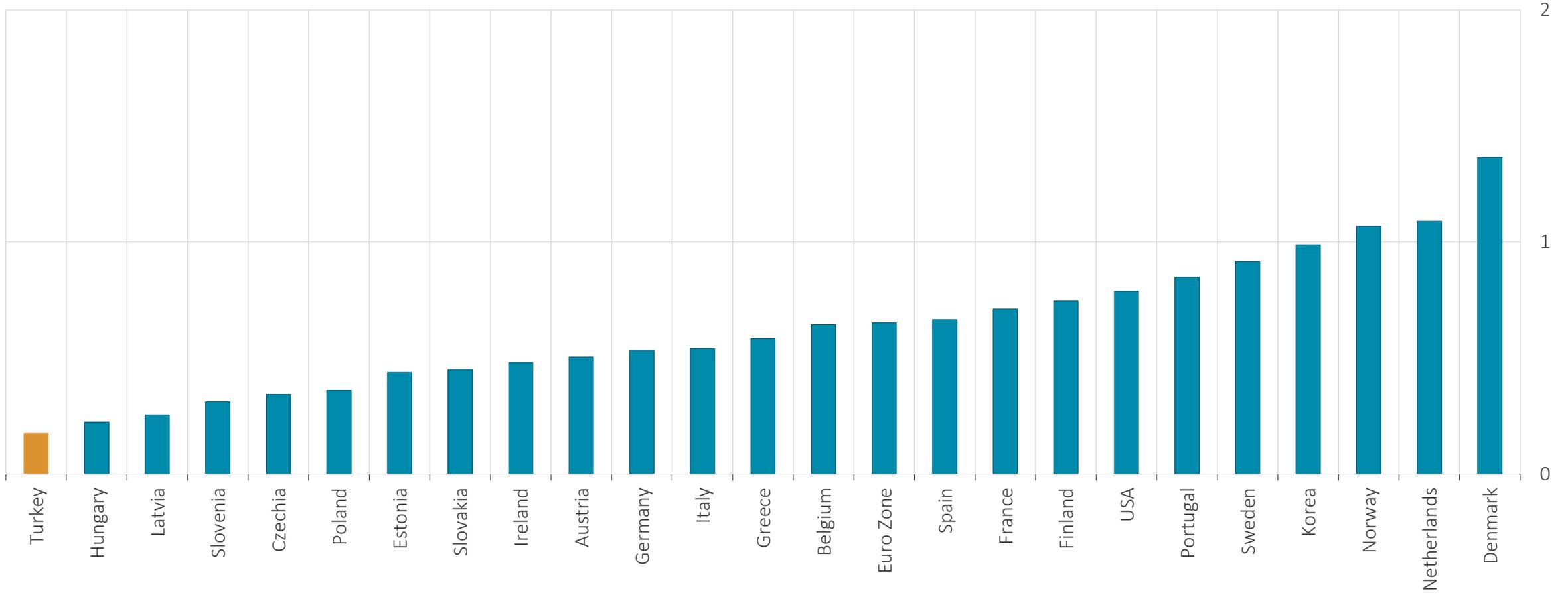
Coherence Indicator (% GDP)*



* Coherence indicator= (B9F-B9)/GDP

Households & NPISH

Households' Liabilities / GDP, Country Comparison



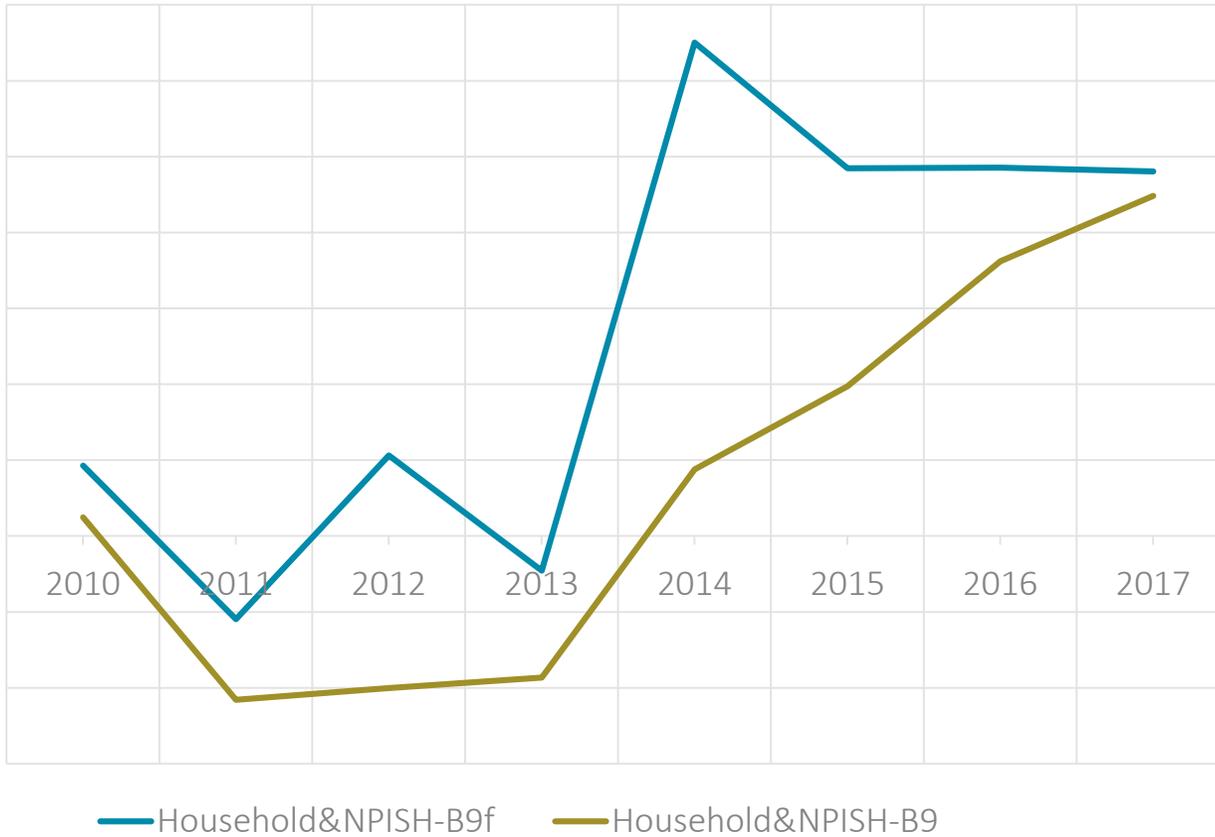
Households & NPISH



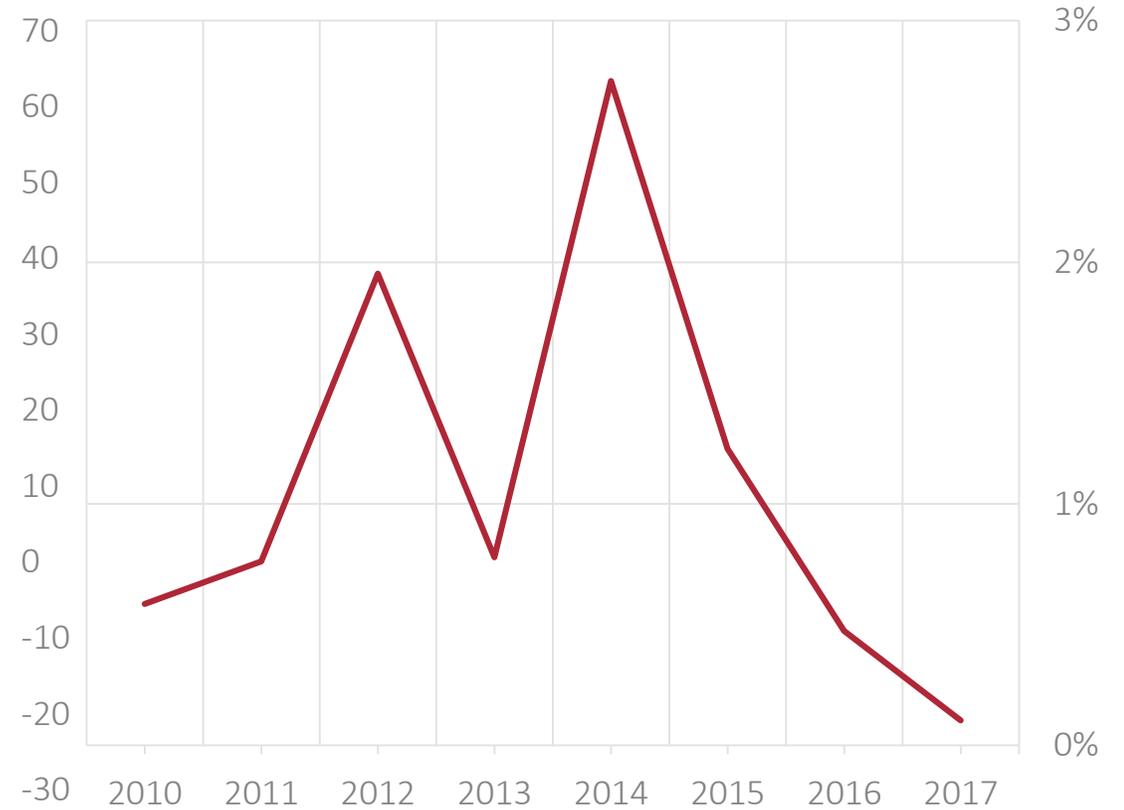
- Same administrative data in FA (Revenue Administration) for NPISH for some instruments, mainly counterpart data
- Will be compared after all sectors are consistent

Households & NPISH

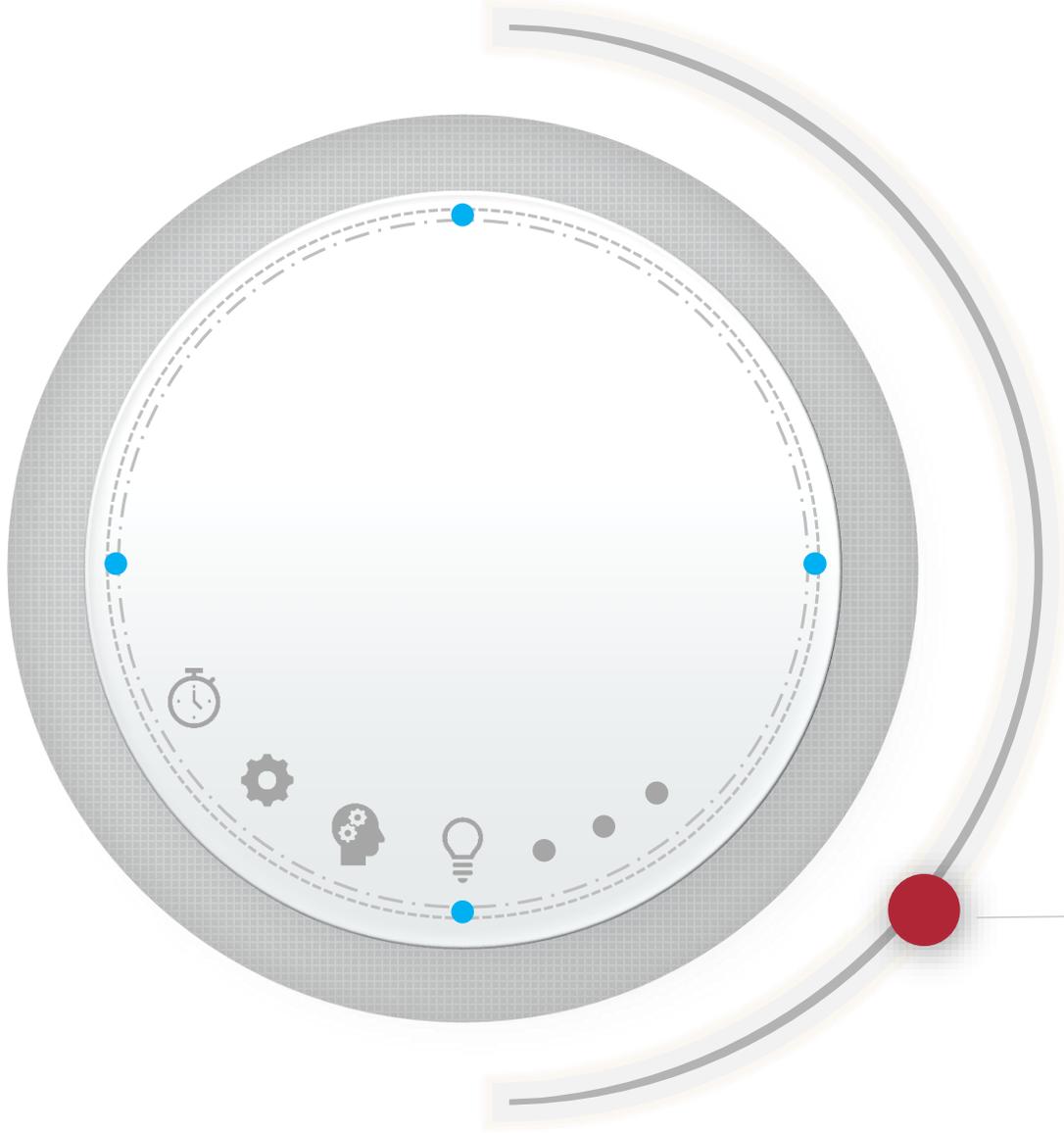
Net Lending/Borrowing (thousand TRY)



Coherence Indicator (% GDP)*



* Coherence indicator= (B9F-B9)/GDP



WAY FORWARD

Way Forward



Data Sharing

- GFS Online Platform
- Insurance sector data

Consistency & Revisions

Common Revision Policy

Semi Annual Workshops



Bridge Tables

- General Government
- Non Financial Corporations
- Insurance Corporations

Improvement in Coverage

- Investment Funds
- Financial Auxiliaries

Thank you...

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Director

Monetary and Financial Data Division

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IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Policy uses of financial accounts: The U.S. Fed's perspective¹

Susan Hume McIntosh and Elizabeth Holmquist,
Board of Governors of the Federal Reserve System

¹ This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



Policy Uses of Financial Accounts: The U.S. Fed's Perspective

Susan Hume McIntosh and Elizabeth Holmquist

Flow of Funds Section

Board of Governors of the Federal Reserve System

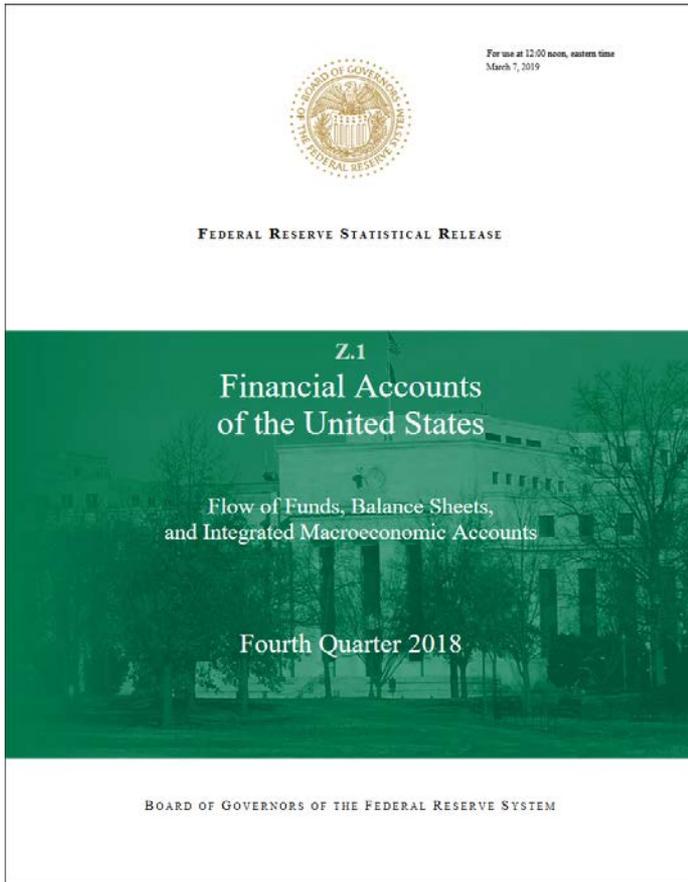
Workshop on the Use of Financial Accounts

Istanbul, Turkey

March 19, 2019



Financial Accounts of the United States



www.federalreserve.gov/releases/Z1/

- Time series:
 - Annual 1945 – 2018
 - Quarterly 1951:Q4 – 2018:Q4
- Includes flows, levels, some balance sheets, Integrated Macroeconomic Accounts, and more
- Published 10 weeks after the end of the reference quarter
- All data available in the Federal Reserve's Data Download Program (DDP)
www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1

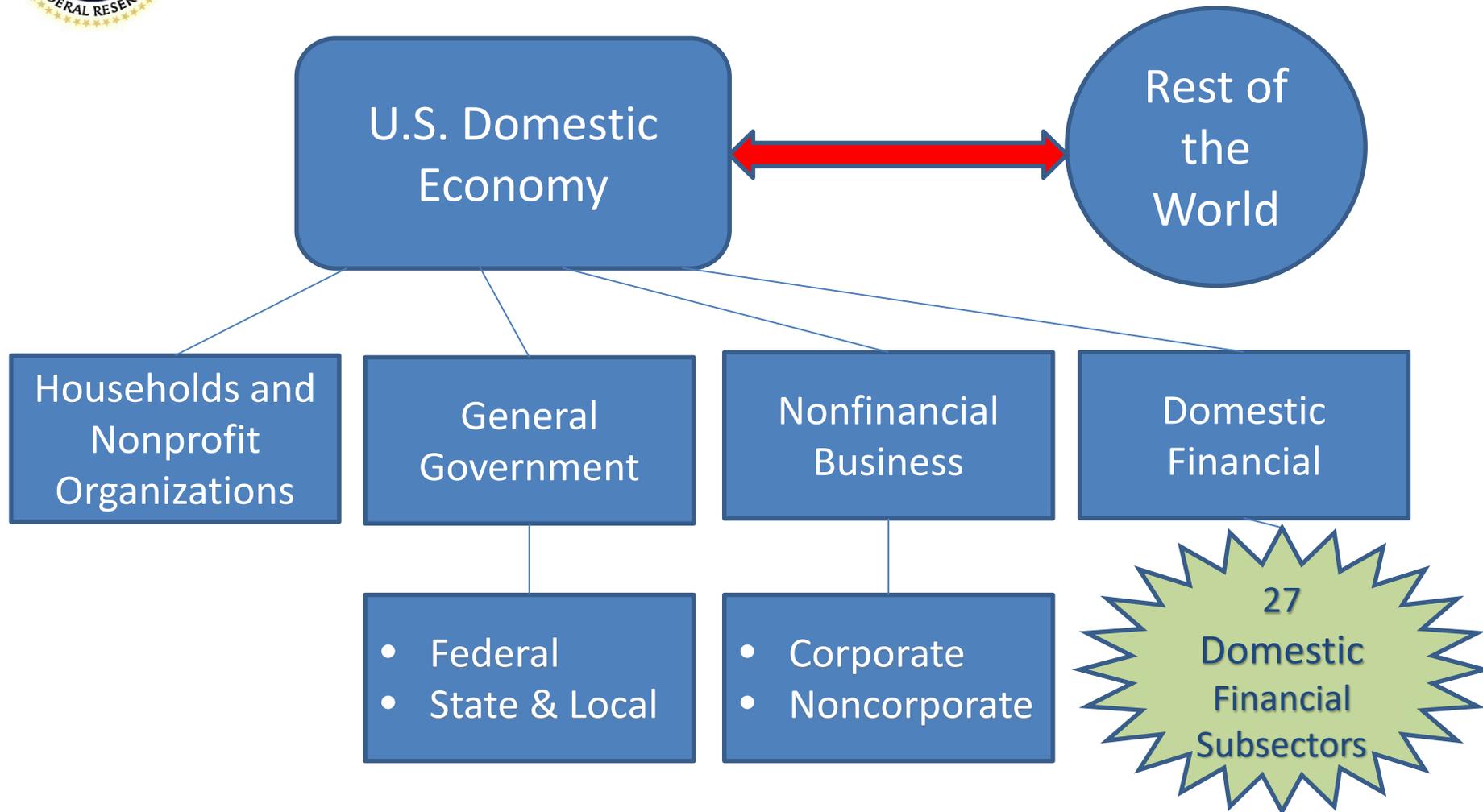


Uses of the Financial Accounts

- Measure the acquisition of physical and financial assets throughout the U.S. economy
- Track the sources of funds used to acquire the assets
- Record the net volume of transactions in financial instruments
- Provide a means of analyzing the development of instruments and the behavior of sectors over business cycles
- Monitor the role of financial intermediaries in transferring funds between sectors

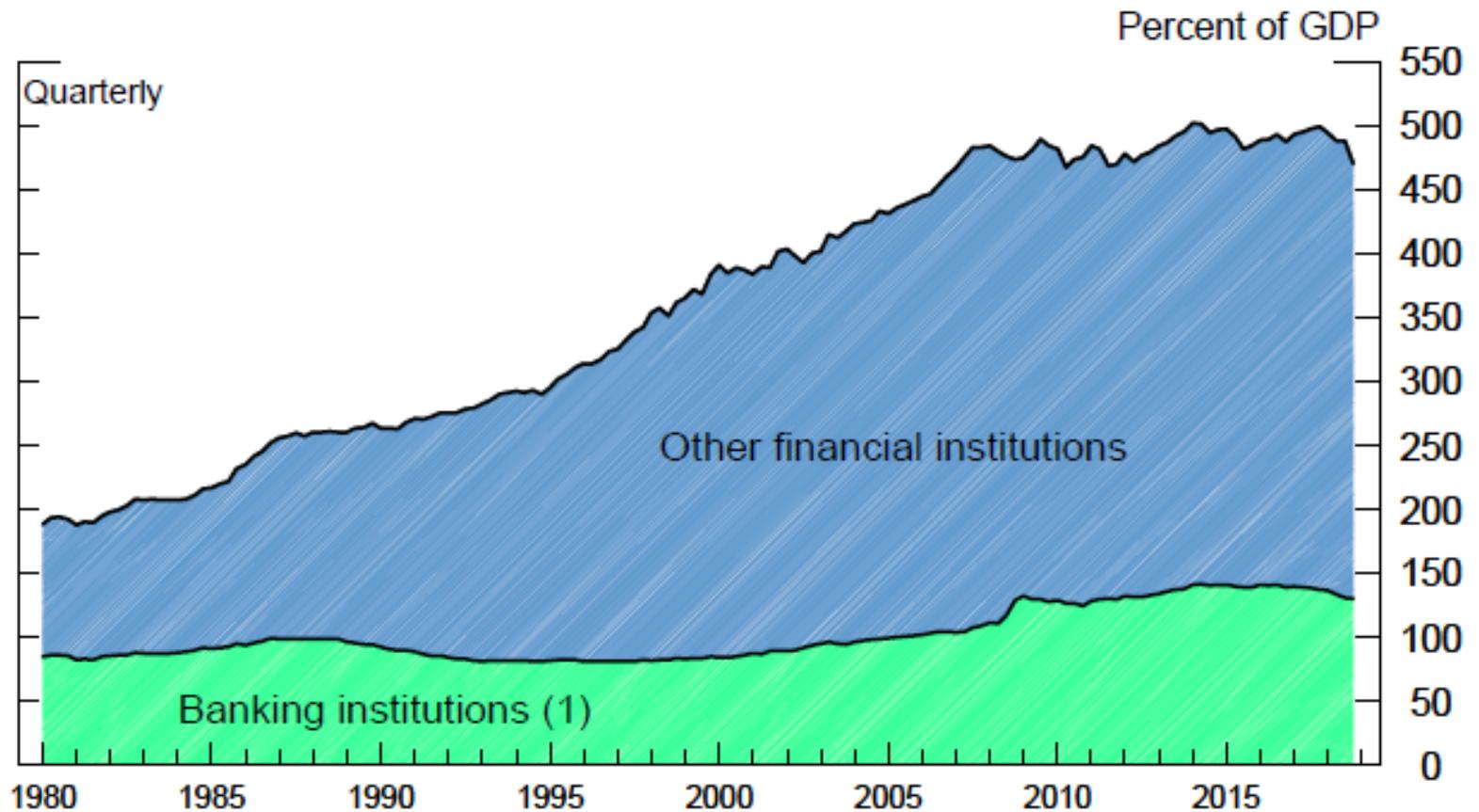


Sectors in the Financial Accounts





Financial Business Sector



Source: Financial Accounts of the United States, March 7, 2019.

(1) Includes the monetary authority, private depository institutions, and bank holding companies.

