FSB FINANCIAL STABILITY BOARD

Global Shadow Banking Monitoring Report 2012

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Executive Summary

The "shadow banking system" can broadly be described as "credit intermediation involving entities and activities outside the regular banking system". Although intermediating credit through non-bank channels can have advantages, such channels can also become a source of systemic risk, especially when they are structured to perform bank-like functions (e.g. maturity transformation and leverage) and when their interconnectedness with the regular banking system is strong. Therefore, appropriate monitoring and regulatory frameworks for the shadow banking system needs to be in place to mitigate the build-up of risks.

The FSB set out its initial recommendations to enhance the oversight and regulation of the shadow banking system in its report to the G20 in October 2011. [1] Based on the commitment made in the report, the FSB has conducted its second annual monitoring exercise in 2012 using end-2011 data. In the 2012 exercise coverage was broadened to include 25 jurisdictions and the euro area as a whole, compared to 11 jurisdictions and the euro area in the 2011 exercise. The addition of new jurisdictions brings the coverage of the monitoring exercise to 86% of global GDP and 90% of global financial system assets.

The exercise was conducted by the FSB Analytical Group on Vulnerabilities (AGV), the technical working group of the FSB Standing Committee on Assessment of Vulnerabilities (SCAV), using quantitative and qualitative information, and followed a similar methodology as that used for the 2011 exercise. Its primary focus is on a "macro-mapping" based on national Flow of Funds and Sector Balance Sheet data (hereafter Flow of Funds), that looks at all non-bank financial intermediation[2] to ensure that data gathering and surveillance cover the areas where shadow banking-related risks to the financial system might potentially arise.

The main findings from the 2012 exercise are as follows[3]:

- According to the "macro-mapping" measure, the global shadow banking system, as conservatively proxied by "Other Financial Intermediaries" grew rapidly before the crisis, rising from $26 trillion in 2002 to $62 trillion in 2007.[4] The size of the total system declined slightly in 2008 but increased subsequently to reach $67 trillion in 2011 (equivalent to 111% of the aggregated GDP of all jurisdictions). Compared to last year's estimate, expanding the coverage of the monitoring exercise has increased the global estimate for the size of the shadow banking system by some $5 to $6 trillion.
- The shadow banking system's share of total financial intermediation has decreased since the onset of the crisis and has remained at around 25% in 2009-2011, after having peaked at 27% in 2007. In broad terms, the aggregate size of the shadow banking system is around half the size of banking system assets.

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1 http://www.financialstabilityboard.org/publications/r_111027a.pdf

2 Unless otherwise mentioned, non-bank financial intermediation (or intermediaries) excludes intermediation by insurance companies, pension funds and public financial institutions.

3 The figures in this report are subject to change until the report is published.

4 "Other Financial Intermediaries" are a category of Flow of Funds that comprises financial institutions that are not: banks, central banks, public financial institutions, insurance companies or pension funds.

- The US has the largest shadow banking system, with assets of $23 trillion in 2011, followed by the euro area ($22 trillion) and the UK ($9 trillion). However, the US' share of the global shadow banking system has declined from 44% in 2005 to 35% in 2011. This decline has been mirrored mostly by an increase in the shares of the UK and the euro area.
- There is a considerable divergence among jurisdictions in terms of: (i) the share of non-bank financial intermediaries (NBFIs) in the overall financial system; (ii) relative size of the shadow banking system to GDP; (iii) the activities undertaken by the NBFIs; and (iv) recent growth trends.
- The Netherlands (45%) and the US (35%) are the two jurisdictions where NBFIs are the largest sector relative to other financial institutions in their systems[5]. The share of NBFIs is also relatively large in Hong Kong (around 35%), the euro area (30%), Switzerland, the UK, Singapore, and Korea (all around 25%).
- Jurisdictions where NBFIs are the largest relative to GDP are Hong Kong (520%), the Netherlands (490%), the UK (370%), Singapore (260%) and Switzerland (210%). Part of this concentration can be explained by the fact that these jurisdictions are significant international financial centres that host activities of foreign-owned institutions.
- After the crisis (2008-2011), the shadow banking system continued to grow although at a slower pace in seventeen jurisdictions (half of them being emerging markets and developing economies undergoing financial deepening) and contracted in the remaining eight jurisdictions.
- National authorities have also performed more detailed analyses of their NBFIs in the form of case studies, examples of which are presented in Annex 5[6]. Although further data and more in-depth analysis may be needed, these studies illustrate the application of risk factor analysis (e.g. maturity/liquidity transformation, leverage, regulatory arbitrage) to narrow down to a subset of entities and activities that might pose systemic risk.
- Among the jurisdictions where data is available, interconnectedness risk tends to be higher for shadow banking entities than for banks. Although further analysis may be needed with more cross-border and prudential information, shadow banking entities seem to be more dependent on bank funding and are more heavily invested in bank assets, than vice versa.
- Regarding finance companies, which are a focus area for this year's report, the survey responses from 25 participating jurisdictions suggest the existence of a wide range of business models covered under the same label. The responses also underlined the important role finance companies play in providing credit to the real economy, especially by filling credit voids that are not covered by other financial

[5] According to case studies presented in annex 5, a closer analysis of the Dutch shadow banking sector shows that most non-bank entities are so-called special financial institutions (SFIs) rather than shadow banks, which are mainly tax-driven.

[6] These case studies are examples of applying the proposed framework to the currently available data in certain member jurisdictions and do not necessarily represent the assessment of the FSB.

institutions. A few jurisdictions have also emphasised the need to enhance monitoring of the sector as finance companies may be liable to specific risk factors and/or regulatory arbitrage. However, since the size of the sector is limited, participating jurisdictions do not see significant systemic risks arising from this sector at present.