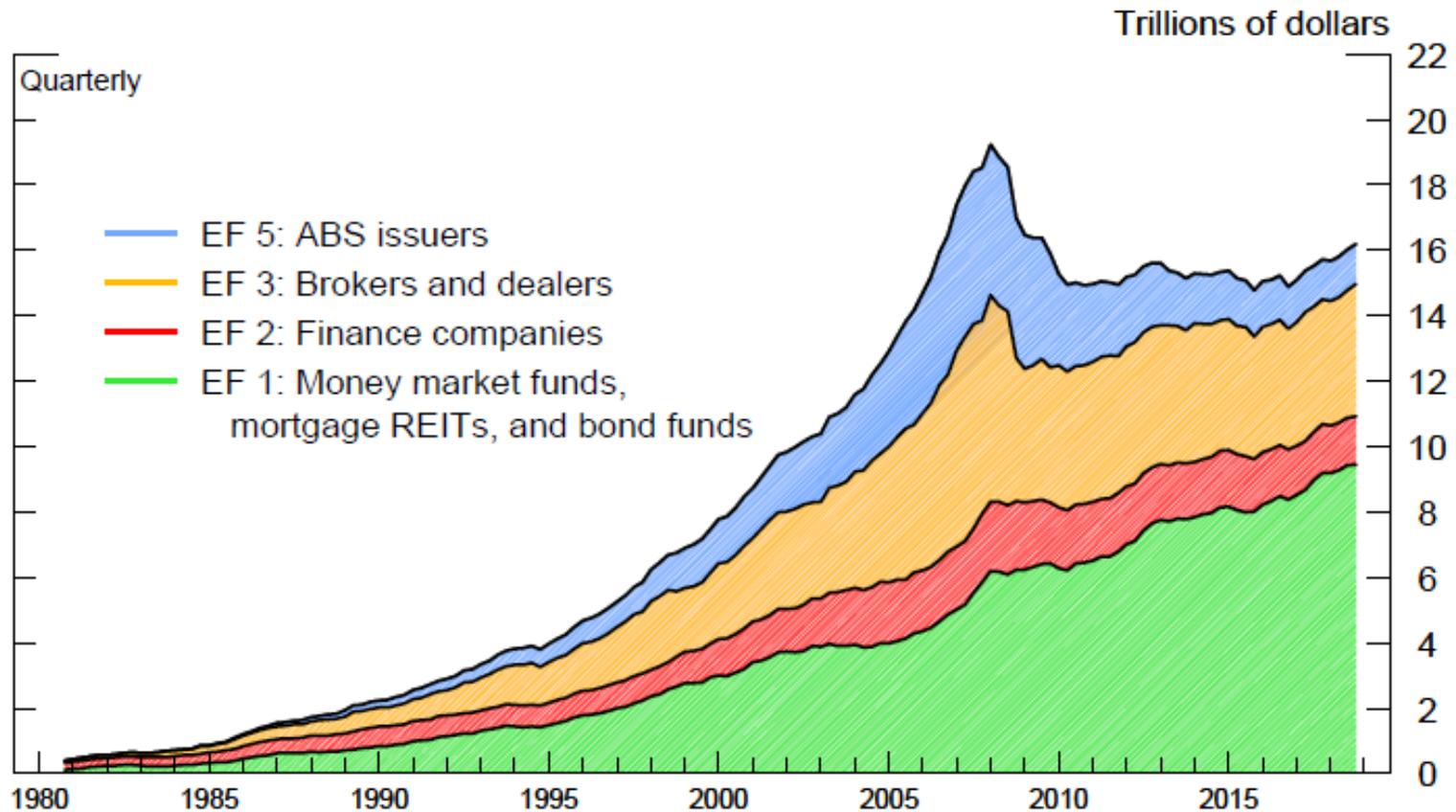


Shadow Banking by Economic Function

FSB: Entities by Economic Function	Financial Accounts: Sectors
1. Entities that are susceptible to runs	Money market funds, mortgage REITs, and bond funds
2. Lending dependent on short-term funding	Finance companies
3. Market intermediation dependent on short-term funding or secured funding of client assets	Security brokers and dealers and securities lending
4. Facilitating credit creation	Financial and mortgage guarantors
5. Securitization-based intermediation	Issuers of asset-backed securities



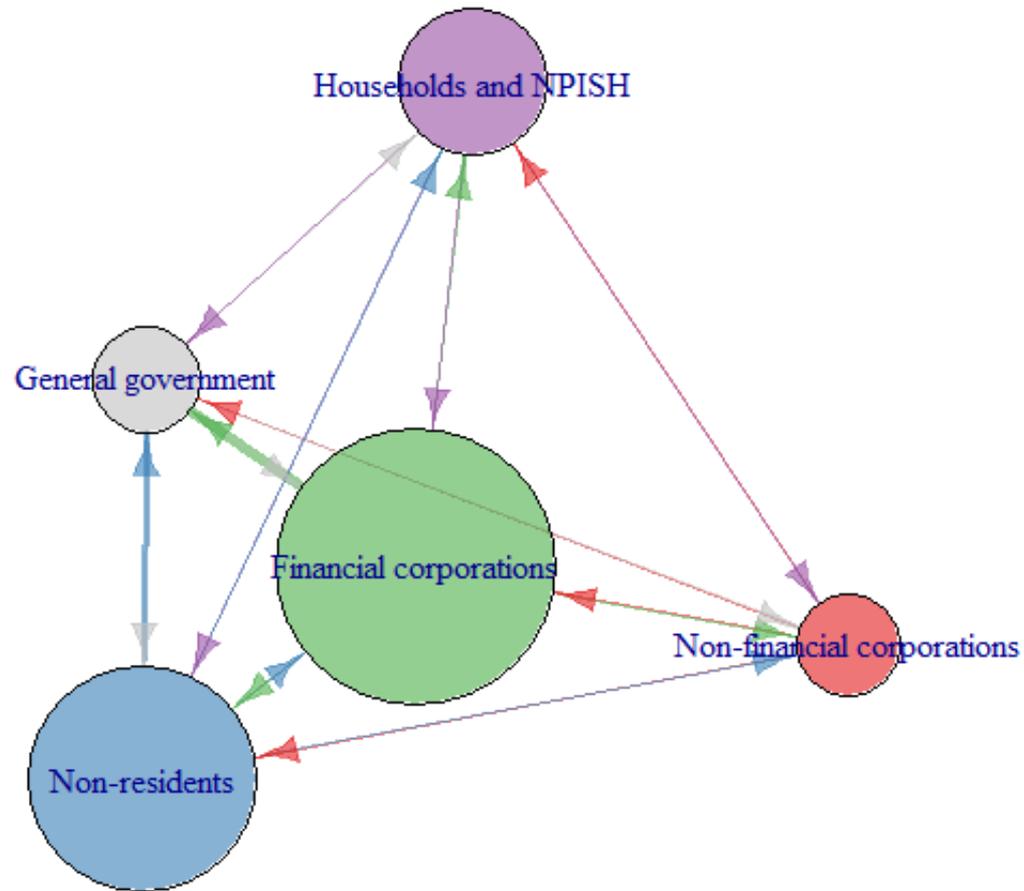
Shadow Banking by Economic Function



Source: Financial Accounts of the United States, March 7, 2019.

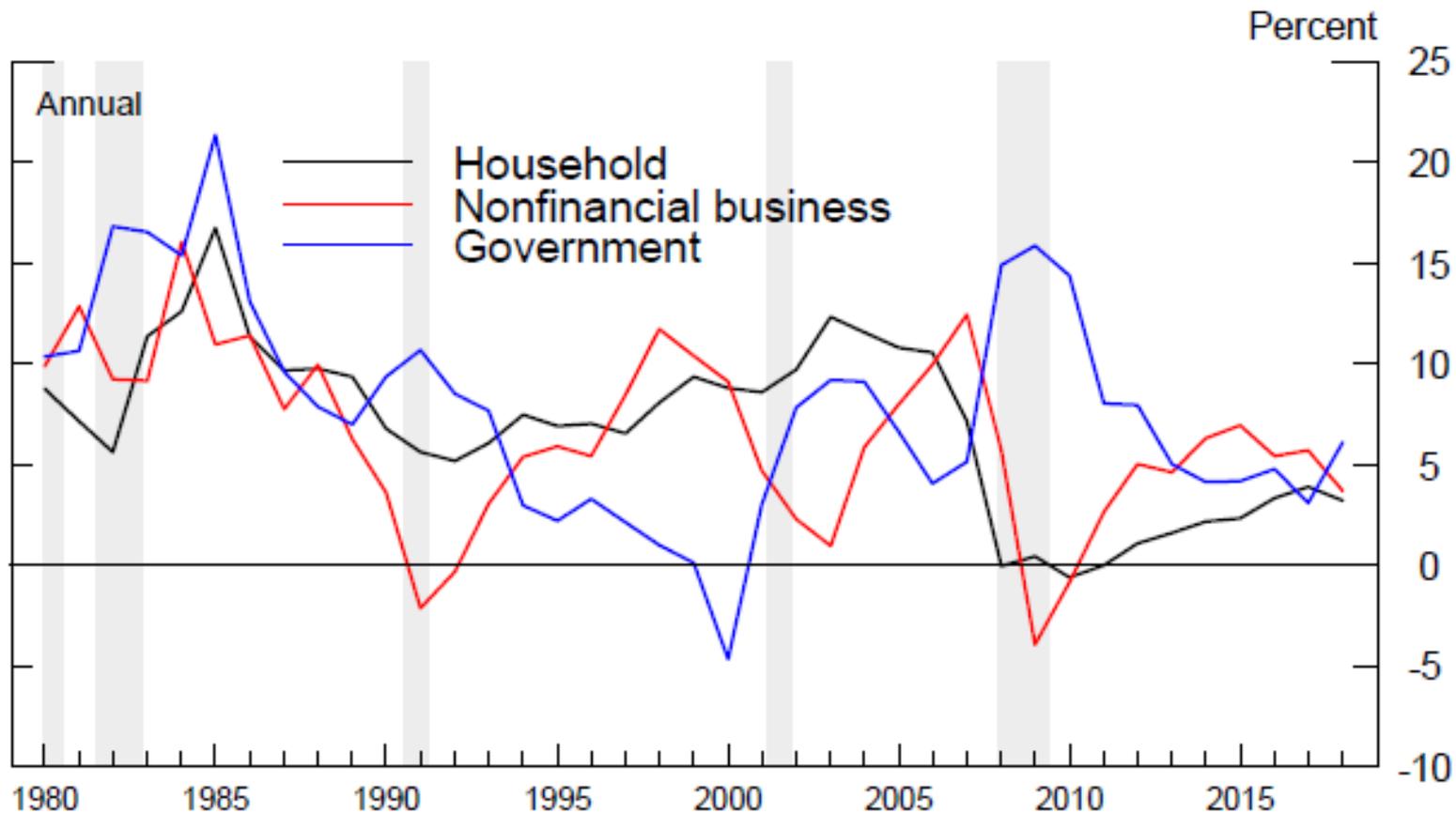


From-Whom-to-Whom Holdings of Debt Securities: 2017





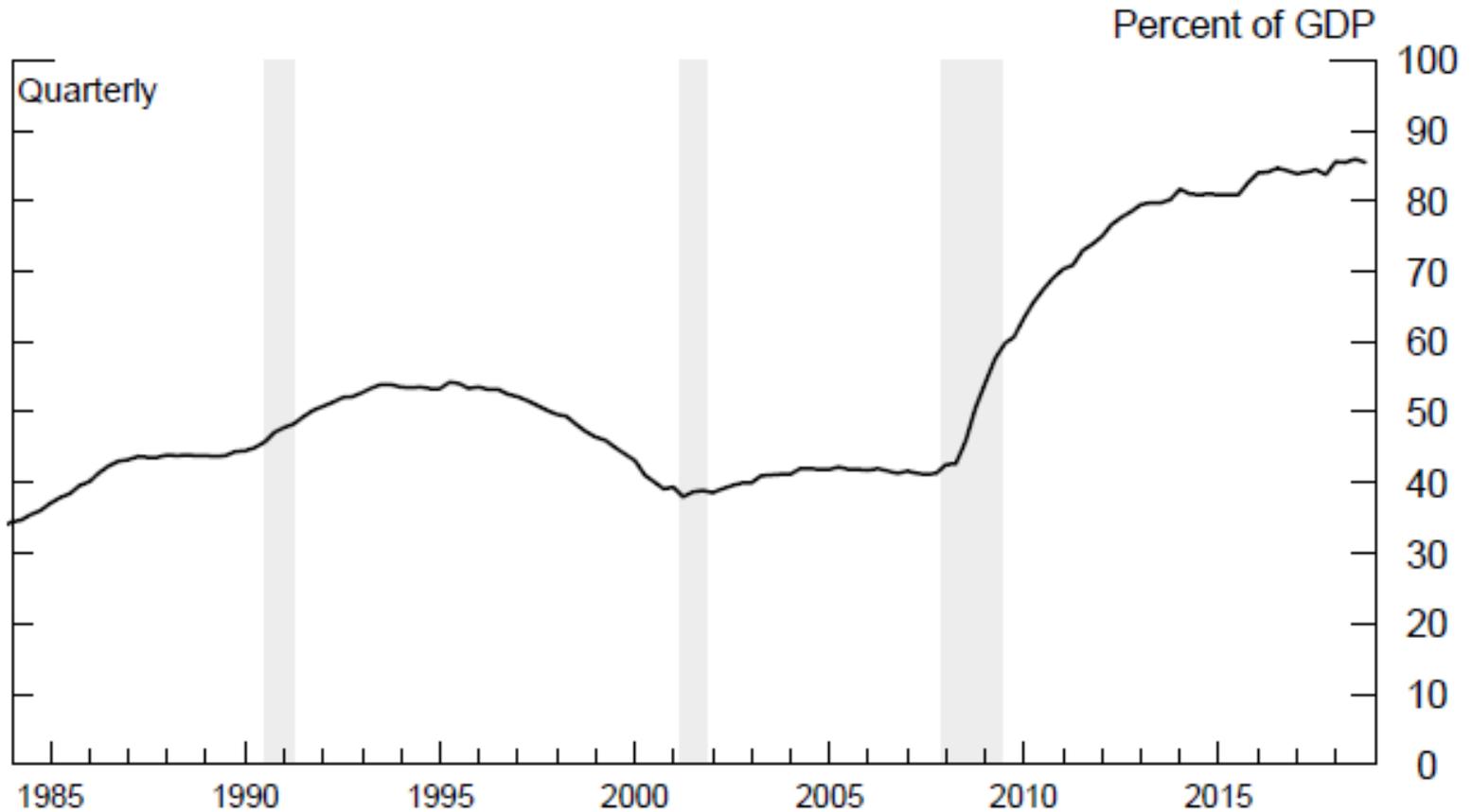
Debt Growth of Domestic Nonfinancial Sectors



Source: Financial Accounts of the United States, March 7, 2019.



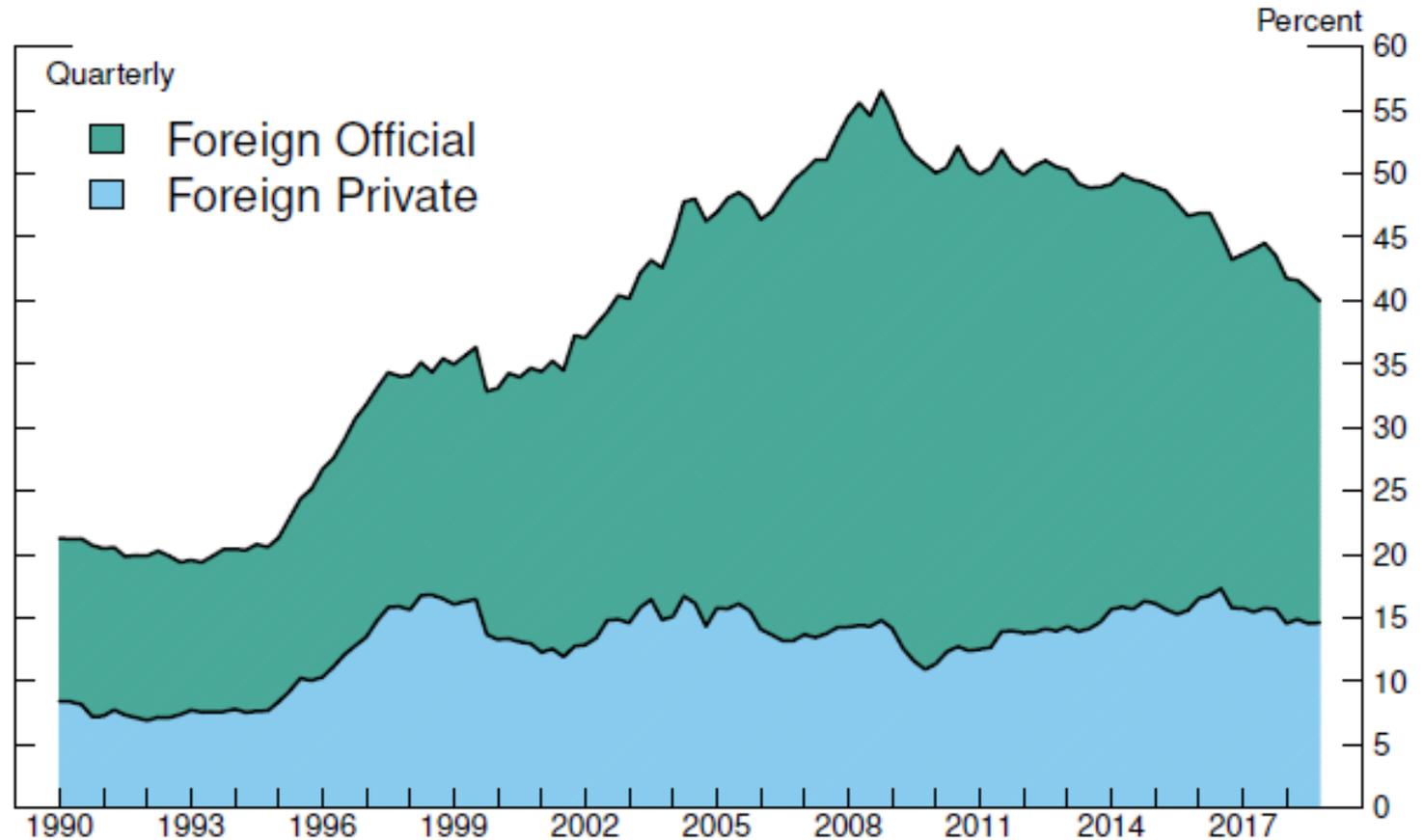
Federal Government Debt



Source: Financial Accounts of the United States, March 7, 2019.



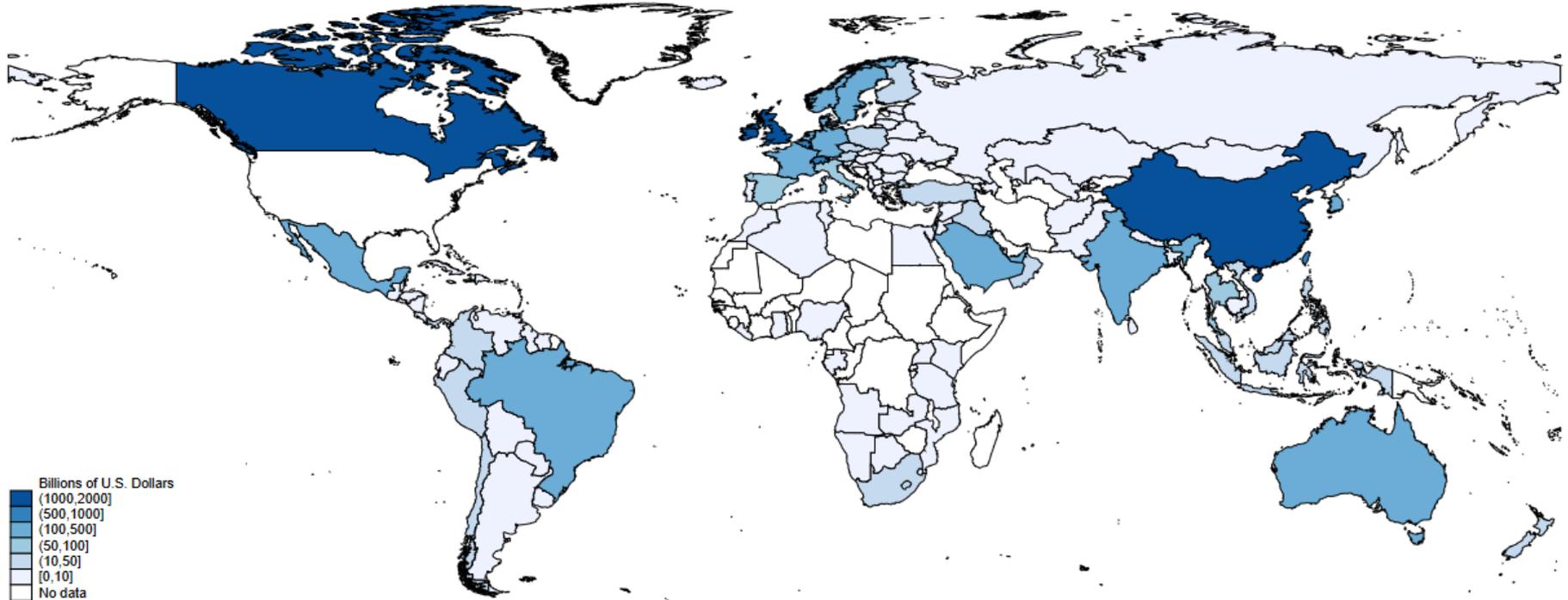
Foreign Holdings of U.S. Treasury Marketable Securities



Source: Financial Accounts of the United States, March 7, 2019.



Foreign Residents' Holdings of Total U.S Long-Term Securities, August 2018



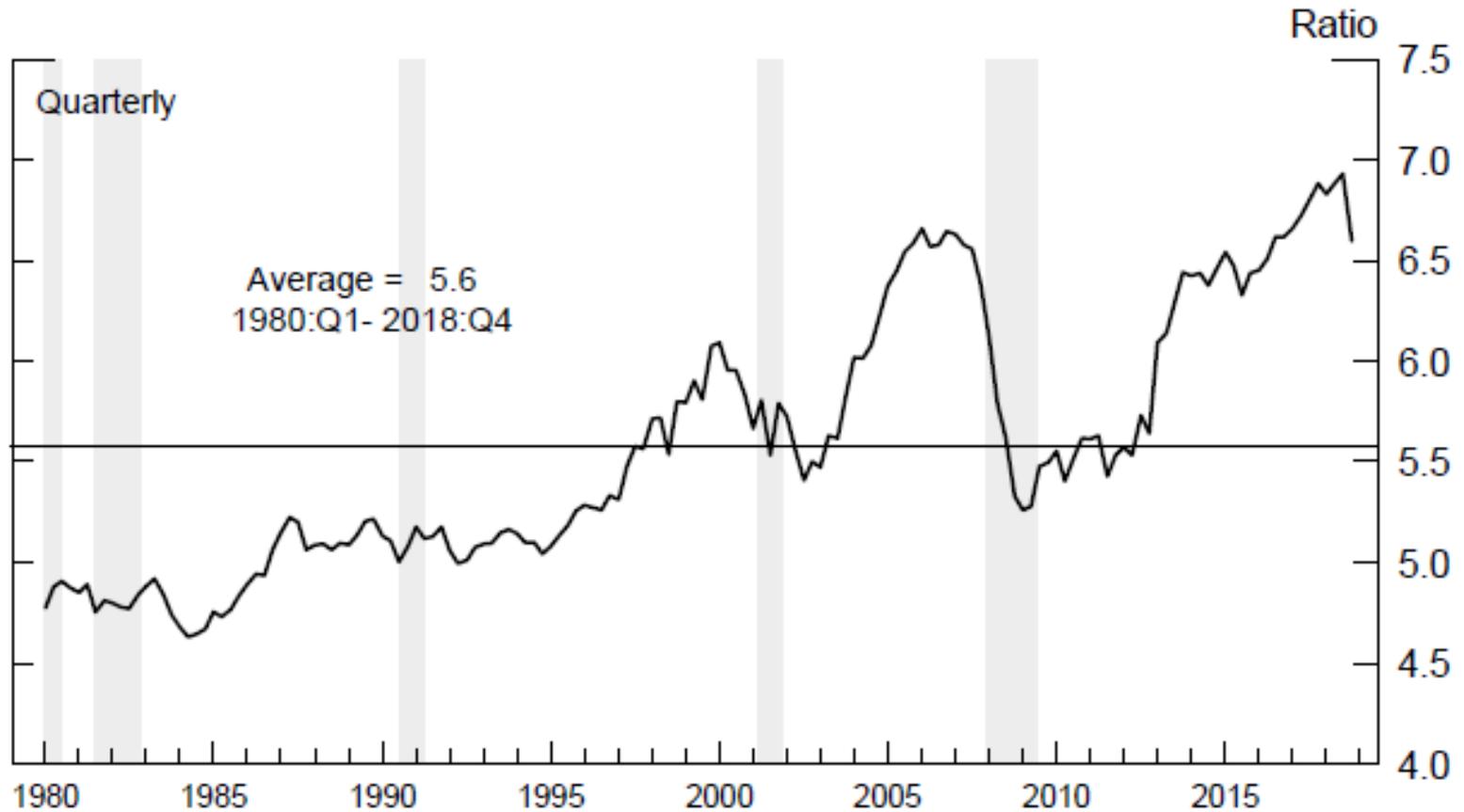


Use of Household Sector Data

- Full balance sheet for households and nonprofit organizations has nonfinancial assets, financial assets, liabilities, and thus net worth.
- Financial Accounts only timely and quarterly source for this series.
- Net worth is important in the Federal Reserve's model of household consumption which feeds into the forecast of GDP.
- Our group prepares a forecast of net worth based on assumptions about future movements in the real estate and stock markets and the personal savings rate.

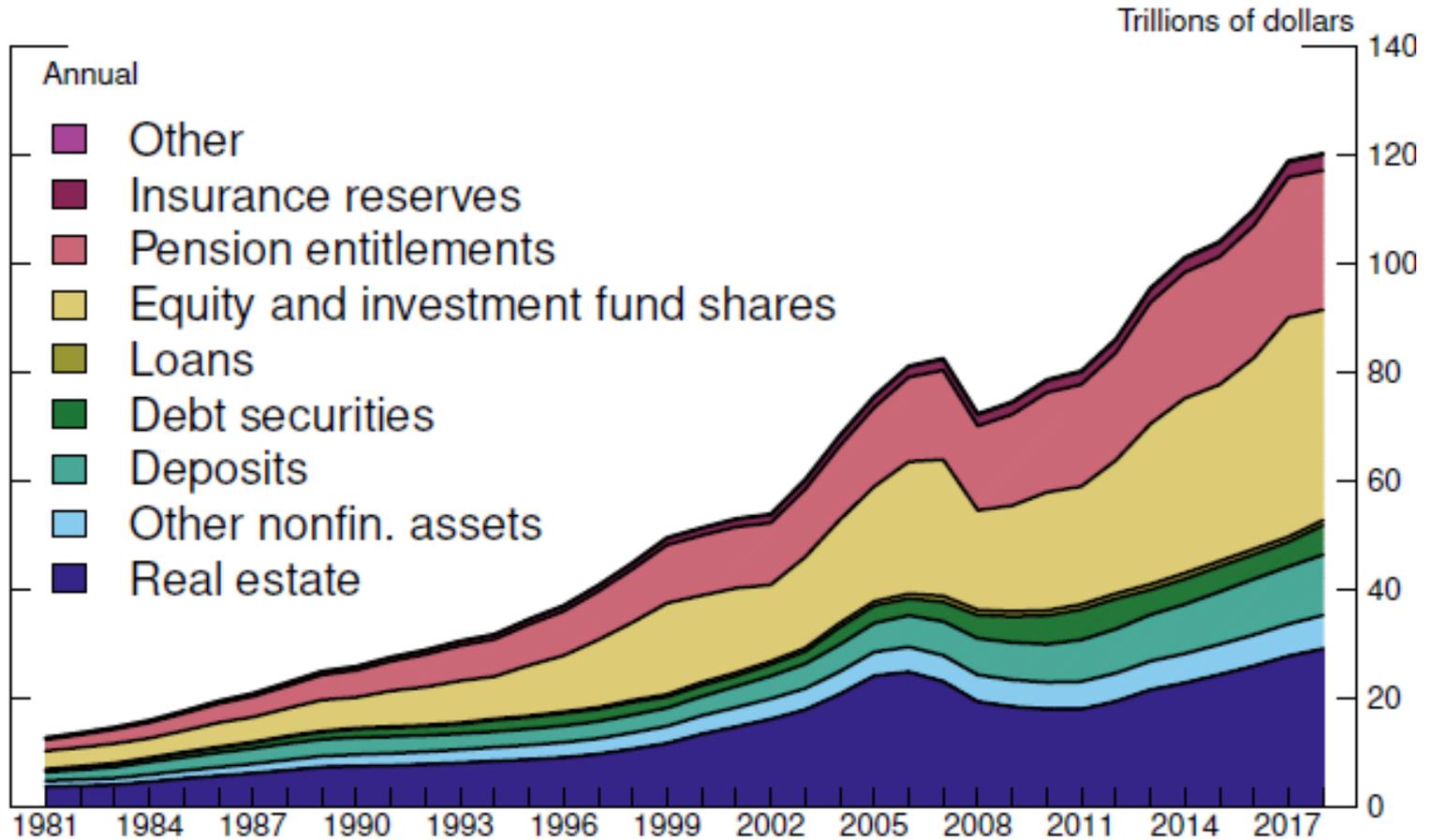


Household Net Worth Relative to Disposable Personal Income



Source: Financial Accounts of the United States, March 7, 2019.

Household Assets



Source: Financial Accounts of the United States, March 7, 2019.

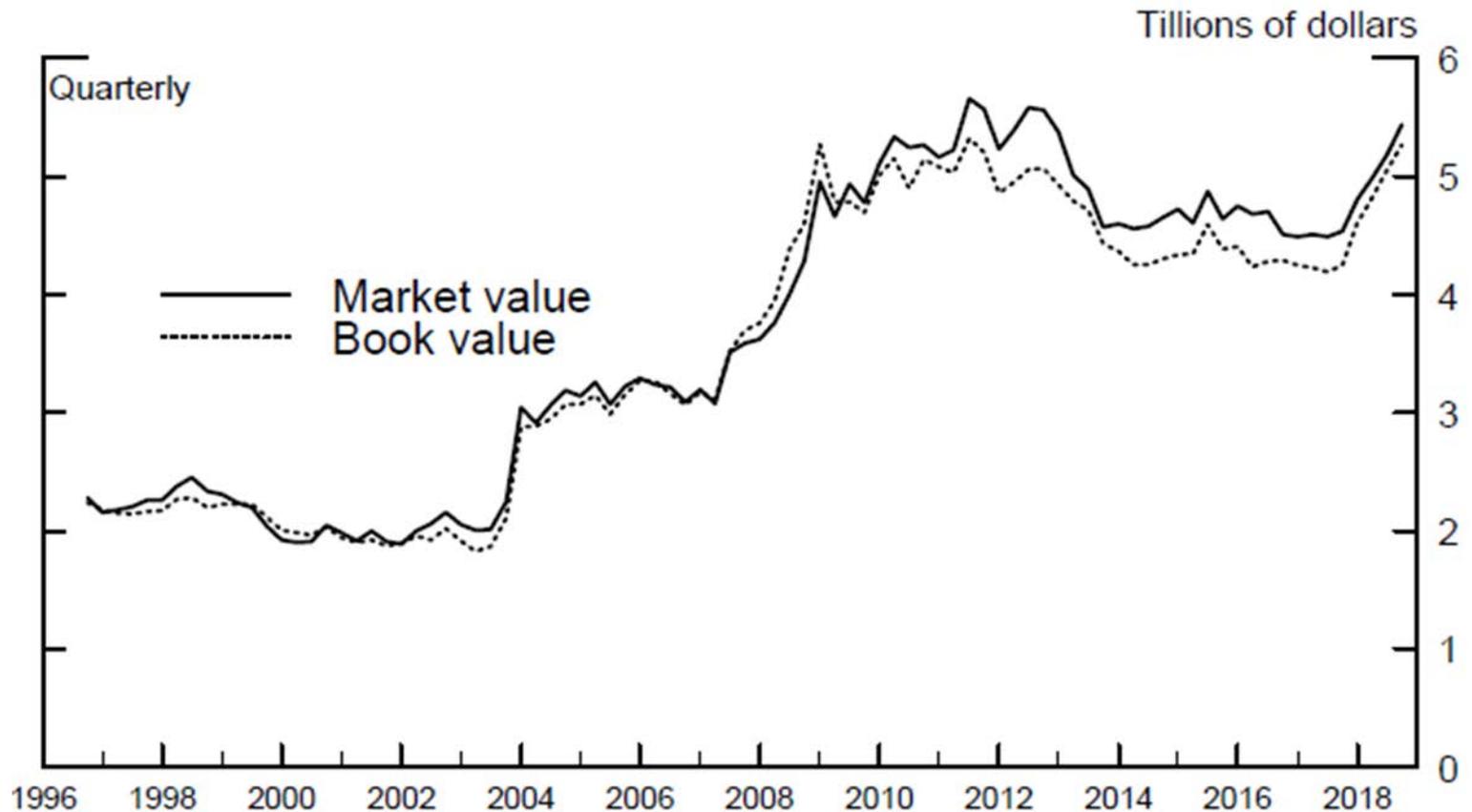


Market Value of Debt Securities

- FA debt securities include separate measures for commercial paper, Treasury securities, state and local securities, agency- and GSE-backed securities, and corporate and foreign bonds.
- Historically, FA reported most debt security holdings at book value; household sector holdings calculated residually.
- Several years ago, FA moved towards reporting market values for debt securities, one sector at a time.
- Now, the market value of household holdings of debt securities are calculated using market indexes, beginning 1996. Transactions continue to be residually calculated.



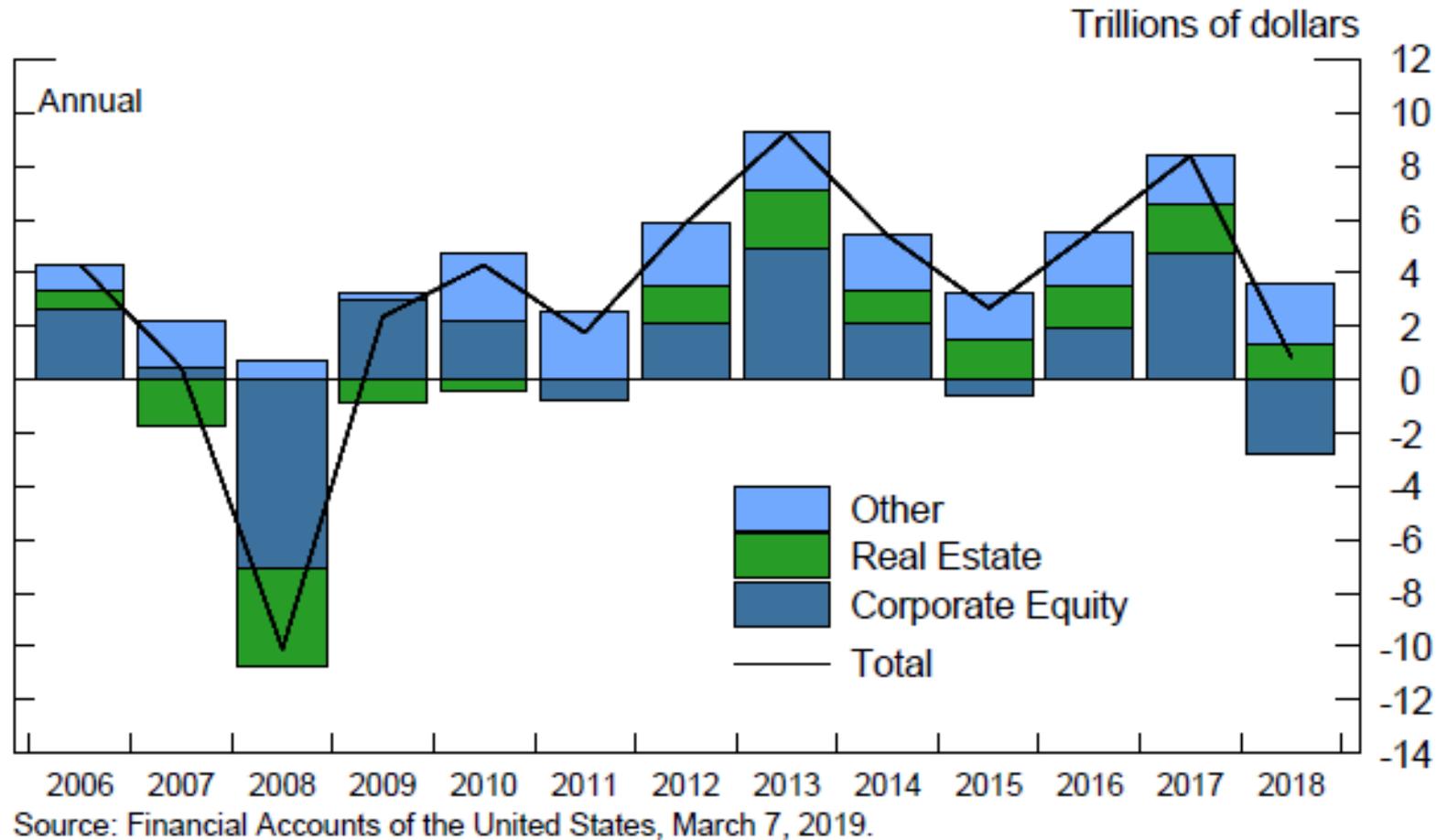
Market versus Book Value of Debt Securities Held by Households



Source: Financial Accounts of the United States, March 7, 2019.

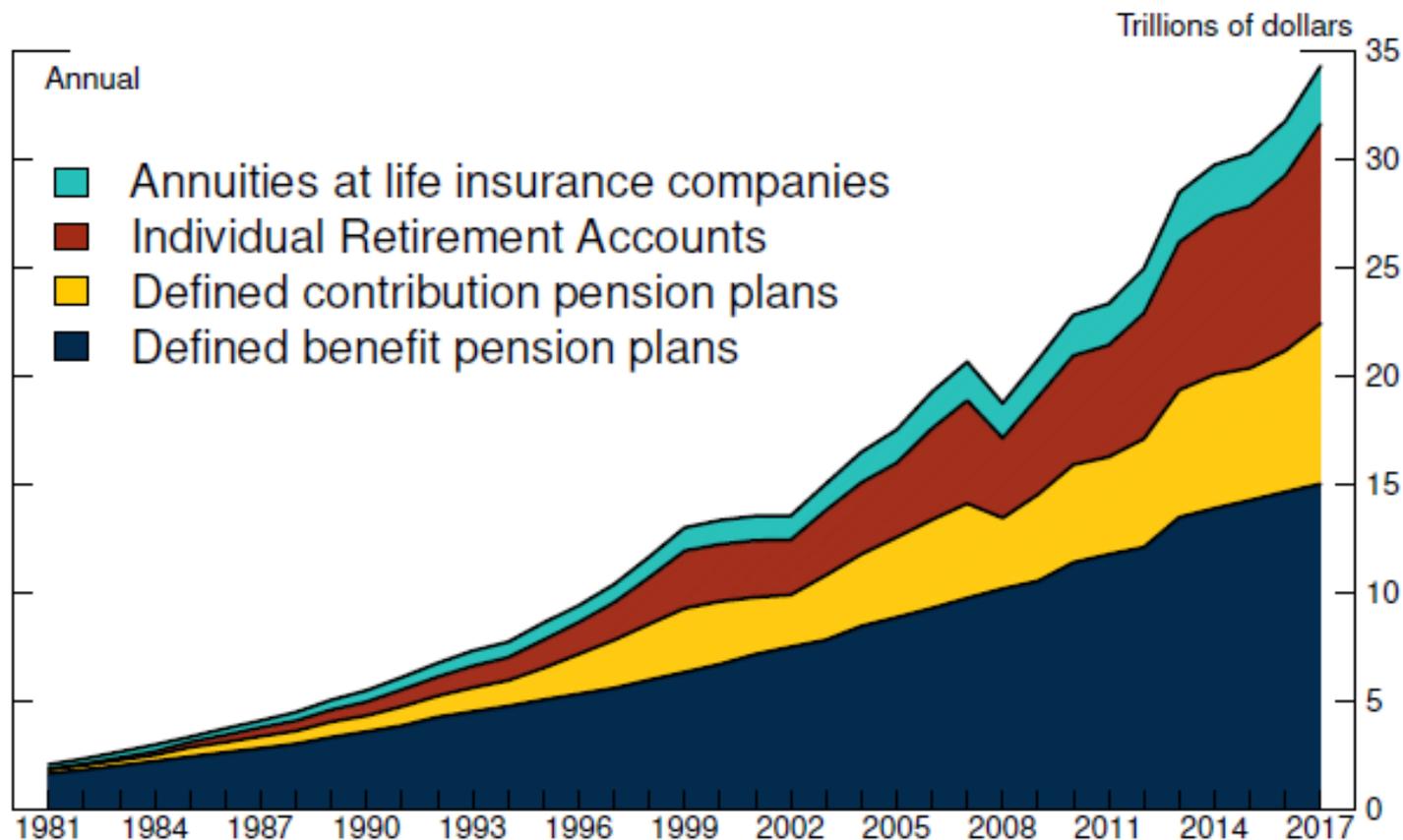


Change in Household Net Worth





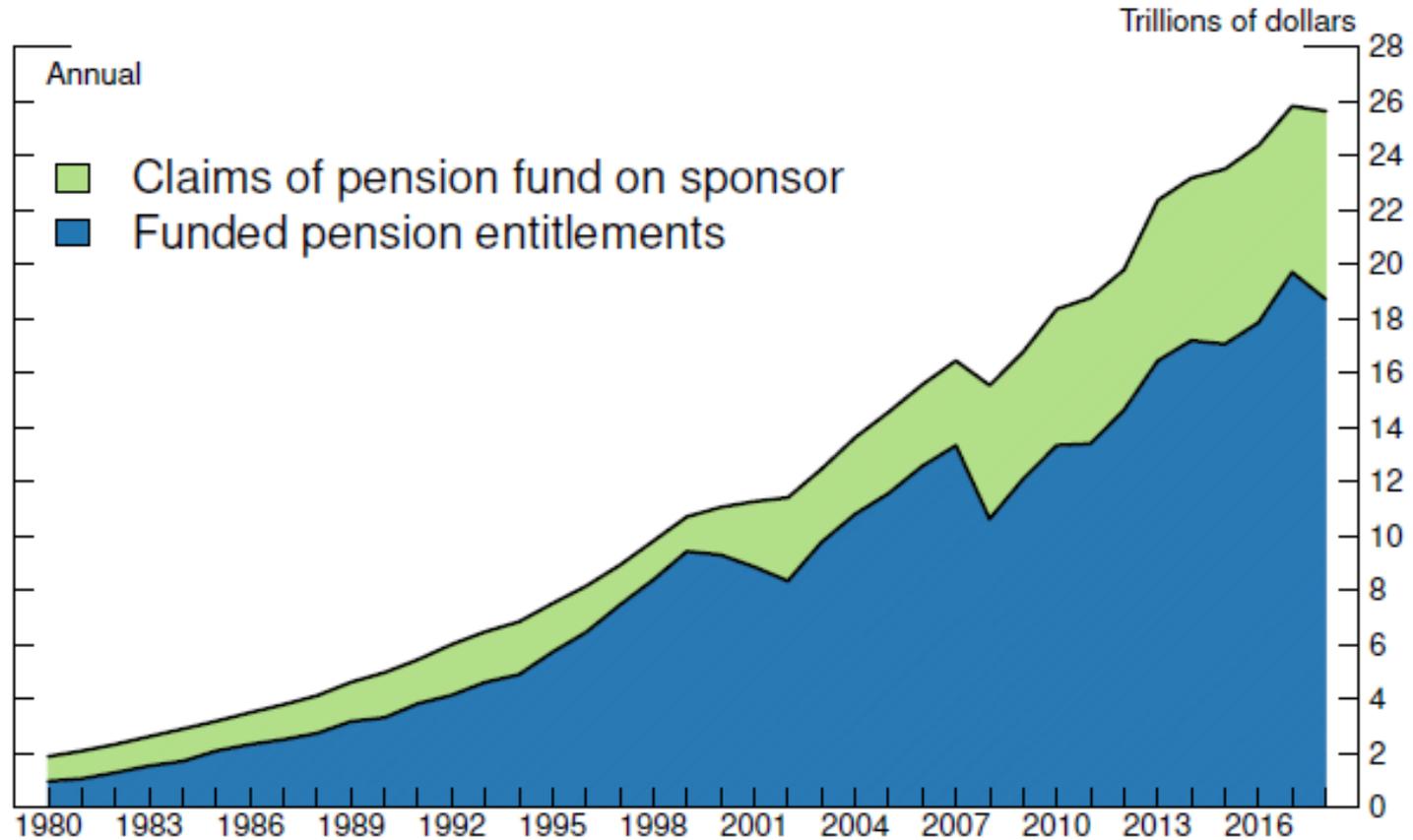
Household Retirement Assets



Source: Financial Accounts of the United States, March 7, 2019.



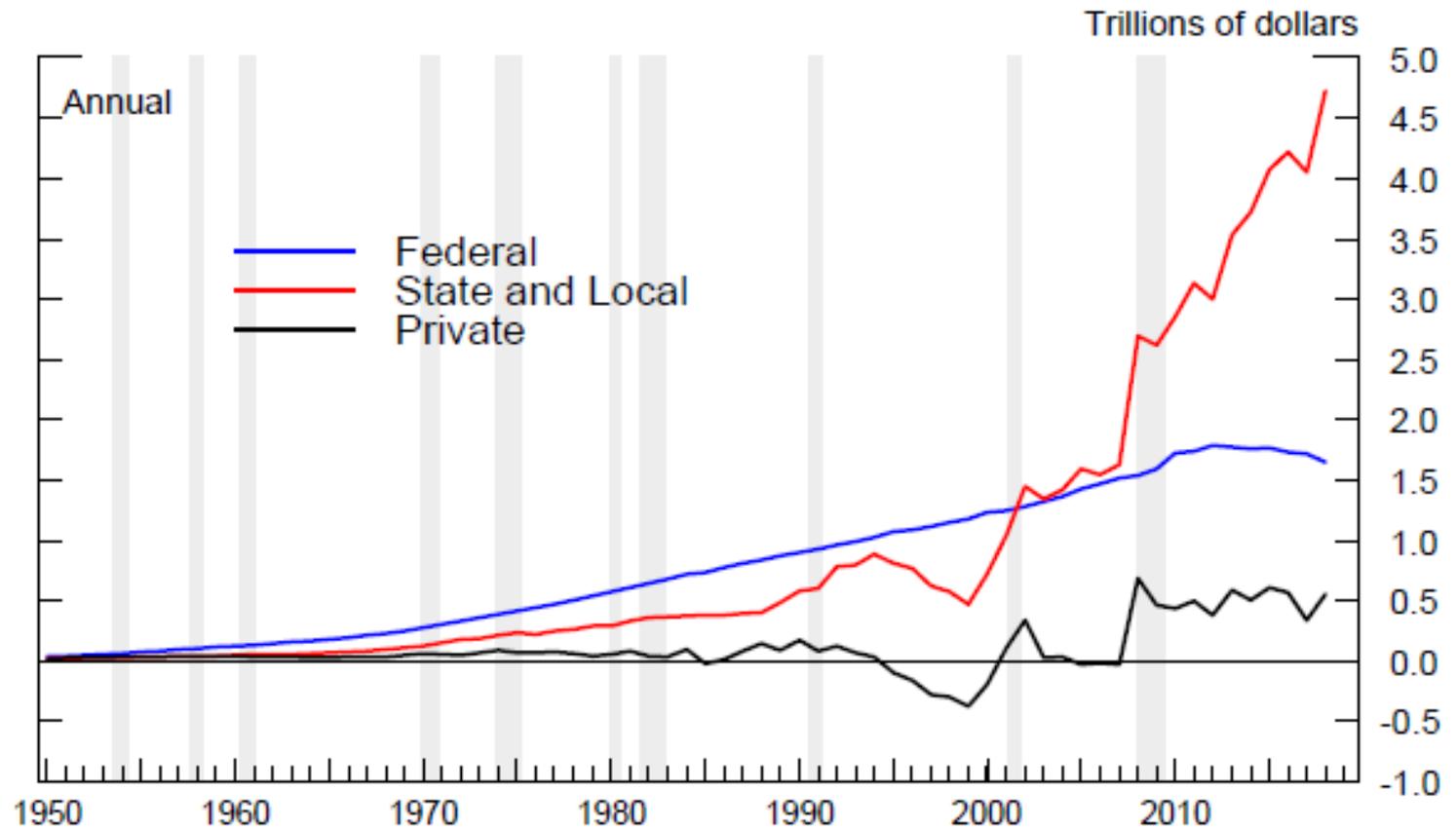
Pension Entitlements of the Household Sector



Source: Financial Accounts of the United States, March 7, 2019.

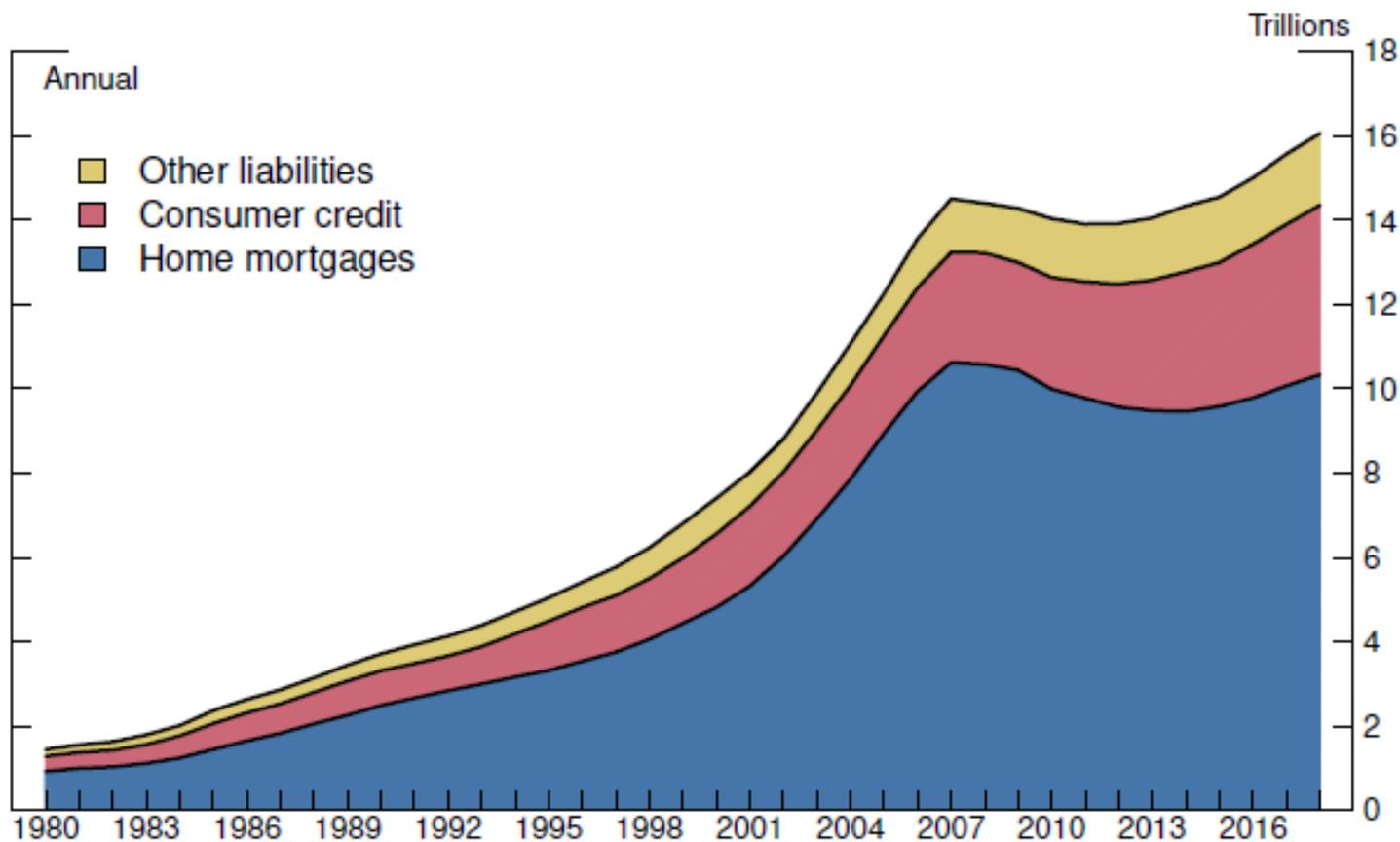


Claims of Pension Funds on Sponsors



Source: Financial Accounts of the United States, March 7, 2019.

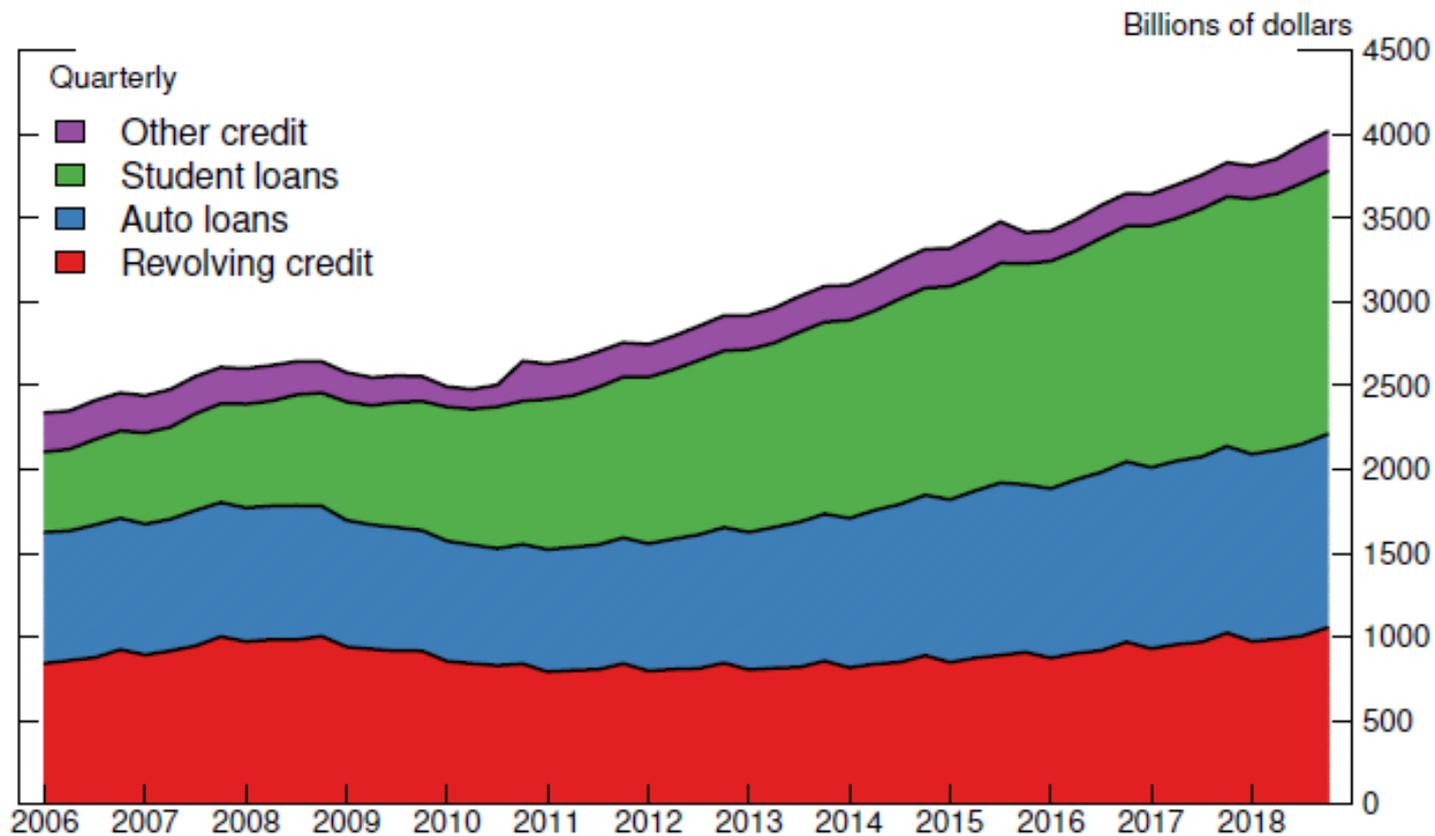
Household Liabilities



Source: Financial Accounts of the United States, March 7, 2019.



Consumer Credit



Source: Financial Accounts of the United States, March 7, 2019.



Distributional Financial Accounts (DFA)

- **Goal:** create a Distributional Financial Accounts (DFA), a quarterly data set that shows household wealth by income quintile
- Combines two different source data sets:
 1. **Survey of Consumer Finance (SCF):** a nationally representative micro-level survey of the financial wellbeing of households
 2. **Financial Accounts of the United States (FA):** an integrated macro-level data set that shows a balance sheet for households and nonprofits
- **Method:**
 - Separate nonprofit organizations from FA households
 - Match instrument categories between SCF and FA
 - Apply SCF-based income shares to FA aggregates

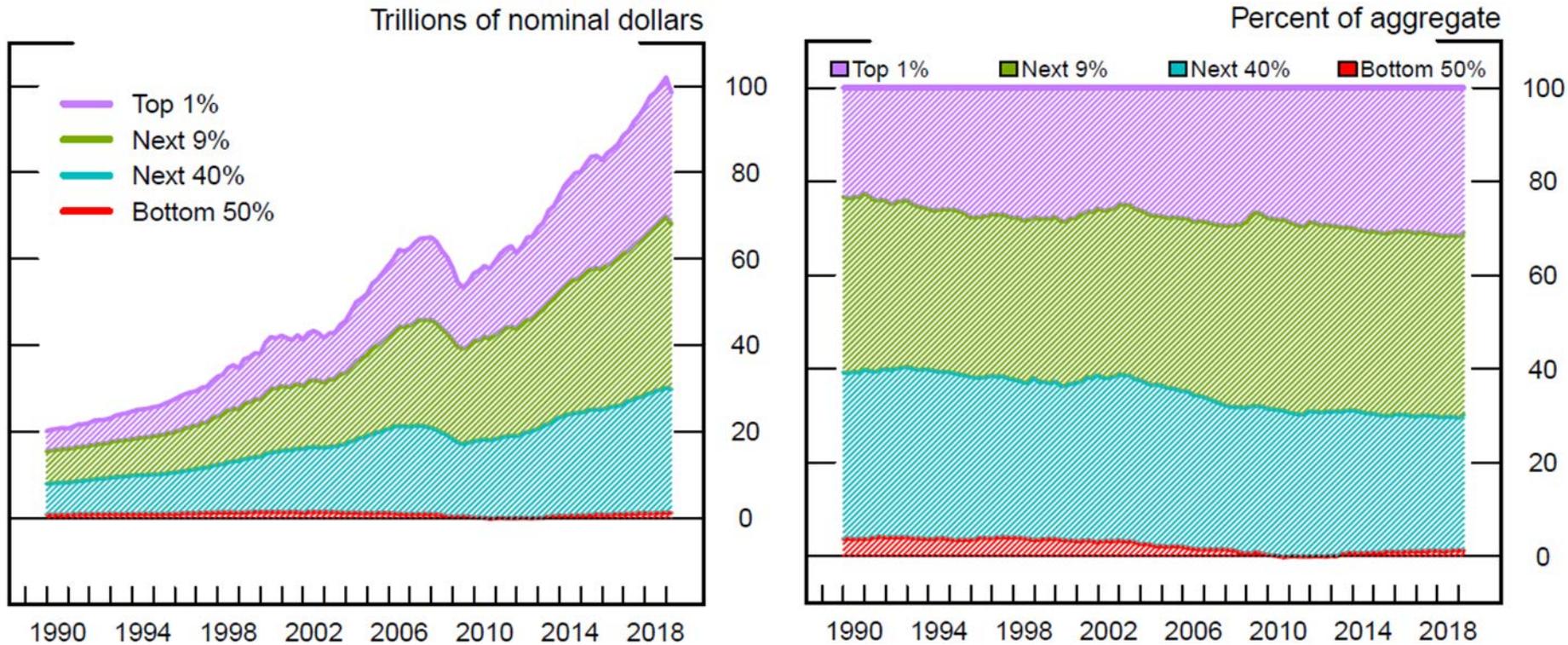


Distributional Financial Accounts (DFA)

- **Higher frequency:** quarterly vs. triennial (FA)
- **More timely:** latest quarter available with a 10 week lag (FA)
- **More comparable:** consistent with international reporting standards (FA)
- **More detailed:** household demographic information (SCF)



DFA: Household Net Worth by Wealth Percentiles



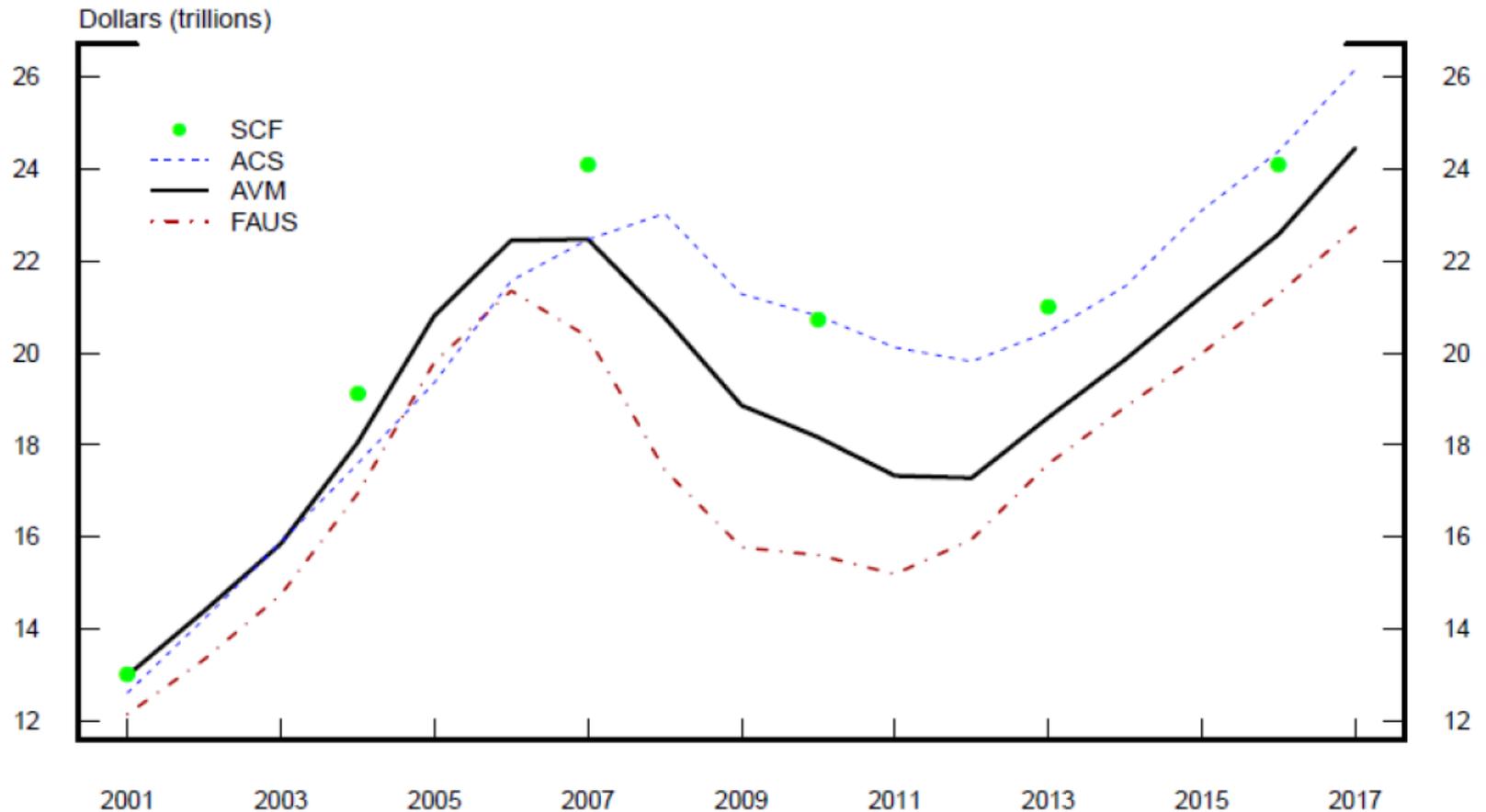


Measuring the Market Value of Residential Real Estate

- Current: American Housing Survey (AHS) benchmarks (2005) and a repeat-sales house price index
- New: “Big data” automated valuation models (AVM) for average prices and property counts from Census
 - Advantages:
 - Values entire stock
 - Captures changing dwelling characteristics
 - Valuations disciplined by market prices
 - Model predictions testable against actual prices for traded units
 - Disadvantages:
 - Limited historical data
 - Rental properties included in AVM prices



Aggregate Housing Wealth



Source: American Community Survey (U.S. Census Bureau), Financial Accounts of the United States, Survey of Consumer Finance (triennial), and Zillow.



IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Globalisation and balance of payments¹

Celestino Giron,
European Central Bank

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



EUROPEAN CENTRAL BANK

EUROSYSTEM

Celestino Girón *)
European Central Bank **)

Globalisation and Balance of Payments

Session I

***Workshop on the Use of Financial Accounts
Istanbul, 18-20 March 2019***

*) input from the ECB financial accounts training seminar and WG FA discussions acknowledged

***) Views should not be attributed to the ECB

- 1 Challenges for statisticians and analysts
- 2 Sector/ instruments breakdowns and globalisation
- 3 The analytical value of integrating financial accounts and b.o.p./i.i.p.
- 4 Global Flow of Funds
- 5 Globalisation in the ESCB medium-strategy for financial accounts

1 Challenges for statisticians and analysts

2 Sector/ instruments breakdowns and globalisation

3 The analytical value of integrating financial accounts and b.o.p./i.i.p.

4 Global Flow of Funds

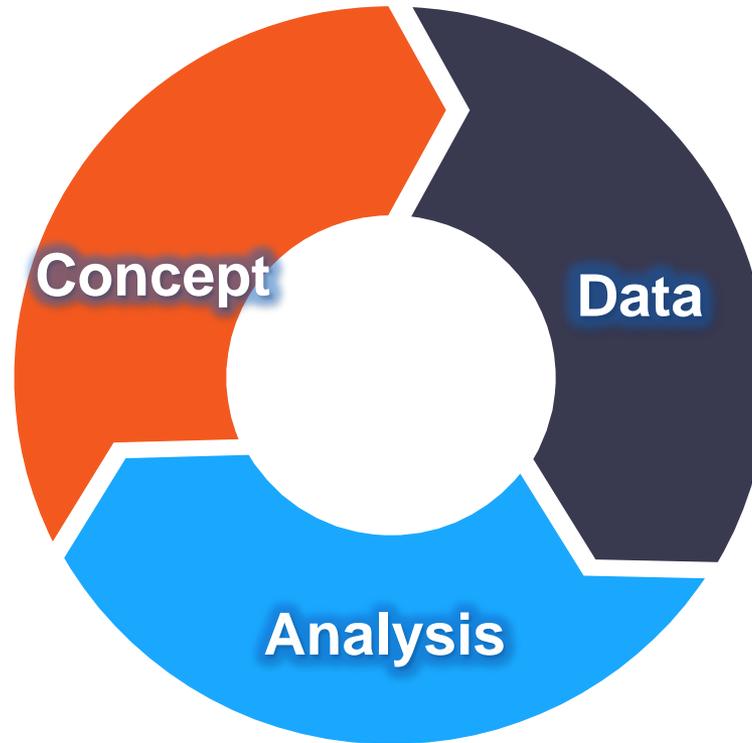
5 Globalisation in the ESCB medium-strategy for financial accounts

1. Challenges for statisticians and analysts

Globalisation poses challenges on..

Methodology

How to solve the problems of interpretability for standard macro indicators



Sources

How to get relevant information on global events; how to ensure consistency in the statistical treatment across countries

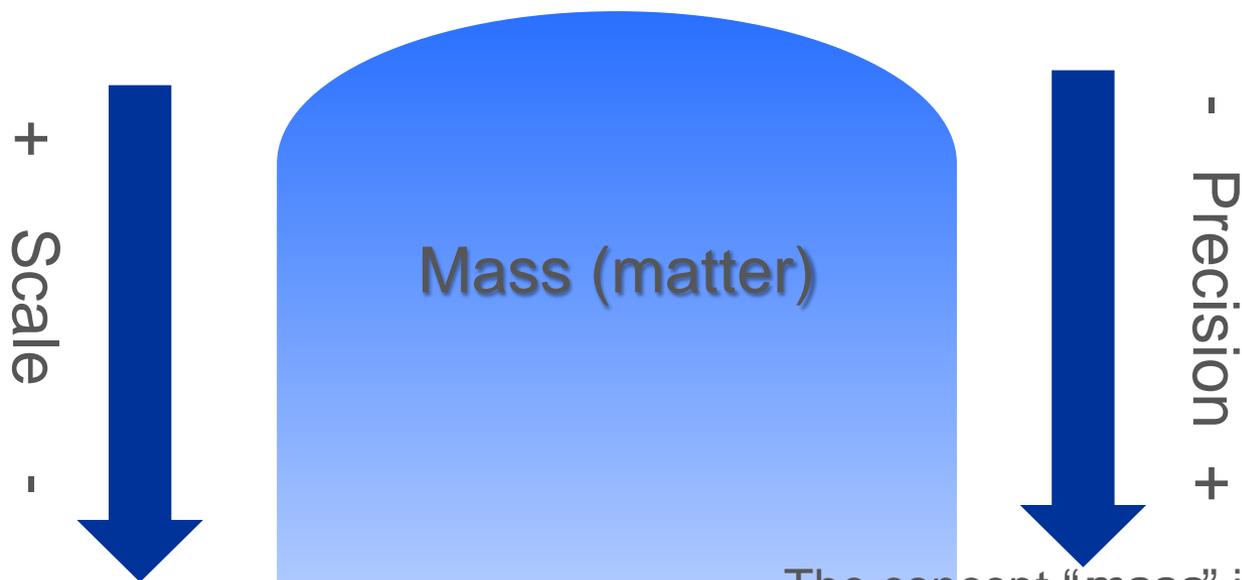
Tools

How to understand globalization itself and implications for flow of funds, spillovers, interconnectedness, contagion ...

1. Challenges for statisticians and analysts

◆ The methodological challenge as a scale-measurement problem

Drawing an analogy between the physical reality ...



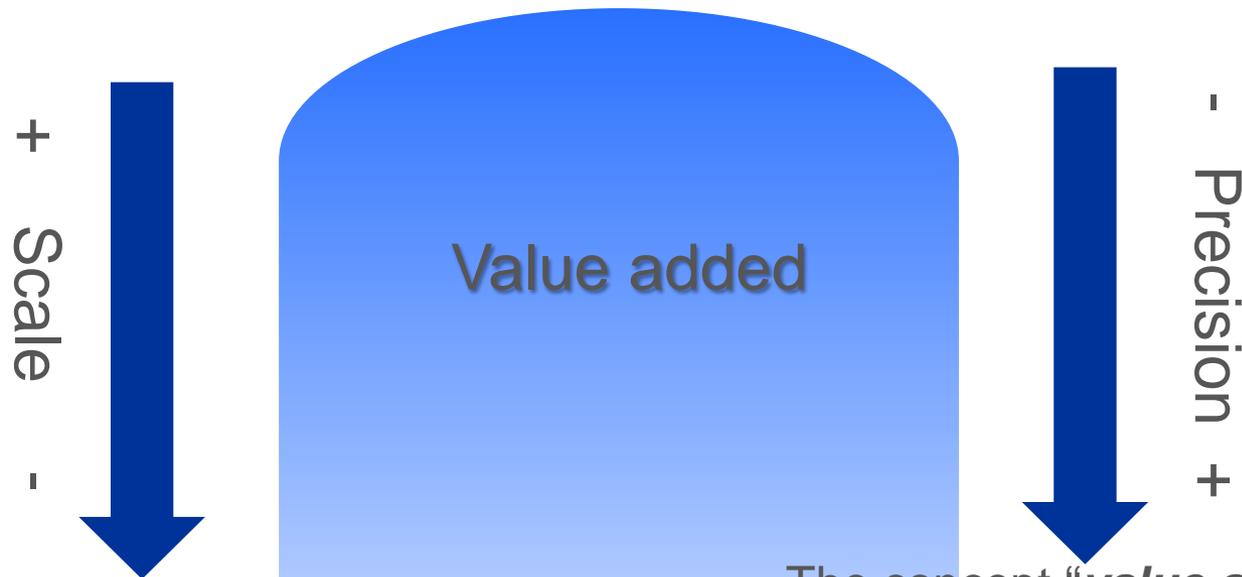
At a sufficiently low scale (quantum), the problem is not any longer not having sufficient measurement precision, but not having a meaningful concept at that scale (*mass*)

The concept "*mass*" is applicable to all scales of measurement... but the more down you go on scale the more precise your measurement tools need to be

1. Challenges for statisticians and analysts

◆ The methodological challenge as a scale-measurement problem

... and the economic reality



At a sufficiently low scale (“quantum”), the problem is not any longer not having sufficient measurement precision, but not having a meaningful concept at that scale (***value added***)

The concept “***value added***” is applicable to all scales of measurement... but the more down you go on scale the more precise your measurement tools need to be

1. Challenges for statisticians and analysts

◆ The methodological challenge as a scale-measurement problem

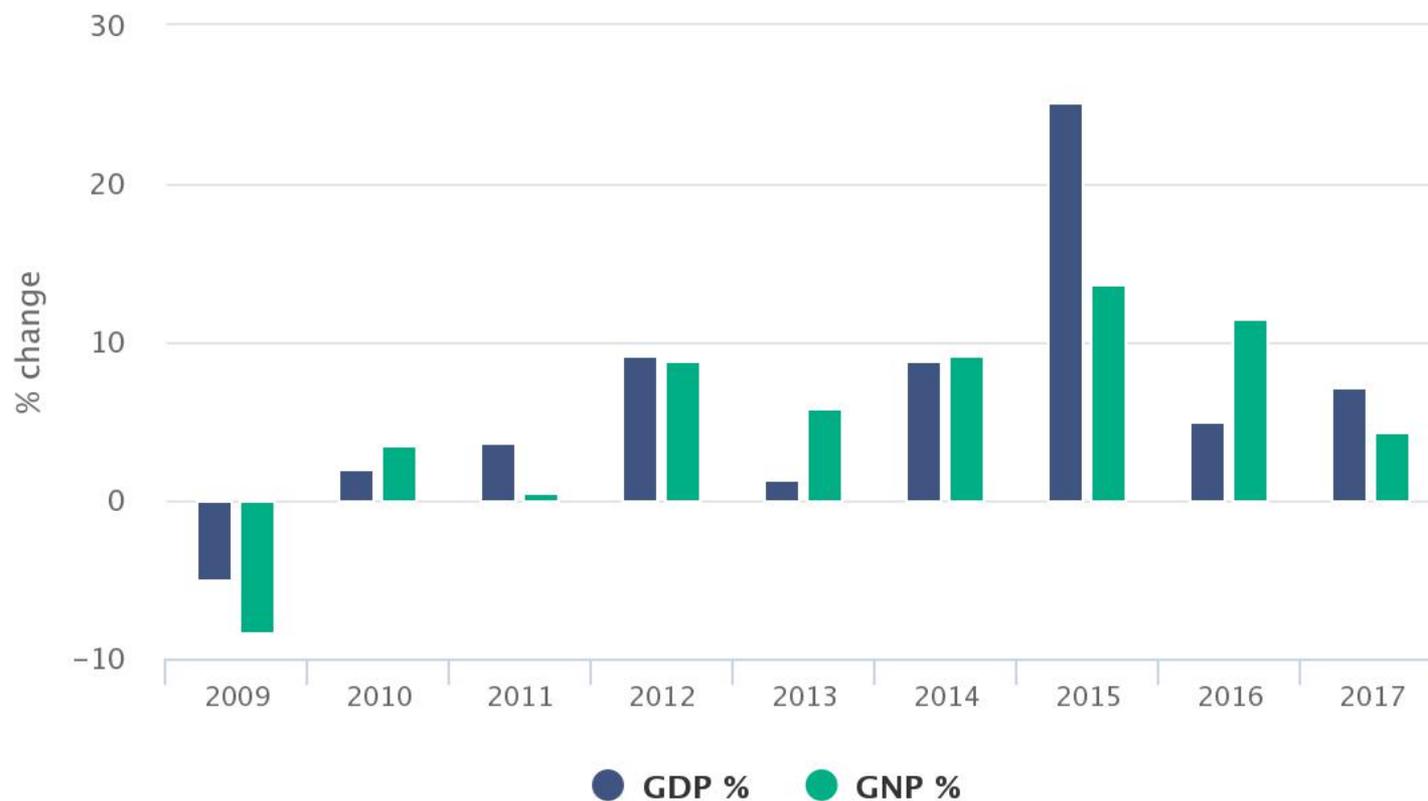
Drawing an analogy between the physical reality and the economic reality

- ✓ There is a *"quantum level"* for national account concepts: region, town, neighbourhood, street...?
- ✓ Globalisation is making larger the scale at which *"quantum effects"* manifest themselves

1. Challenges for statisticians and analysts

A quantum effect Irish GDP in 2015

Figure 1.1 Growth Rates



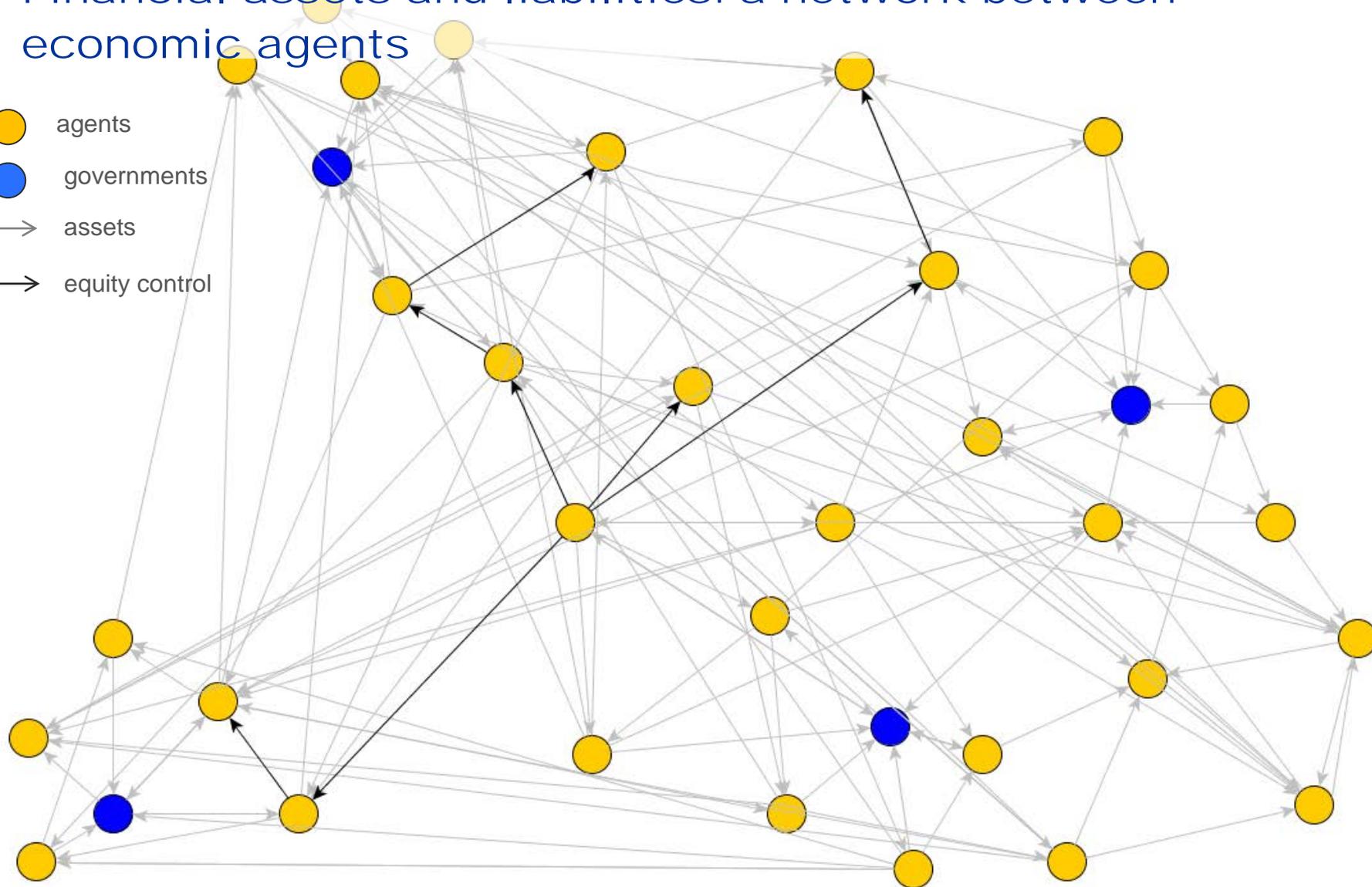
Source: CSO Ireland

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2. Sector/instruments breakdowns and globalisation

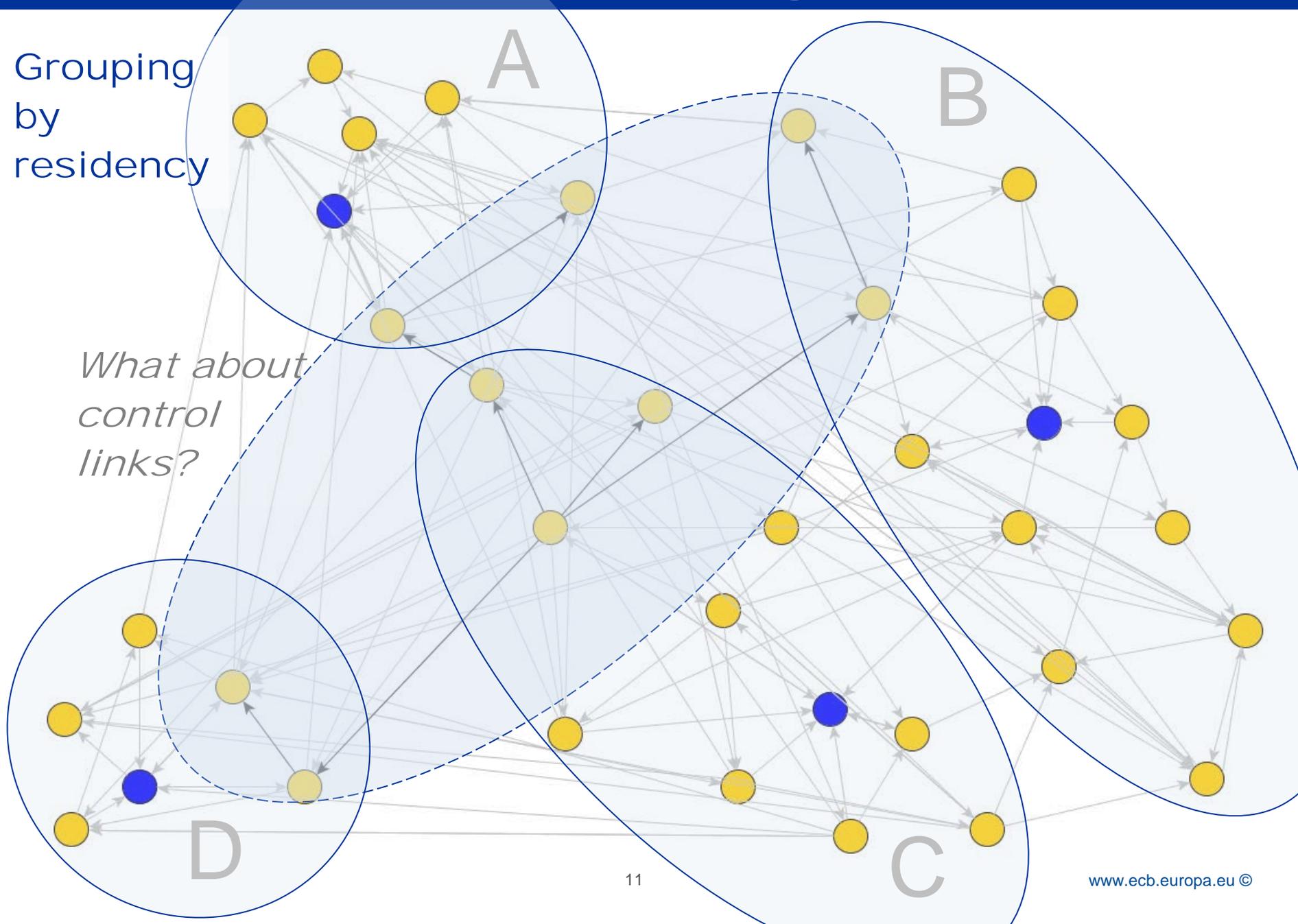
Financial assets and liabilities: a network between economic agents

- agents
- governments
- assets
- equity control



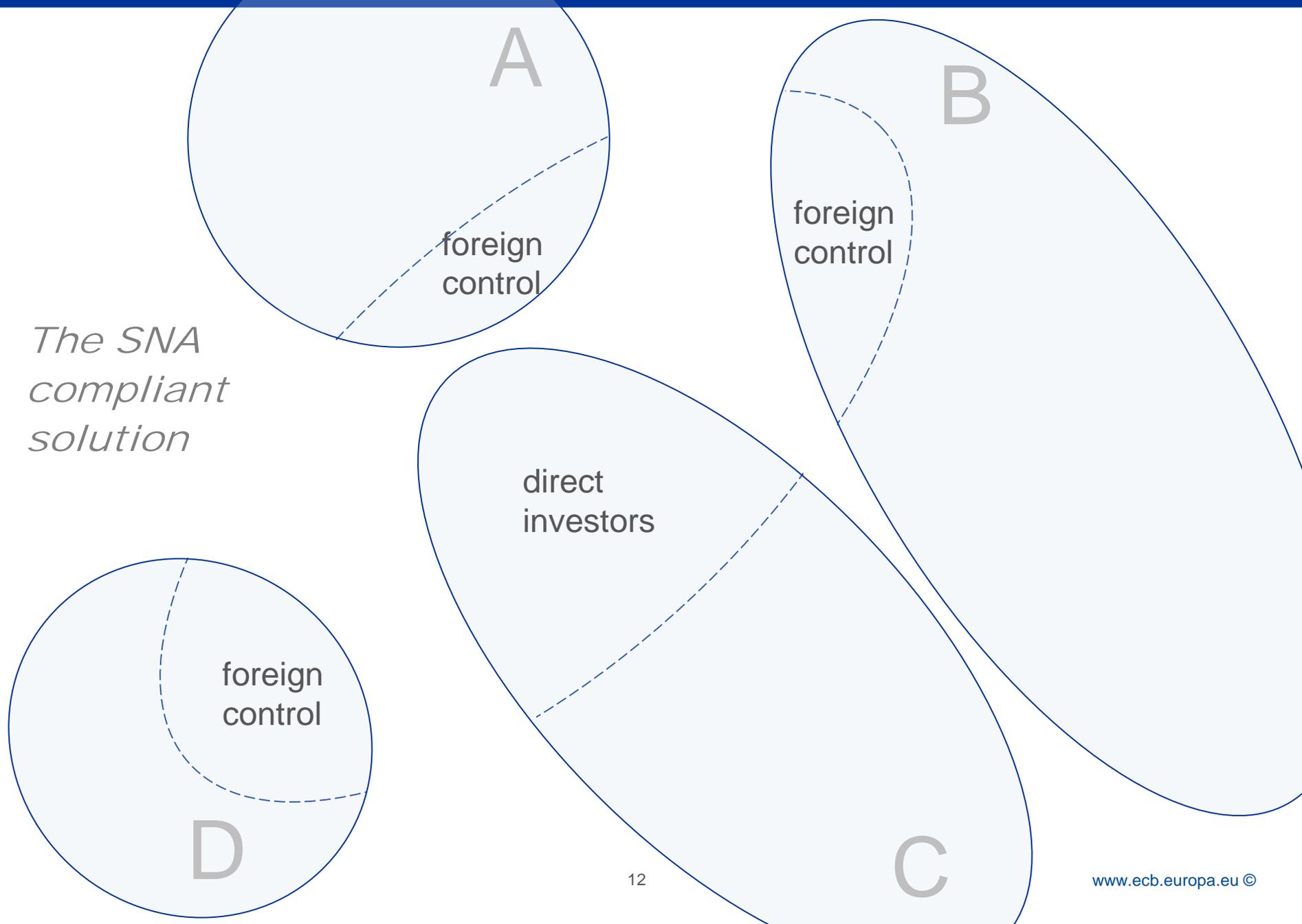
2. Sector/instruments breakdowns and globalisation

Grouping
by
residency



*What about
control
links?*

2. Sector/instruments breakdowns and globalisation



2. Sector/instruments breakdowns and globalisation

What for?

Separate financial analysis of MNEs

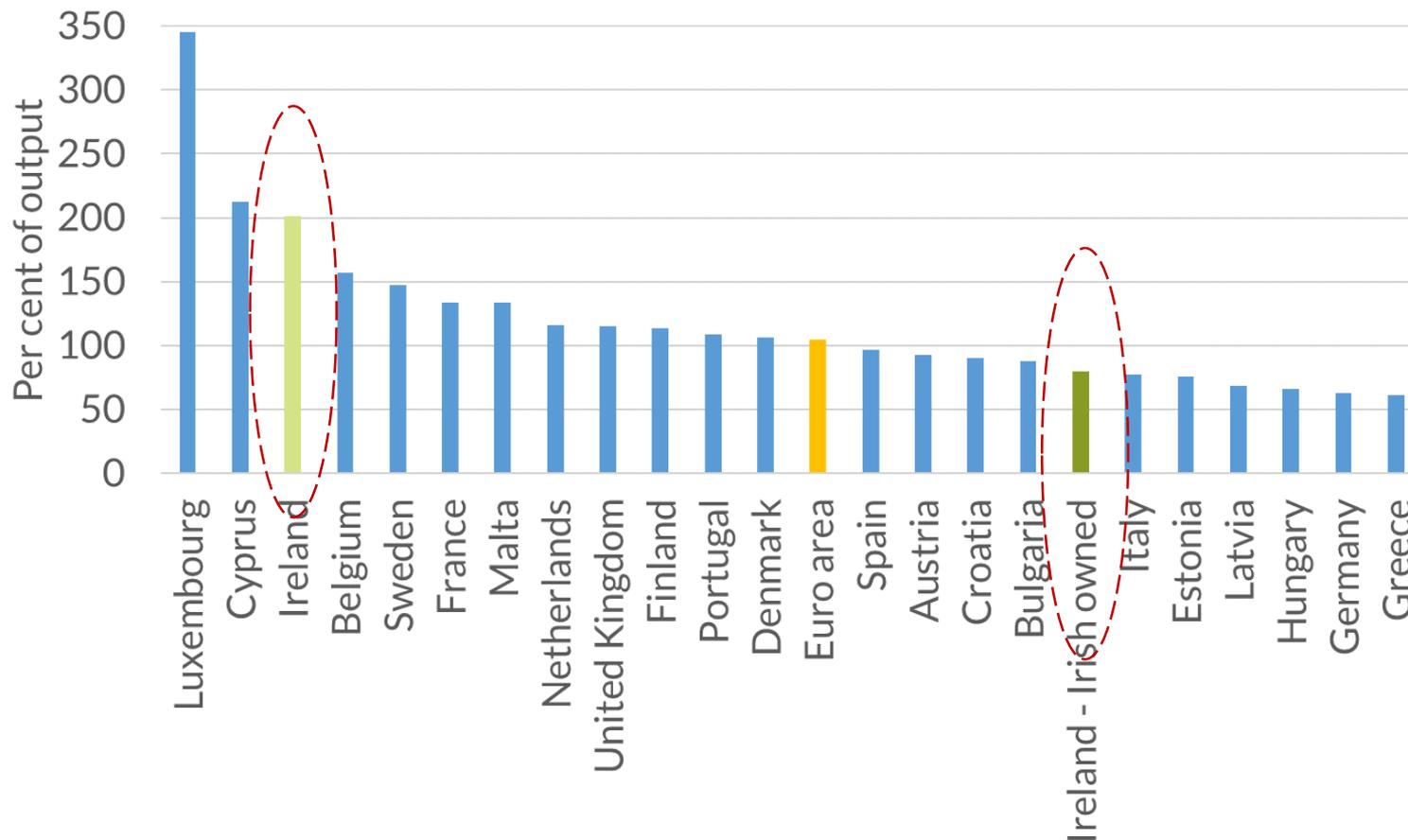
Single out sources for “distortions“ in traditional financial indicators and in metrics of macroeconomic risk

More granular monitoring of financial risks, on the basis of international exposures

Flow of funds, interconnectedness, spill overs, contagion, propagation ... having MNEs as a separate investment/ financing channel

2. Sector/instruments breakdowns and globalisation

The distortion problem: *NFC debt in Ireland*



Source: Central Bank of Ireland, Central Statistics Office and European Central Bank.

Notes: end 2016; "Irish owned debt" = $\frac{\text{Irish owned NFC debt excluding redomicled plcs}}{\text{GNI}^*}$

2. Instrument/ sector breakdowns and globalisation

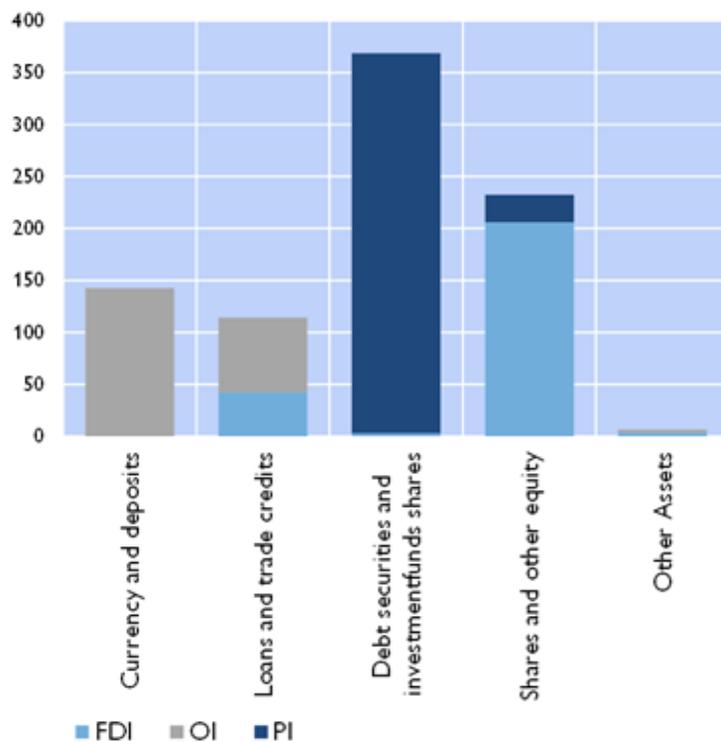
Better understanding **sources of financing: Austria**

Chart

Crossborder Liabilities by Function and Financial Instrument

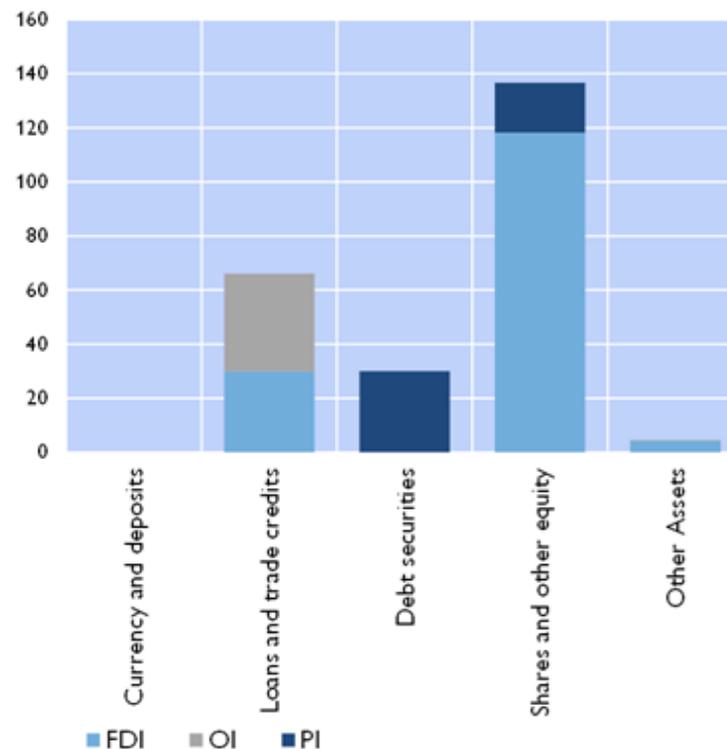
Total Economy

EUR billion , 2016Q2



Non-Financial Corporations

EUR billion , 2016Q2



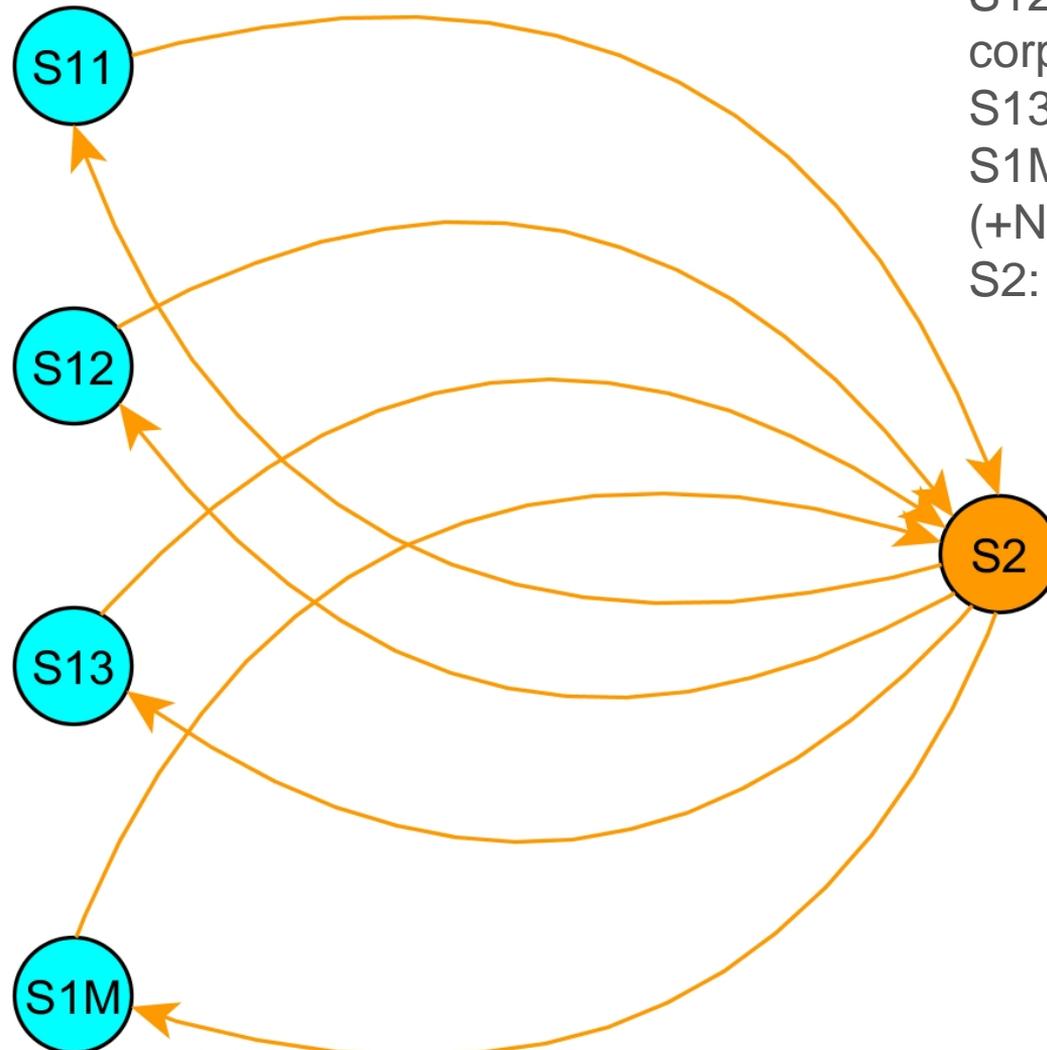
Source: OeNB (Financial Accounts).

- 1 Challenges for statisticians and analysts
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3. The analytical value of integrating financial accounts and b.o.p./i.i.p.

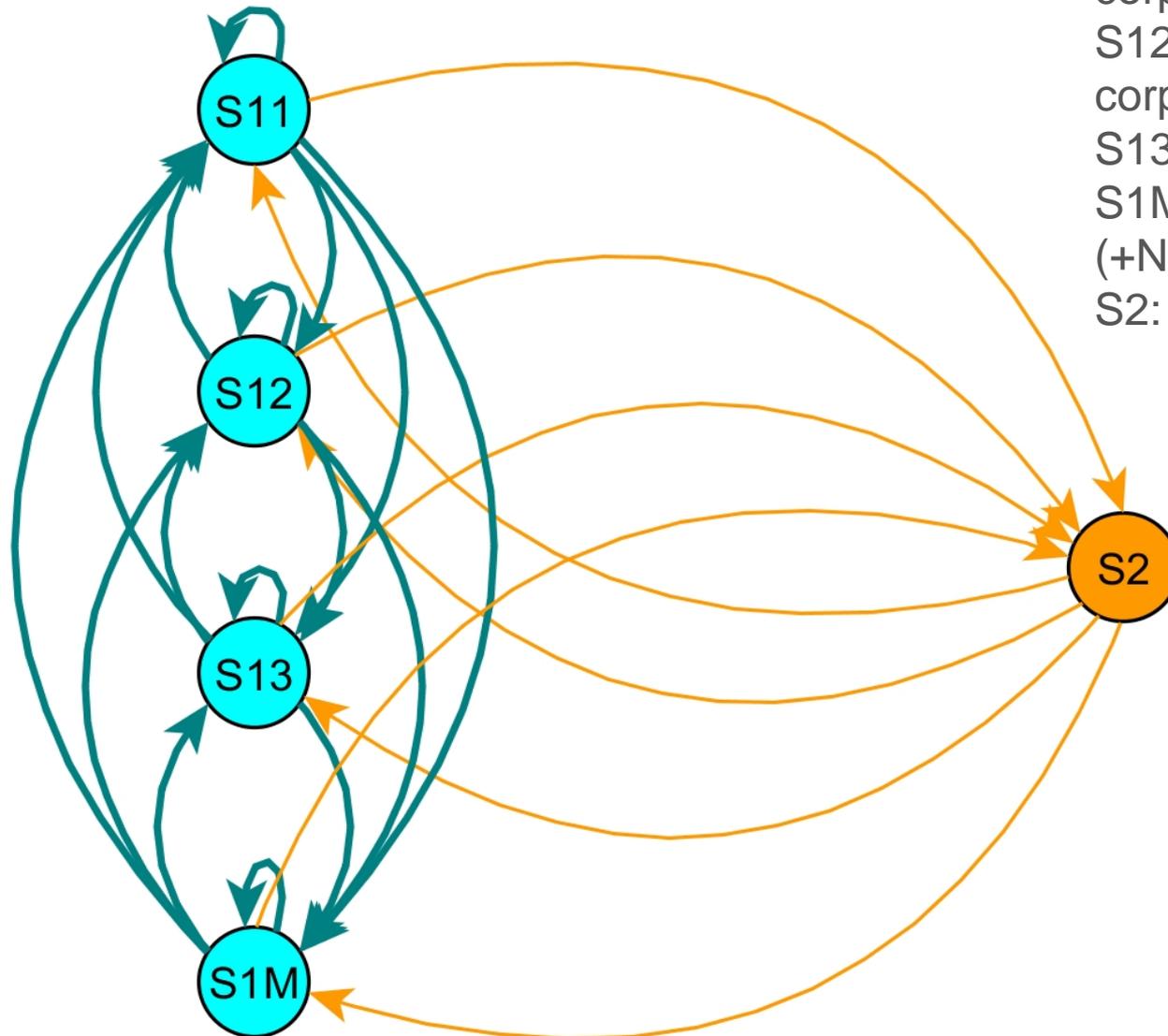
What is b.o.p./ i.i.p. about?

S11: non-financial corporations
S12: financial corporations
S13: government
S1M: Households (+NPISHs)
S2: non-residents



3. The analytical value of integrating financial accounts and b.o.p./i.i.p.

What are sector accounts about?



S11: non-financial corporations
S12: financial corporations
S13: government
S1M: Households (+NPISHs)
S2: non-residents

3. The analytical value of integrating financial accounts and b.o.p./i.i.p.

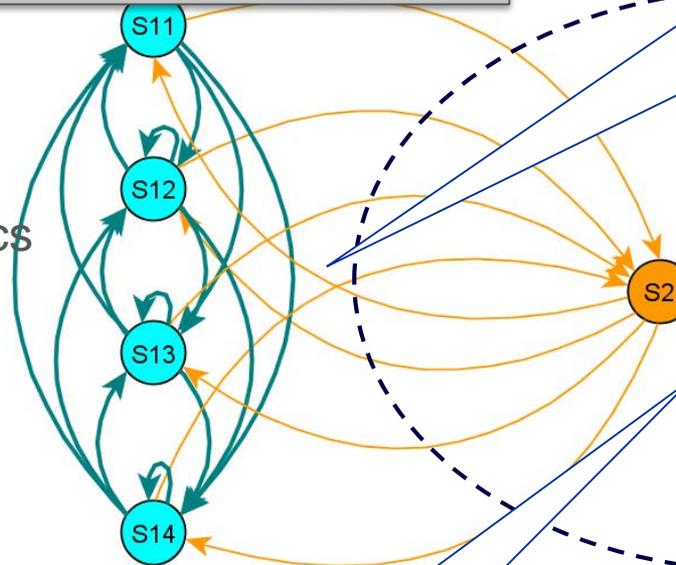
The compilation challenge ...

Why not considering BoP as a **subset** of sector accounts from a compilation point of view?

Accounting restrictions in BoP are a **subset** of accounting restrictions in sector accounts

.... , plus

- Macro aggregates
- Government statistics
- Financial statistics
- Fiscal data
- Surveys
- Micro data



- Trade statistics
- Transaction reporting systems
- Surveys
- Official data
- International organisations
- Micro data

Sources for BoP are a **subset** of sources for sector accounts

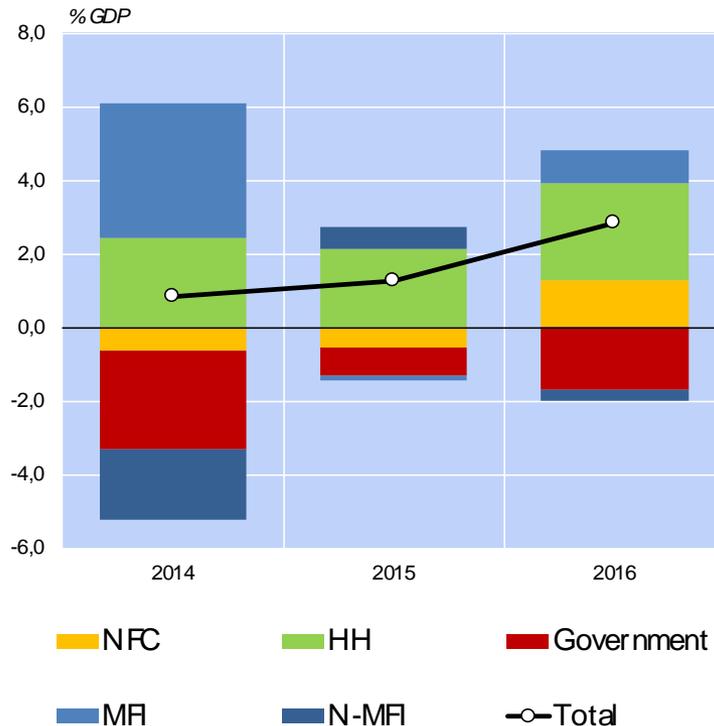
3. The analytical value of integrating financial accounts and b.o.p./i.i.p.

The analytical benefit: *Austria's* sector net lending to non-residents from different perspectives

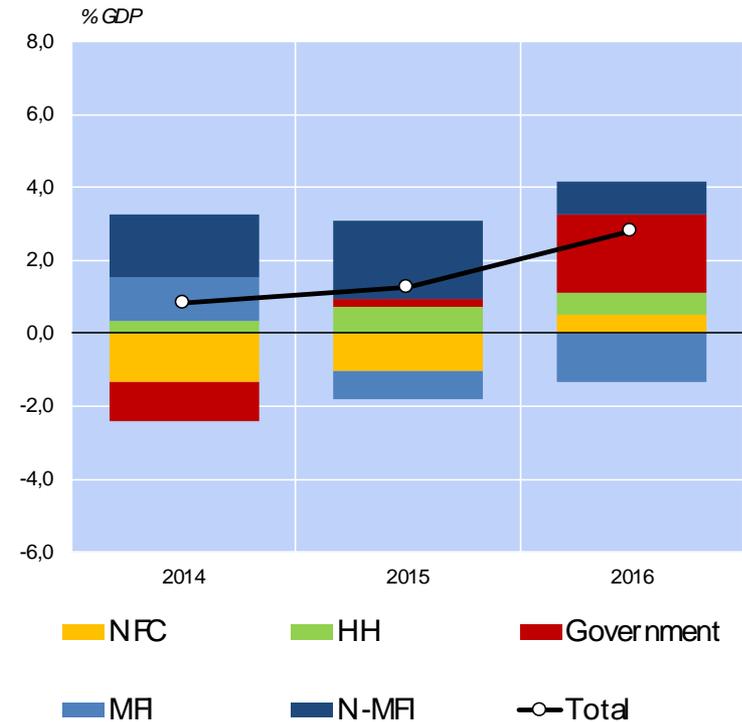
Chart 1

Net lending/net borrowing vis a vis the rest of the world

Sectoral breakdown of net lending/net borrowing



Direct cross-border net flows



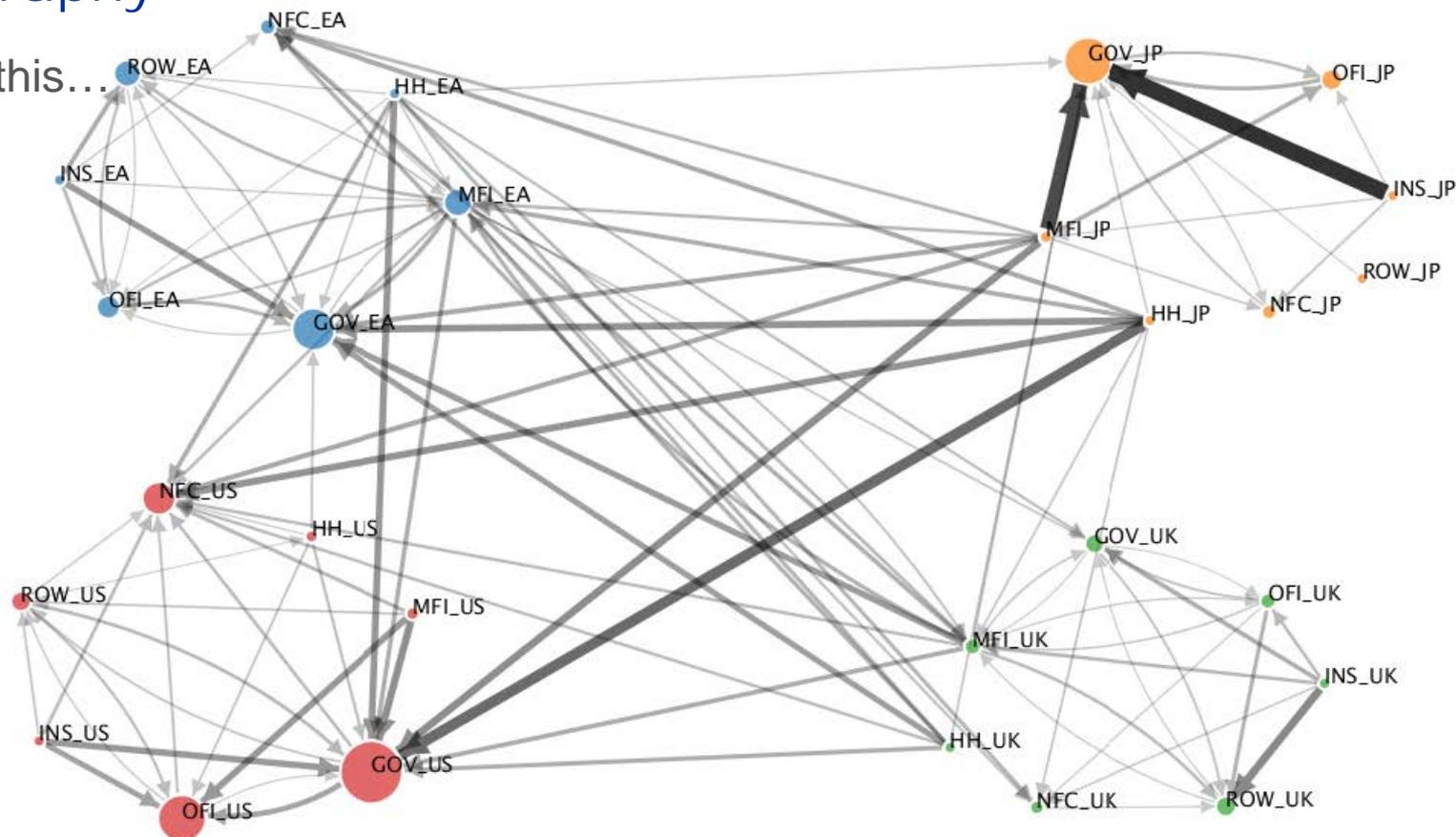
Source: OeNB

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4. Global Flow of Funds

What is it?: w-t-w matrices (networks) merging sector and geography

... like this...



Antoun de Almeida, L. (2015), "A Network Analysis of Sectoral Accounts: Identifying Sectoral Interlinkages in G-4 Economies" IMF Working Papers WP/15/111

4. Global Flow of Funds

What for?

Enhanced flow-of-flow analysis

Monitoring global financial integration

More granular monitoring of financial risks, on the basis of international exposures

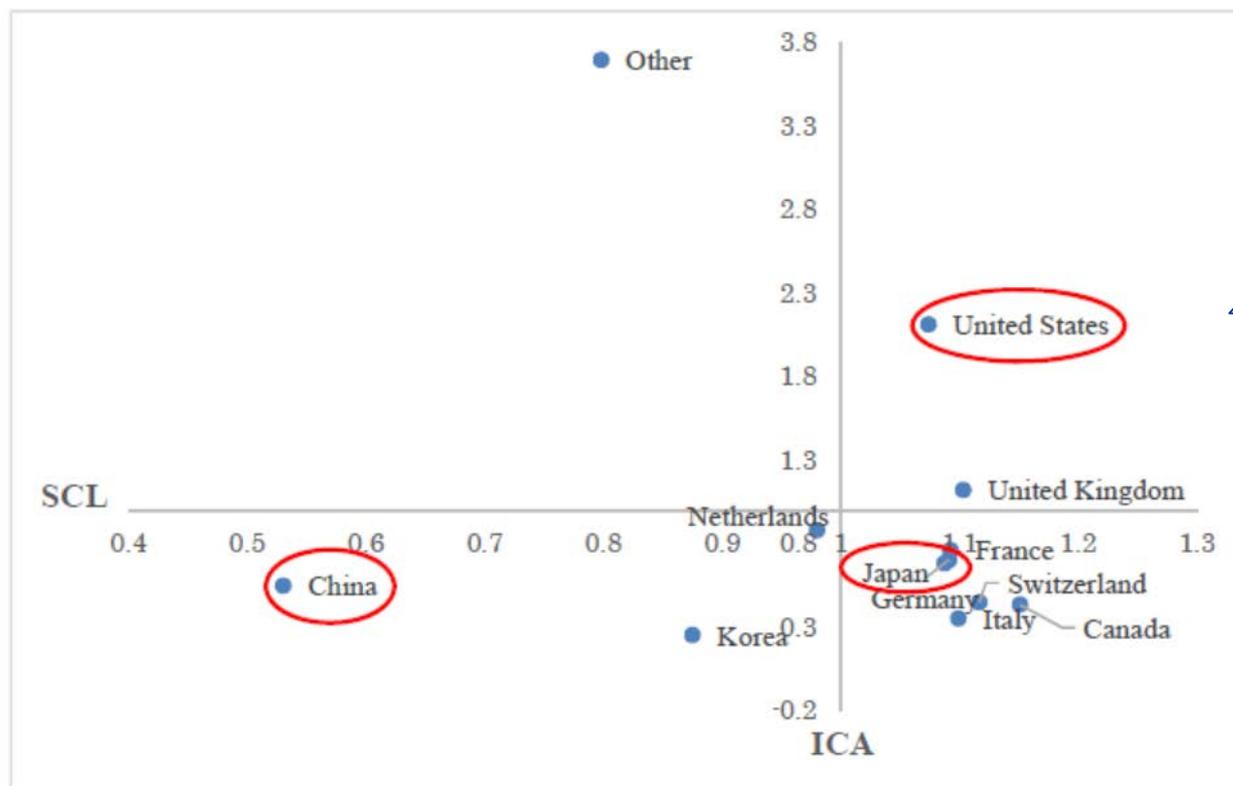
Interconnectedness, spill overs, contagion, propagation ... with a sector-to-sector , country-to-country cross-classification

Ideally, combine GFF with the inclusion of MNE-related subsector and financial instrument breakdowns

4. Global Flow of Funds

Enriching information on **interconnectedness** with a **global perspective**

e.g. Zhang, N and Zhao, X (2018) “Measuring Global Flow of Funds: A Case Study on China, Japan and the United States”. Paper prepared for the 35th IARIW General Conference

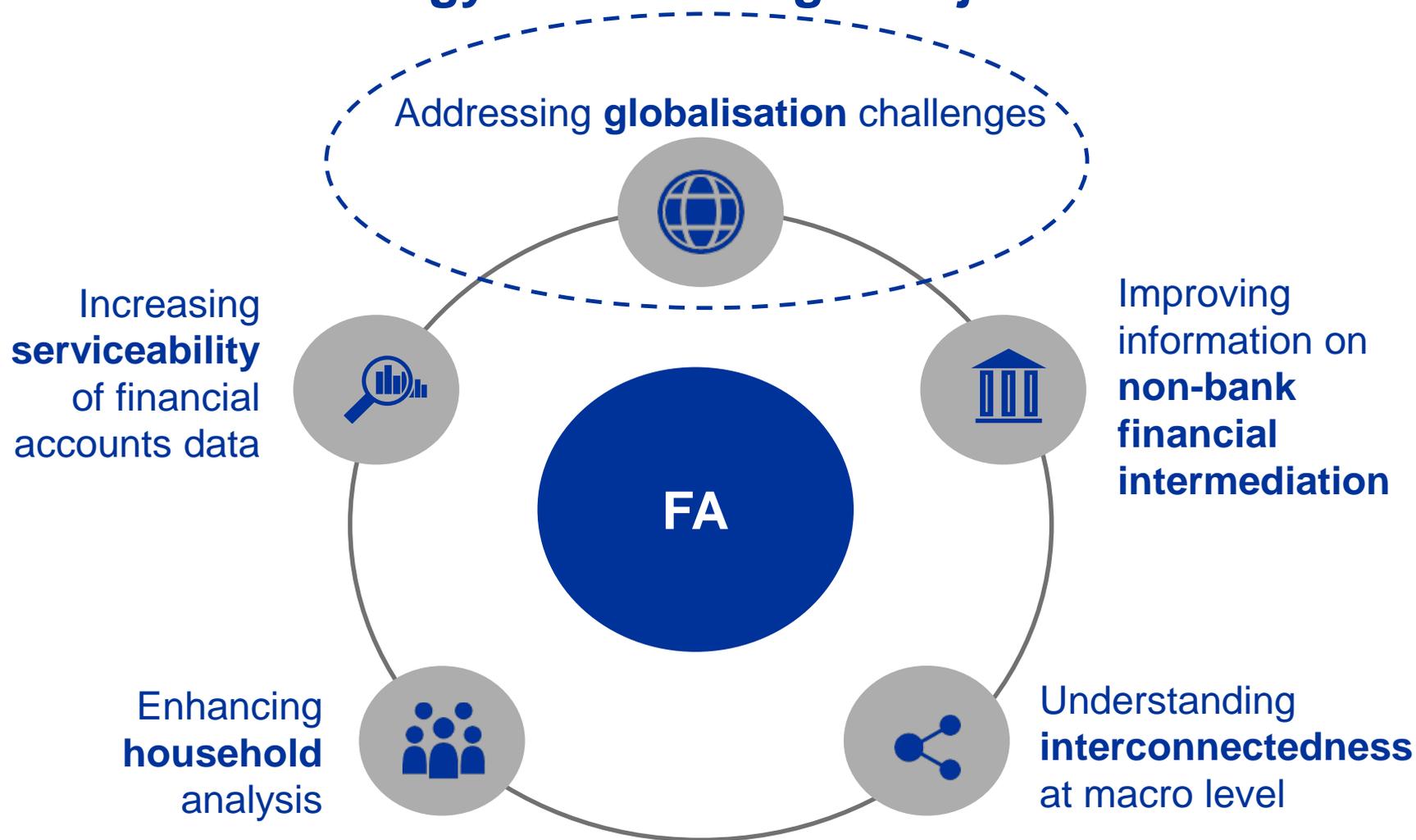


Measuring influence (ICA) and sensitivity (SCL) on a global scale by using indicators constructed from a GFF

Figure 5. Influence Coefficient of Assets & Sensitivity Coefficient of Liabilities by GFF (as the end of 2016)

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Medium-term strategy: Five Strategic Objectives



Objectives addressed through work streams that are...

selected considering trade-off cost /effort vs serviceability

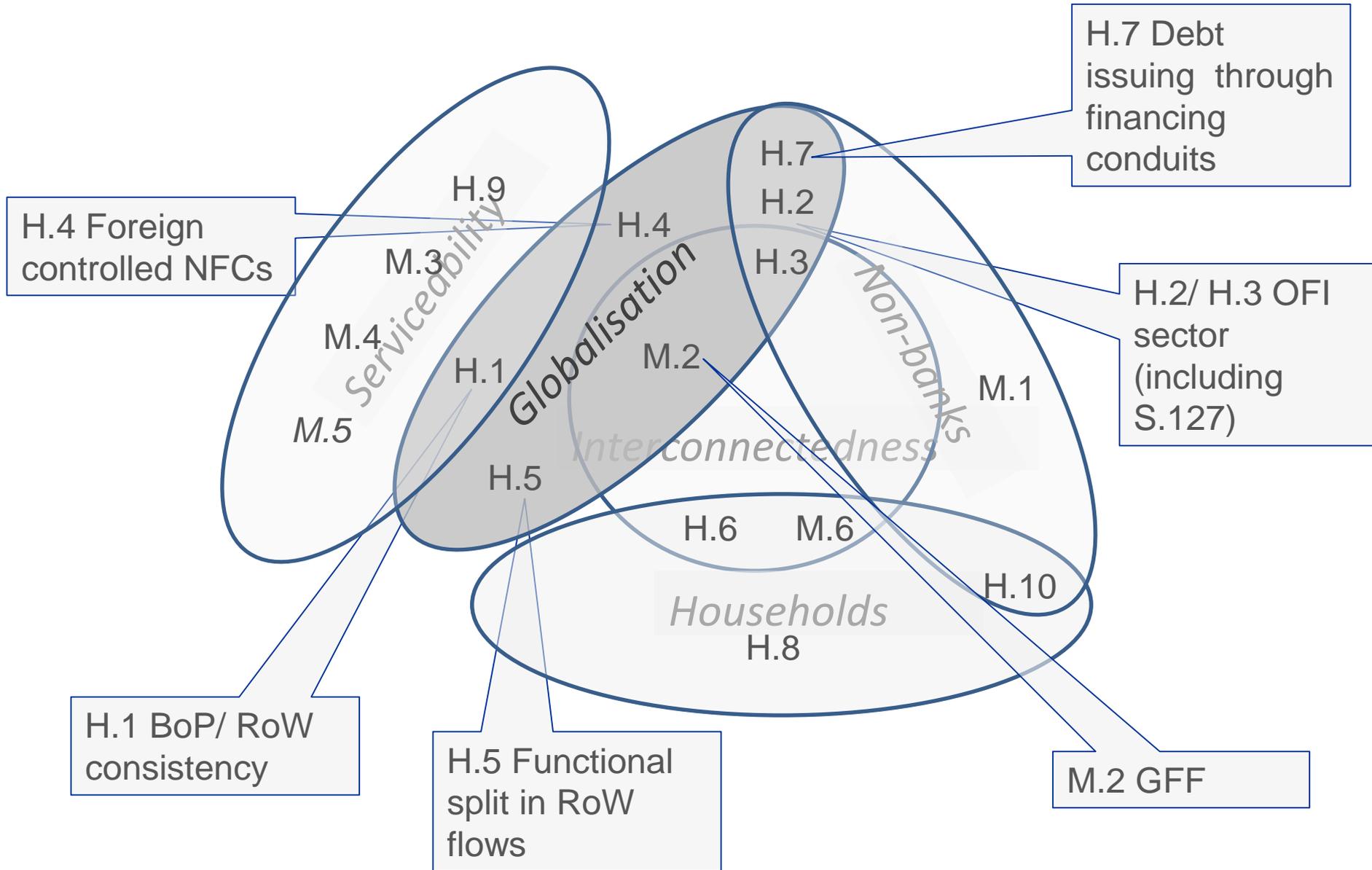
prioritised and allocated to broad time ranges

to be developed in close cooperation with the primary statistics compilers (BoP, MFS, SEC, etc.) and NSIs/ EUROSTAT

conditional on developments in raw data and reference metadata

inspired/ consistent with Recommendation #8 DGI-2

5. Globalisation in the ESCB medium-strategy for financial accounts



- 1 Challenges for statisticians and analysts
- 2 Sector/ instruments breakdowns and globalisation
- 3 The analytical value of integrating financial accounts and b.o.p./i.i.p.
- 4 Global Flow of Funds
- 5 Globalisation in the ESCB medium-strategy for financial accounts

Thank you for your attention
Questions and comments are welcome

Mail to: celestino.giron@ecb.int

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey
18-20 March 2019, Istanbul, Turkey

Assessing global liquidity: beyond borders¹

Bryan Hardy,
Bank for International Settlements

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



Assessing Global Liquidity: Beyond Borders

Bryan Hardy

Economist, International Banking and Financial Statistics, BIS

Workshop on the Use of Financial Accounts – 18-20 March 2019 | Istanbul, Turkey

Session VII “Looking Forward”

The views expressed are those of the presenter and do not necessarily reflect those of the BIS.

Borders and macro-financial data

● Often thinking within the “**triple coincidence**” framework:

- The **economic (GDP)** area
- The **currency** area
- The **decision making** area

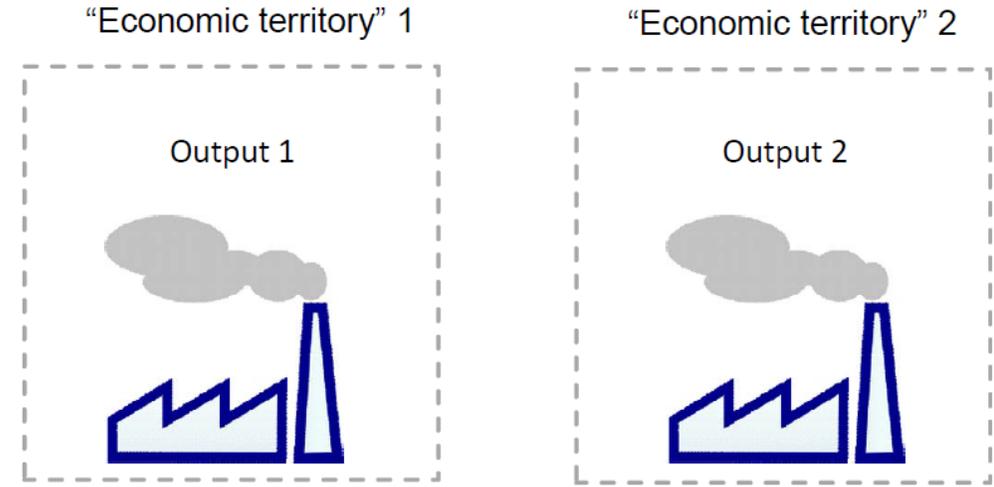


Figure 1. Boundary for national income accounting defines “economic territory”

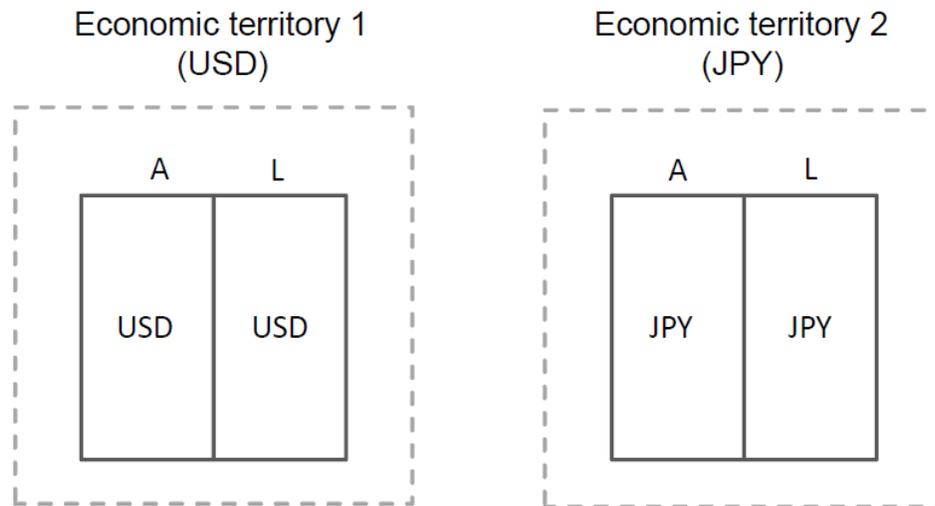


Figure 3. Boundary for national income accounting defines exchange rates as relative prices across boundary

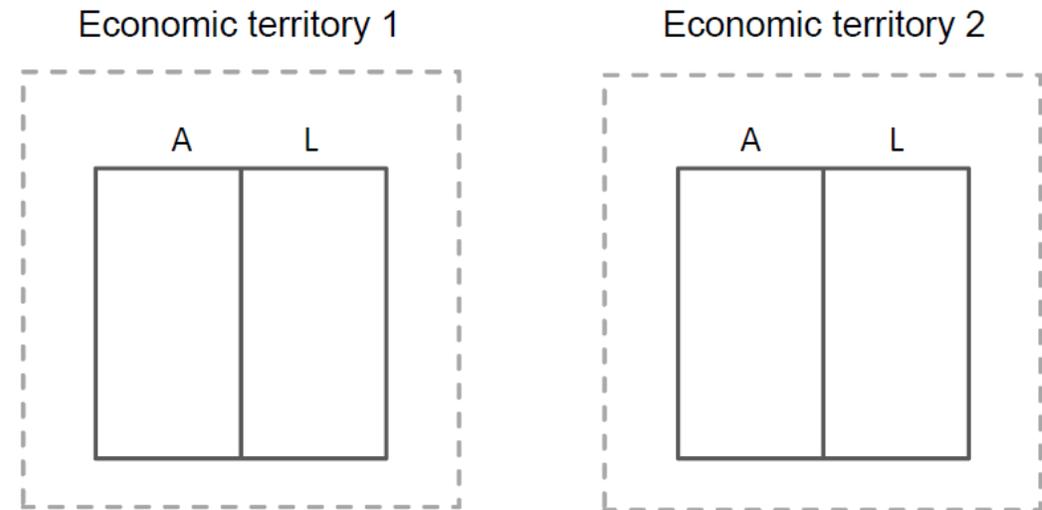


Figure 2. Boundary for national income accounting defines decision-making unit

Borders and macro-financial data

- **Same boundaries define financial accounts data**
- If triple coincidence holds and exchange rate is flexible:
 - Reach of **monetary policy remains within the border**

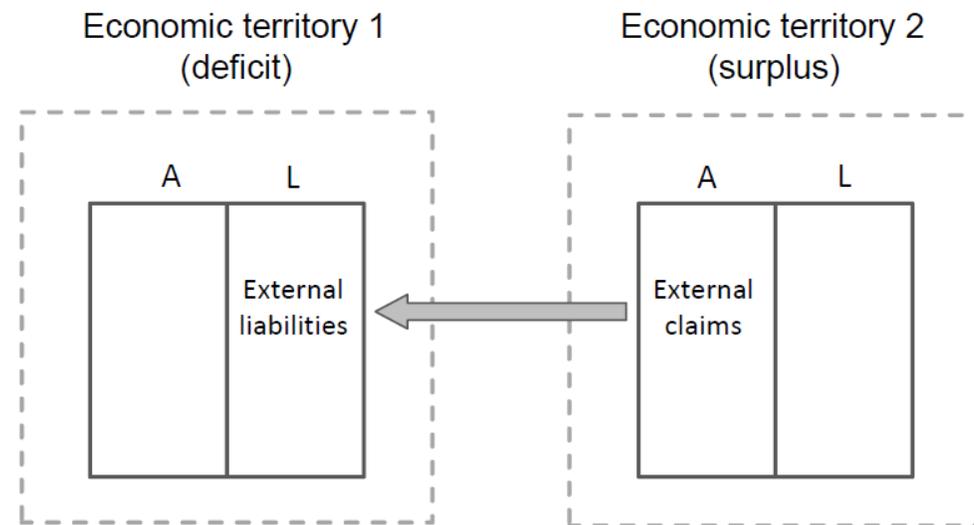


Figure 4. Boundary for national income accounting defines balance of payments and external claims/liabilities

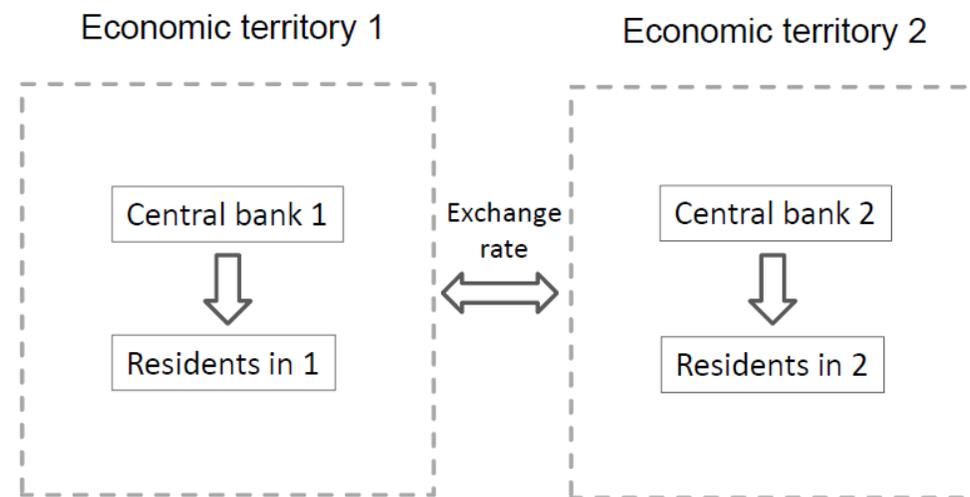


Figure 5. Boundary for national income accounting defines reach of monetary policy; floating exchange rates ensures monetary policy autonomy

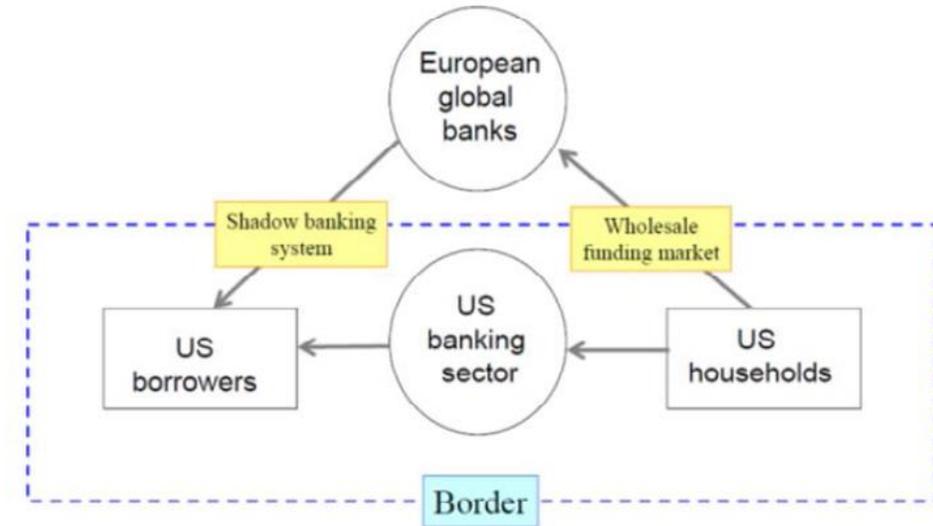
Borders and macro-financial data

- Thinking “outside the box” complementary to financial accounts framework

- Assessing **global financial conditions**
- Analyzing **domestic risks**
- Understanding how the global affects the domestic
 - **Monetary policy spillovers**, etc.

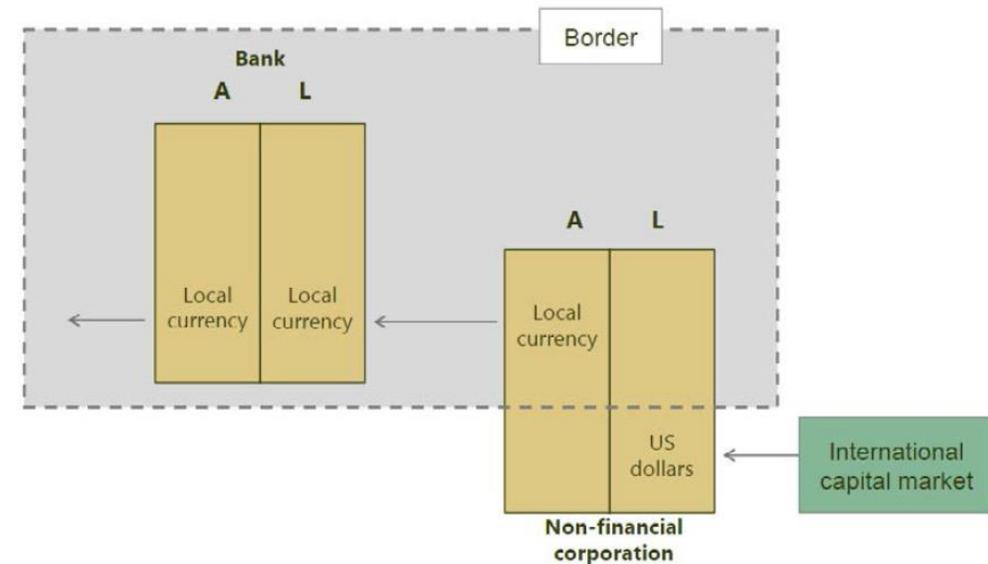
European banks and US shadow banks

Graph 3



Multinational firm as carry trader

Graph 7

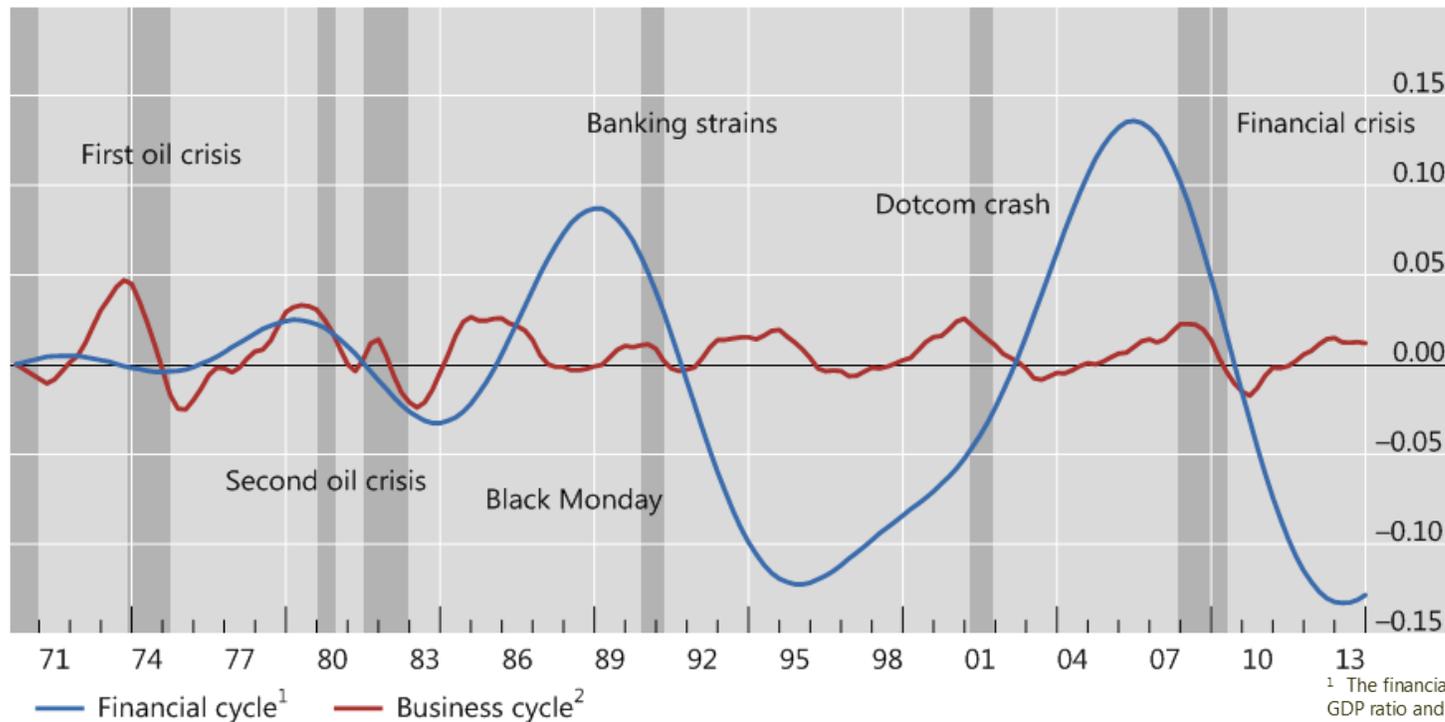


Why a global view

- Crises, spillovers → need to better understand global financial trends and assess global liquidity

- **Global financial cycle**

- Boom/bust episodes for credit
- Not always in line with **domestic business cycles**

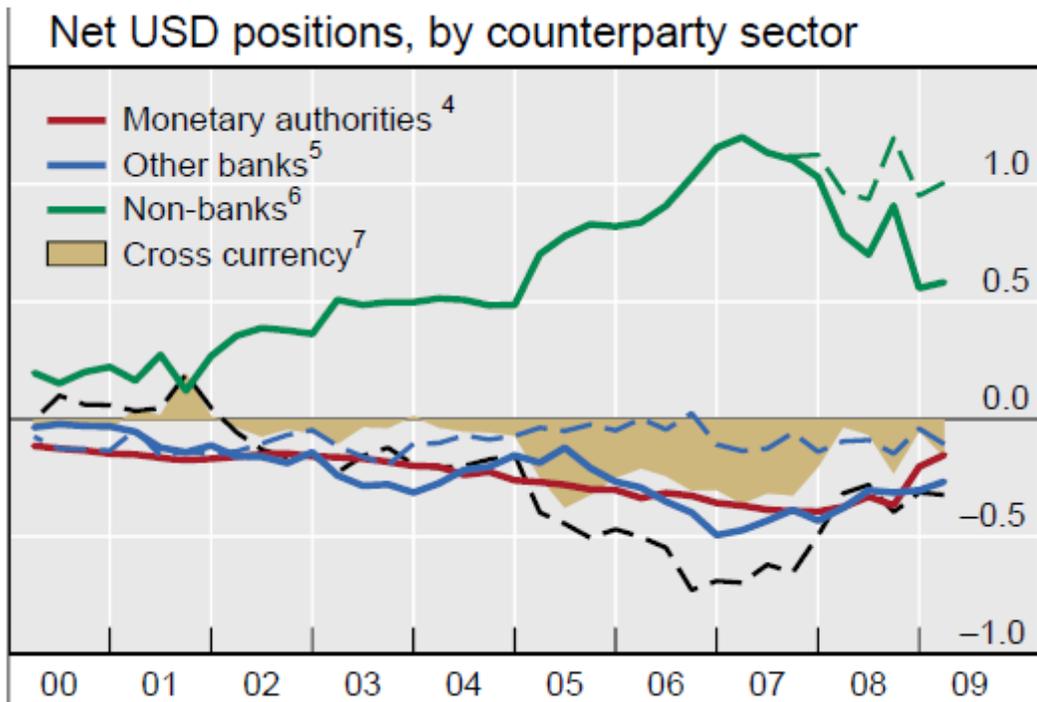


¹ The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices. ² The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years. Source: from Drehmann et al (2012), updated.

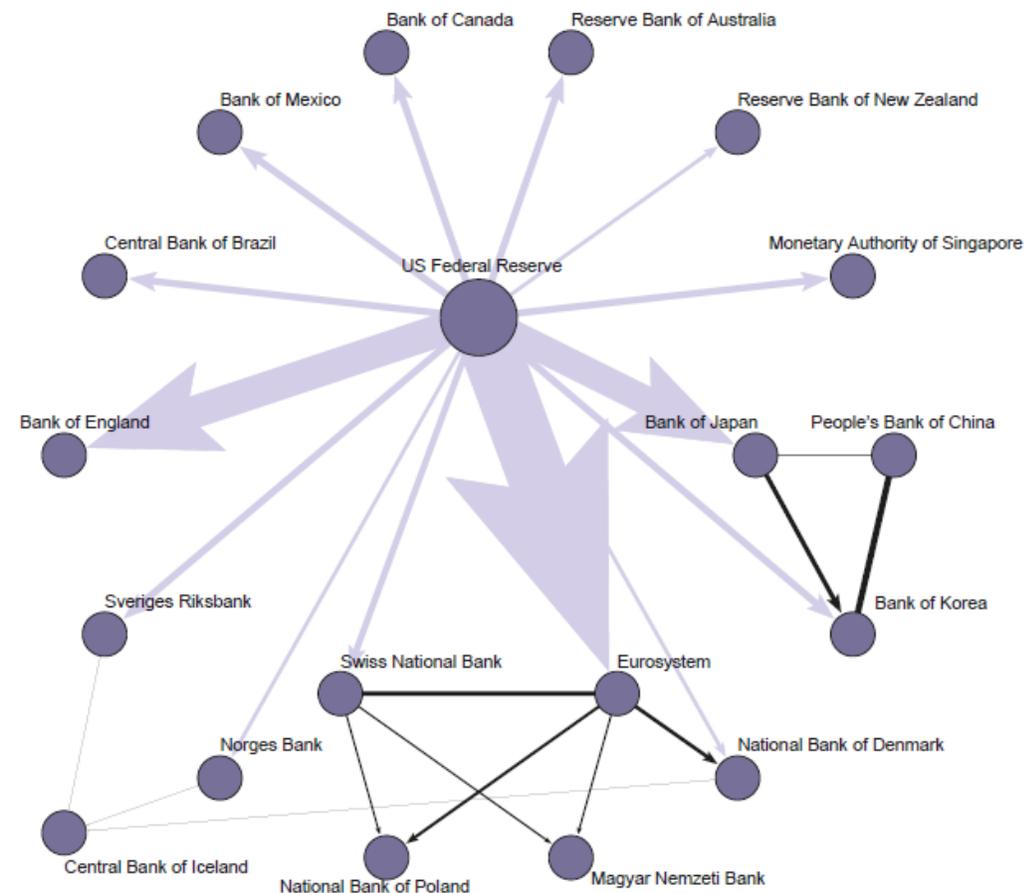
Experience from the GFC

McGuire and von Peter (2009)

- **Insufficient USD liquidity** for European banks
 - Maturity mismatch
 - Short term funding proved to be **less stable** than expected
- Network of CB swap lines provided liquidity



Central bank network of swap lines



The arrows indicate the direction of flows (where known); light shaded arrows represent US dollars provided to other central banks, dark arrows represent other currencies (evaluated at the average exchange rate during Q4 2008). The thickness of the arrows is proportional to the size of central bank swap lines, as announced; where swap lines are unlimited, the figure shows maximum usage instead, derived from auction allotments (Figure 8). The ASEAN swap network is not shown.

Source: Central banks.

Figure 7

CGFS (2011): How to measure global liquidity?

- Global liquidity is **ease of financing** in global financial markets
 - Can only really examine the “footprints,” GL not directly observed (Borio 2013)
- Global liquidity composed of
 - **Private liquidity** → majority of global liquidity
 - Determined in equilibrium by market participants
 - Focus on financial intermediaries and their leverage
 - Market liquidity → how easy to sell assets for cash?
 - Funding liquidity → how easy to obtain more financing?
 - **Public liquidity**
 - Regular monetary operations
 - Emergency facilities (eg CB swap lines) → relied upon in times of stress
- Policy relevant
 - Vulnerabilities build up (asset prices, leverage, mismatch of currency/maturity)
 - Foreign monetary policy transmission (break triple coincidence!)

CGFS (2011): How to measure global liquidity?

- Assess global liquidity along different dimensions and measures
 - **Quantities**
 - Credit (flows and stocks), leverage, mismatch, reserves, monetary aggregates
 - **Prices**
 - Policy rates, spreads, FX swap basis, property prices, VIX
- Changes in these measures can reflect **funding conditions, volatility, risk appetite**, and the build up of **vulnerabilities**

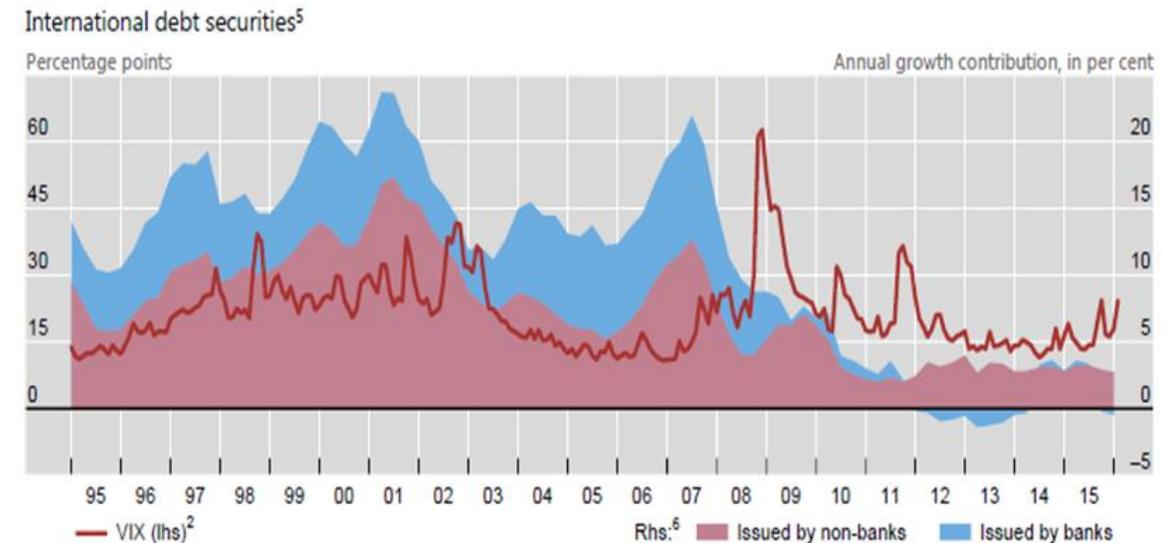
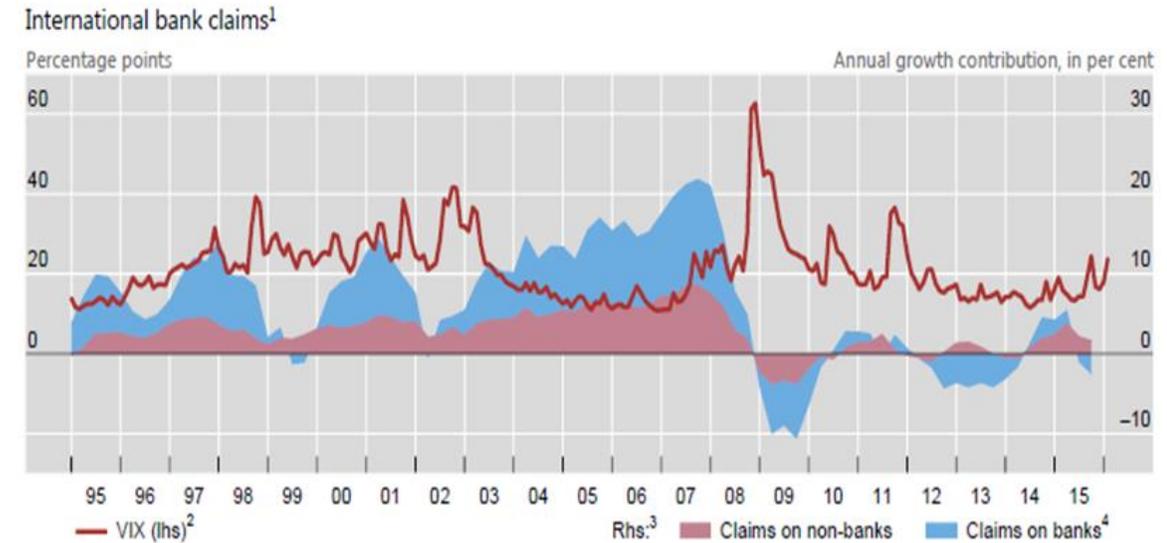
Global liquidity indicators

- BIS Global Liquidity Indicators (GLIs) focus on the **international credit** components
 - **High correlation with booms and busts** in global financial conditions
 - **Marginal source** of financing in the run up to crises
 - **Amplifies** domestic trends

1 LBS-reporting banks' cross-border claims plus local claims in foreign currencies. 2 Chicago Board Options Exchange S&P 500 implied volatility index; standard deviation, in percentage points per annum. 3 Contribution to the annual percentage change in credit to all sectors. 4 Including intragroup transactions. 5 All instruments, all maturities, all countries. Immediate issuer basis. 6 Contribution to the annual percentage change in amount outstanding in all sectors.

International bank credit, international debt securities and volatility

Graph 1



Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/gli.htm.

Global liquidity indicators

● Banks' international claims

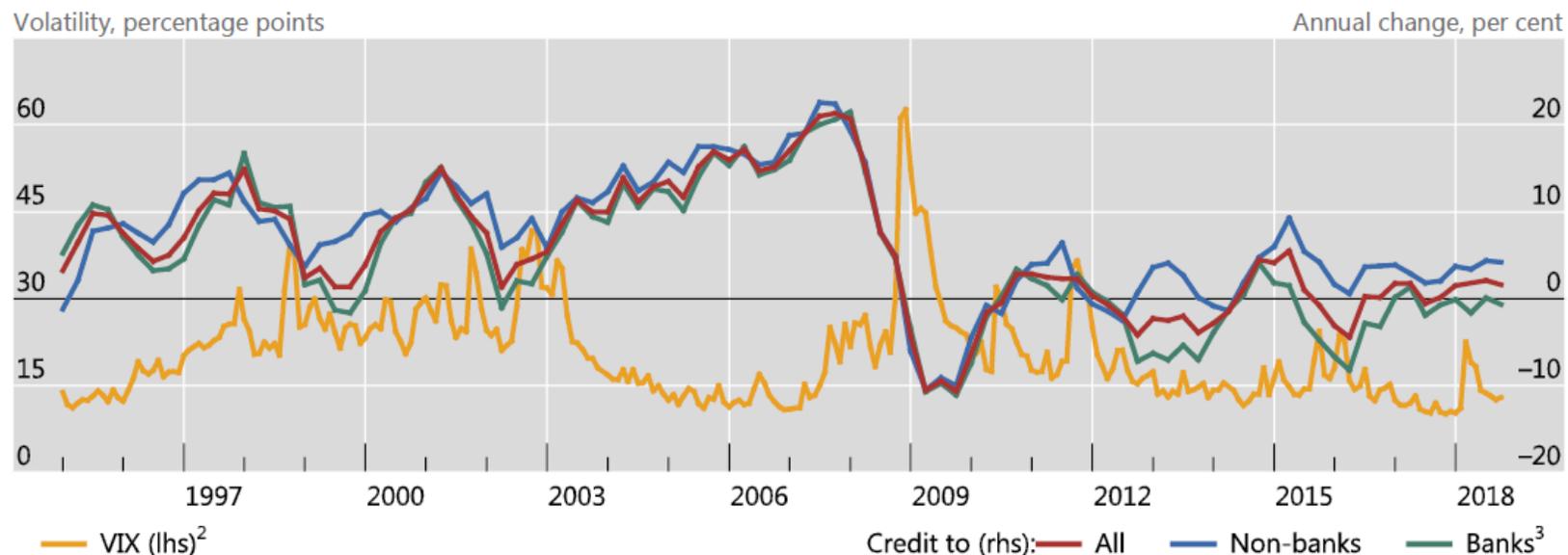
- Cross border claims
- Local claims in foreign currency

● Total credit by currency of denomination

- Bank loans + debt securities credit of non-banks
- Currencies: USD, EUR, JPY
 - Data split by whether the currency is domestic for the borrower or foreign for the borrower

Growth of international bank credit¹

Graph A1



Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/about_gli_stats.htm.

¹ LBS-reporting banks' cross-border claims plus local claims in foreign currencies. ² Chicago Board Options Exchange S&P 500 implied volatility index; standard deviation, in percentage points per annum. ³ Including intragroup transactions.

Sources: Bloomberg; BIS locational banking statistics (LBS).

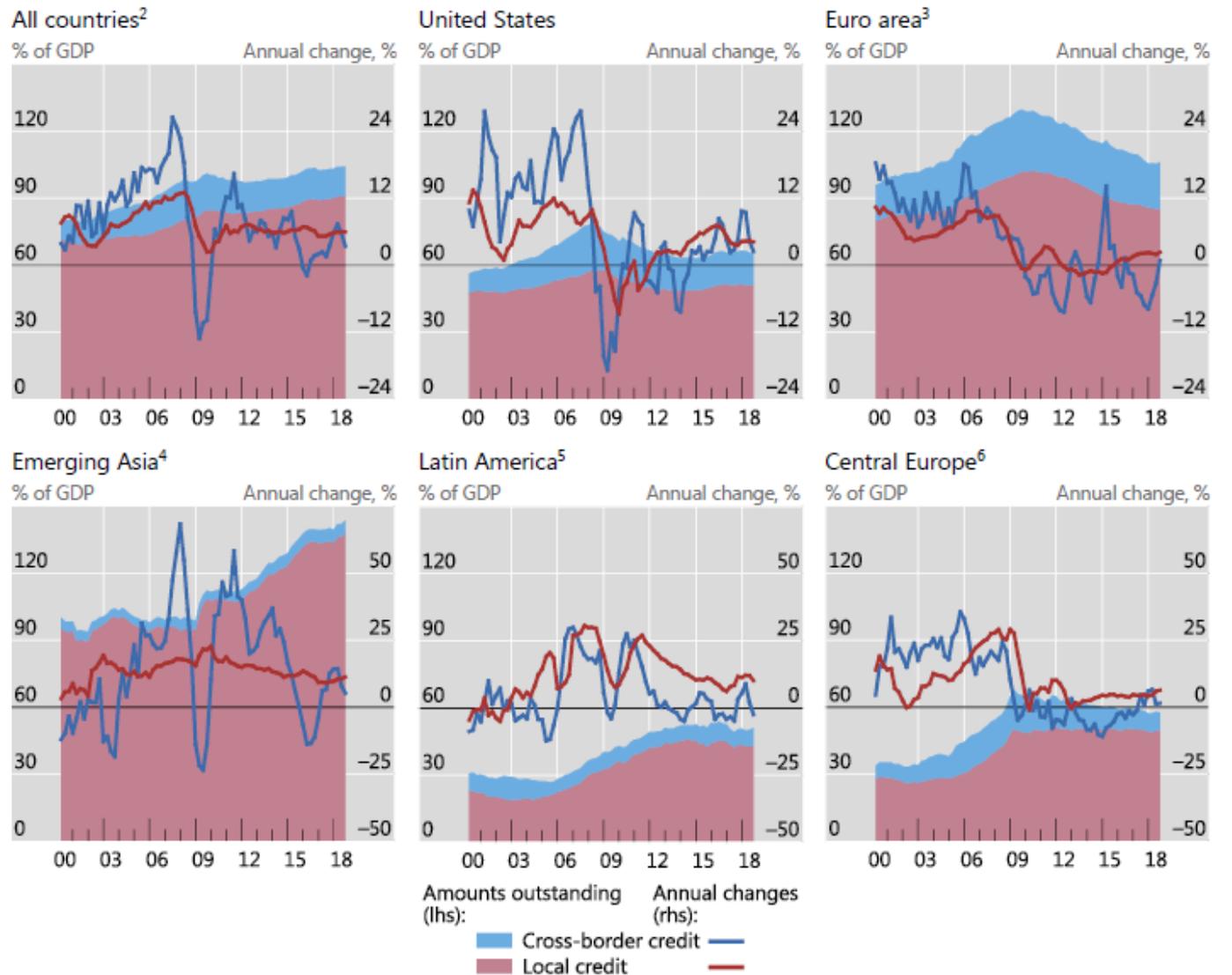
Global liquidity indicators: bank credit

- Global bank credit...
 - ...to US and the Euro area in decline after GFC...
 - ...but increasing to emerging Asia

Global bank credit to the private non-financial sector, by residence of borrower

Banks' cross-border credit plus local credit in all currencies¹

Graph A2



Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/about_gli_stats.htm.

¹ Cross-border claims of LBS-reporting banks to the non-bank sector plus local claims of all banks to the private non-financial sector. Weighted averages of the economies listed, based on four-quarter moving sums of GDP. ² Australia, Canada, Denmark, Japan, New Zealand, Norway, Russia, Saudi Arabia, South Africa, Sweden, Switzerland, Turkey and the United Kingdom, plus the countries in the other panels. ³ Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain. ⁴ China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Singapore and Thailand. ⁵ Argentina, Brazil, Chile and Mexico. ⁶ The Czech Republic, Hungary and Poland.

Sources: BIS statistics on credit to the non-financial sector; BIS locational banking statistics (LBS); BIS calculations.

Global liquidity indicators: by currency

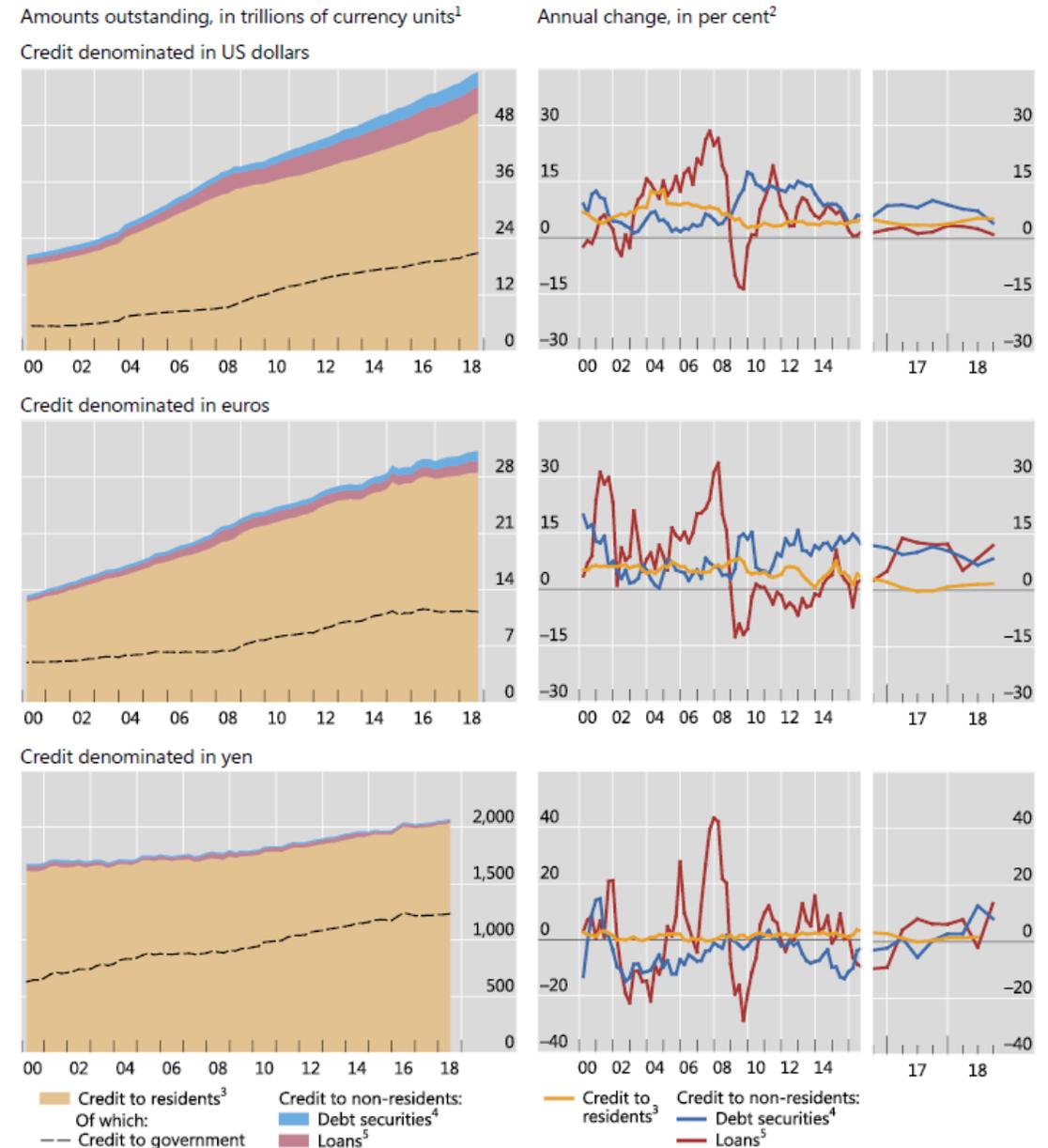
- USD
 - Cross border credit slowing
 - Bonds still growing faster than loans
 - Credit to US residents increasing

- EUR
 - Cross border credit growing quickly
 - Both bonds and loans!
 - Credit to Euro area little growth

1 Amounts outstanding at quarter-end. Amounts denominated in currencies other than USD are converted to USD at the exchange rate prevailing at end-September 2018. 2 Credit to non-financial borrowers residing in the United States/euro area/Japan. National financial accounts are adjusted using BIS banking and securities statistics to exclude credit denominated in non-local currencies. 3 Excluding debt securities issued by special purpose vehicles and other financial entities controlled by non-financial parents. EUR-denominated debt securities exclude those issued by institutions of the European Union. 4 Loans by LBS-reporting banks to non-bank borrowers, including non-bank financial entities, comprise cross-border plus local loans. For countries that are not LBS-reporting countries, local loans in USD/EUR/JPY are estimated as follows: for China, local loans in foreign currencies are from national data and are assumed to be composed of 80% USD, 10% EUR and 10% JPY; for other non-reporting countries, local loans to non-banks are set equal to LBS-reporting banks' cross-border loans to banks in the country (denominated in USD/EUR/JPY), on the assumption that these funds are on lent to non-banks.

Global credit to the non-financial sector, by currency

Graph A3

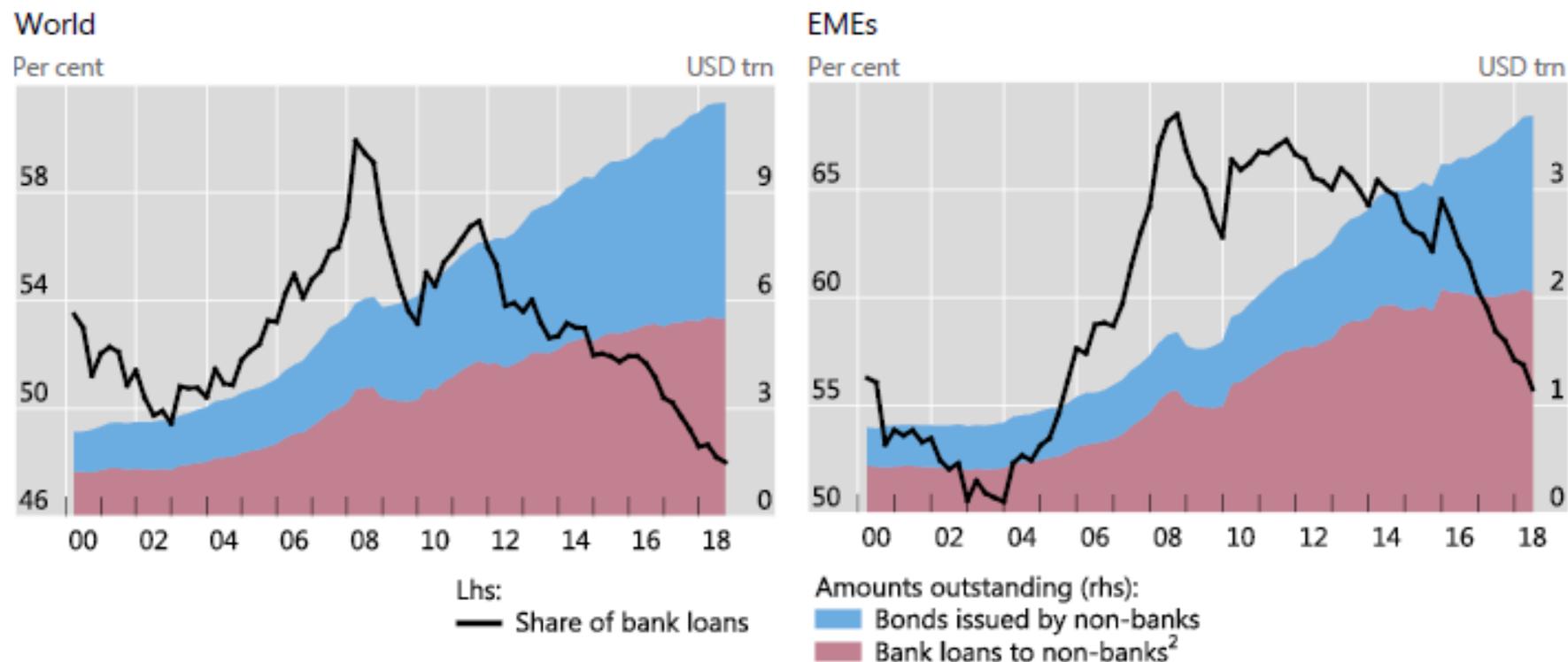


Global liquidity indicators: USD in world and EMEs

- Dollar credit expanding worldwide
- Bonds now more than 50%
- EMEs still get majority from loans

US dollar-denominated credit to non-banks outside the United States¹

Graph A4



Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/gli.htm.

¹ Non-banks comprise non-bank financial entities, non-financial corporations, governments, households and international organisations. ² Loans by LBS-reporting banks to non-bank borrowers, including non-bank financial entities, comprise cross-border plus local loans.

Sources: Datastream; Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; national data; BIS locational banking statistics (LBS); BIS calculations.

Role of bond financing

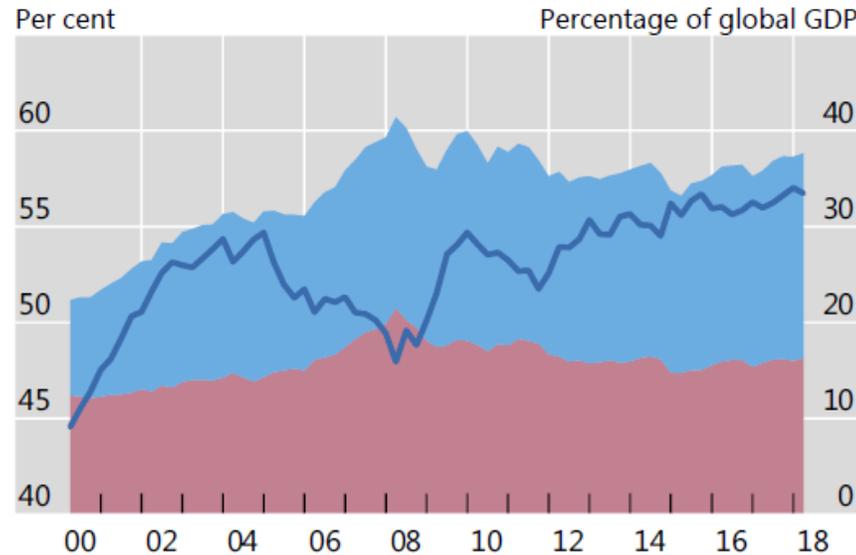
- Bond debt in international credit (all currencies) has increased worldwide
- More bonds than loans for both USD and EUR

The share of debt securities and the US dollar in international credit has risen

International credit to the non-bank sector, amounts outstanding

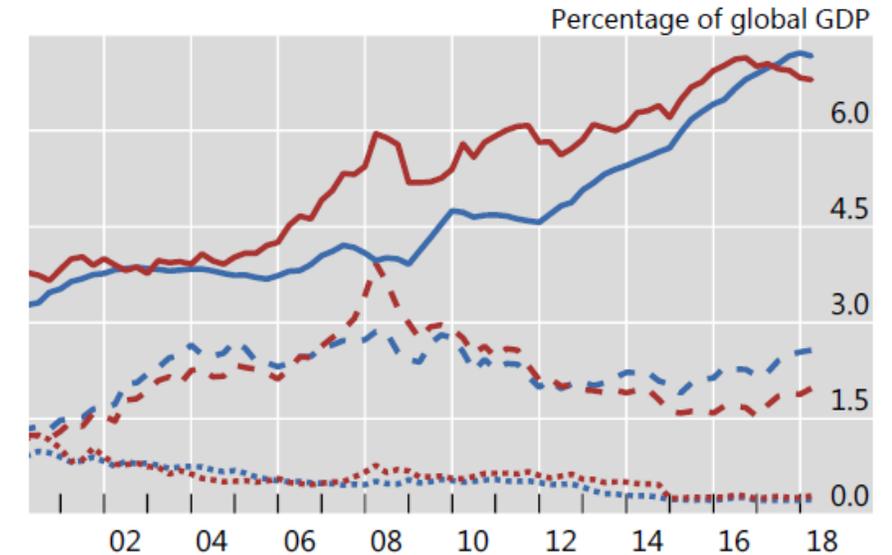
Graph 1

International credit to non-banks by instrument



Lhs: — Share of international debt securities
 Rhs: — Bank loans¹
 — International debt securities²

International credit to non-residents by instruments and currency



Bank loans: — USD: — EUR: — JPY: —
 International debt securities: - - - USD: - - - EUR: - - - JPY: - - -

Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/about_gli_stats.htm.

¹ Cross-border loans and local loans in foreign currency to non-bank borrowers. ² By residence and immediate sector of issuer; all instruments; all maturities; non-bank issuers. International debt securities are debt securities issued by non-banks in a market other than the local market of the country where the borrower resides.

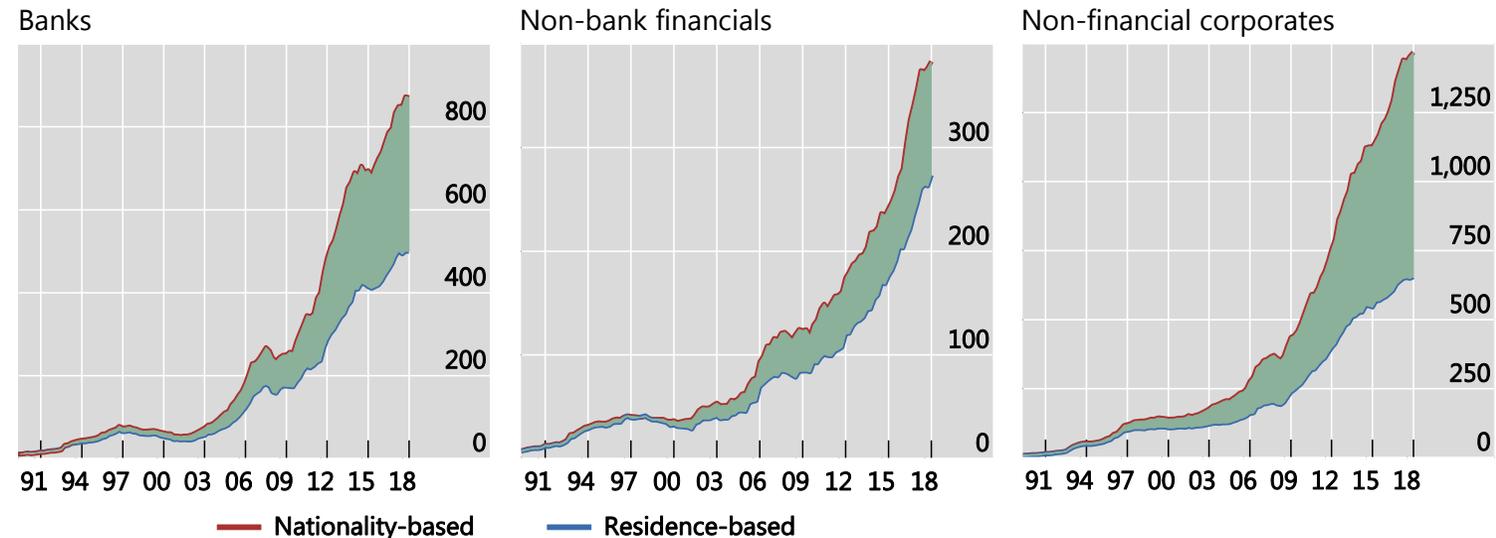
Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS locational banking statistics and global liquidity indicators; BIS calculations; authors' calculations.

Offshore debt securities issuance

- Financial and non-financial firms operate **across borders**
 - Foreign affiliates can raise funds abroad
 - generates liabilities ultimately borne by domestic parent
 - **Not captured by standard statistics**

Emerging markets - international debt securities

Amounts outstanding, USD billion

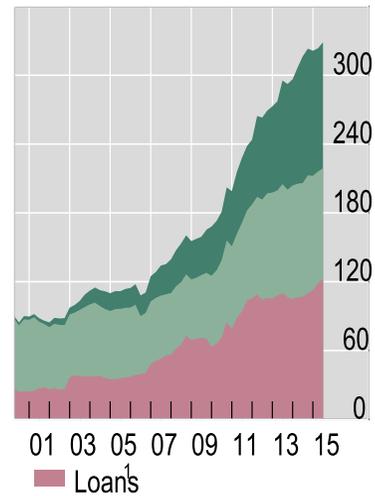


Nationality-based data by sector of the ultimate issuer; residence-based data by sector of immediate the issuer.

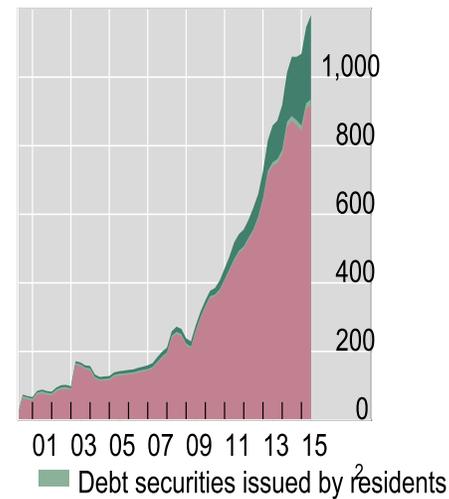
Source: BIS debt securities statistics.

Global liquidity indicators: USD credit to non-banks + offshore issuance

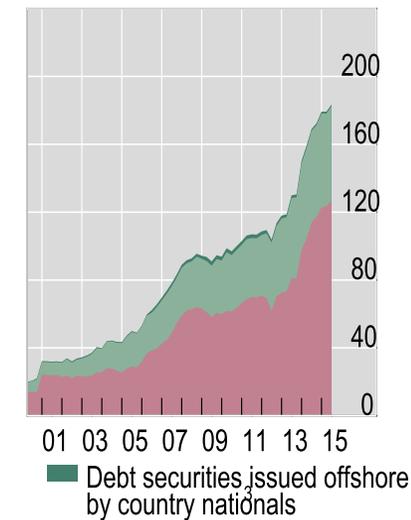
Brazil



China



Turkey



¹ US dollar-denominated loans to non-bank residents of the country listed in the panel titles. For China, locally extended US dollar loans are estimated from national data on total foreign currency loans, assuming 80% are dollar-denominated. ² Outstanding US dollar debt securities issued by non-bank residents of the country listed in the panel title. ³ Outstanding US dollar-denominated bonds issued offshore (ie outside the country listed in the panel title) by non-banks with the nationality listed in the panel title.

Sources: BIS locational banking statistics by residency; BIS International Debt Securities Statistics; national sources; BIS calculations.

Other relevant BIS datasets

- **Total credit series**

- Aligns more with financial accounts definitions → borders
- Credit from **all sectors**: domestic banks, cross border banks, non-banks
- **Instruments**: Loans, debt securities (and currency and deposits for government sector)
- **Borrowing sectors**: government, households, non-financial corporations
- Comparable across (40+) countries
- Long time series
 - Facilitates computation of credit-to-GDP gaps

- **Credit-to-GDP gaps**

- Indicator of leverage → excess liquidity creation → vulnerabilities

- **Debt service ratios**

- **Property prices**

- **Foreign exchange** and **derivatives** turnover

Looking forward

- Greater financial integration → **global financial conditions have a growing impact on domestic economic conditions**
 - Affects international capital flows & dynamics of credit, financial asset and property prices
- **Global liquidity can contribute to the build-up of financial system vulnerabilities**
 - Large mismatches across currencies, maturities and countries
- **Shortages of global liquidity can have important implications for economic growth**
 - Lessons from the 2008 crisis
- **Assessing global liquidity and utilizing “borderless” measures an important complement to enhanced financial accounts data**
 - More granular data + different measures for a more complete financial stability picture

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