Going forward, the monitoring exercise should benefit from continuous improvement and thorough follow-up by jurisdictions of identified gaps and data inconsistencies. It is also important that the monitoring framework remains sufficiently flexible, forward-looking and adaptable to capture innovations and mutations that could lead to growing systemic risks and arbitrage.

Further improvements in data availability and granularity will be essential for the monitoring exercise to be able to adequately capture the magnitude and nature of risks in the shadow banking system. This is especially relevant for those jurisdictions that lack fully developed Flow of Fund statistics (e.g. China, Russia, Saudi Arabia) or have low granularity at the sector level resulting in a relatively large share of unidentified NBFIs (e.g. UK, euro area-wide Flow of Funds). Data enhancing efforts may leverage off on-going initiatives to improve Flow of Funds statistics (e.g. the IMF/FSB Data Gaps initiatives) or on supervisory information and market intelligence as a complement to Flow of Funds data. Survey data or market estimates can also be used more extensively for those parts of the shadow banking system (e.g. hedge funds) for which Flow of funds do not provide a reliable estimate.

The use of additional analytical methods based on market, supervisory and other data to conduct deeper assessment of risks, for example, maturity transformation, leverage and interconnectedness (see as an illustration Annex 4) would also provide significant value added to the report.

Lastly, the mostly entity-based focus of the "macro-mapping" should be complemented next year by obtaining more granular data on assets/liabilities (e.g. repos, deposits) or expanding activity-based monitoring, to cover developments in relevant markets where shadow banking activity may occur, such as repo markets, securities lending and securitisation. In addition to existing supervisory and market information, the implementation of some of the shadow banking regulatory recommendations, such as the transparency recommendations from the FSB Workstream on securities lending and repos (WS5), is expected to provide the necessary data for such an enriched monitoring.[7]

[7] http://www.financialstabilityboard.org/publications/r_121118b.pdf

Introduction

Efficient monitoring of the size and of the adaptations and mutations of shadow banking are important elements for strengthening the oversight of this sector, which is a key priority for the FSB and the G20. In its report "Shadow Banking: Strengthening Oversight and Regulation" to the G20 (hereafter October 2011 Report)[8], the FSB set out approaches for effective monitoring of the shadow banking system and has published the results of its first attempt to map the shadow banking system using data from eleven of its member jurisdictions[9] and the euro area. It also committed to conducting annual monitoring exercises to assess global trends and risks in the shadow banking system through its Standing Committee on Assessment of Vulnerabilities (SCAV), drawing on the enhanced monitoring framework defined in the report.

Based on this commitment, the FSB recently conducted its annual monitoring exercise for 2012, significantly broadening the range of jurisdictions covered to include all 24 FSB member jurisdictions, Chile[10], and the euro area. This expanded coverage enhances the comprehensive nature of the monitoring, since participating jurisdictions represent in aggregate 86% of global GDP and 90% of global financial system assets (up from 60% and 70% per cent, respectively). The exercise was conducted by the Analytical Group on Vulnerabilities (AGV), the technical working group of the SCAV, during summer 2012, using end-2011 data as well as additional qualitative information and market intelligence. This report summarises the preliminary results of the 2012 monitoring exercise.

1. Methodology

In its October 2011 report, the FSB broadly defined shadow banking as the system of credit intermediation that involves entities and activities fully or partially outside the regular banking system, and set out a practical two-step approach in defining the shadow banking system:

- First, authorities should cast the net wide, looking at all non-bank credit intermediation to ensure that data gathering and surveillance cover all areas where shadow banking-related risks to the financial system might potentially arise.
- Second, for policy purposes, authorities should narrow the focus to the subset of non-bank credit intermediation where there are (i) developments that increase systemic risk (in particular maturity/liquidity transformation, imperfect credit risk transfer and/or leverage), and/or (ii) indications of regulatory arbitrage that is undermining the benefits of financial regulation.

Based on the above approach, the FSB recommended that authorities enhance their monitoring framework to assess shadow banking risks through the application of a stylised monitoring process, guided by seven high-level principles. This process would require authorities to first assess the broad scale and trends of non-bank financial intermediation in

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8 http://www.financialstabilityboard.org/publications/r_111027a.pdf

9 These were Australia, Canada, France, Germany, Italy, Japan, Korea, the Netherlands, Spain, the UK and the US.

10 Chile participates in the AGV and voluntarily participated in the exercise.

the financial system ("macro-mapping"), drawing on information sources such as Flow of Funds and Sector Balance Sheet data (hereafter Flow of Funds data), and complemented with other relevant information such as supervisory data. Authorities should then narrow down their focus to credit intermediation activities that have the potential to pose systemic risks, by focusing in particular on activities involving the four key risk factors as set out in the second step (i.e. maturity/liquidity transformation, imperfect credit risk transfer and/or leverage).

In line with these recommendations, the 2012 annual monitoring exercise primarily focused on the "macro-mapping" or the first phase of the stylised monitoring process through collecting the following data and information from 25 jurisdictions and the euro area:

(i) Flow of Funds data as of end-2011[11] based on the template used for the 2011 monitoring exercise and recommended in the October 2011 report (Annex 1);

(ii) A short analysis of national trends in shadow banking; and

(iii) Additional data and qualitative information on "finance companies" based on a survey questionnaire.

In addition, on a voluntary basis, several jurisdictions provided case studies on specific entities or activities involved in non-bank financial intermediation in their jurisdictions.[12]

Flow of Funds data are a useful source of information in mapping the scale and trends of non-bank credit intermediation. They provide generally high quality, consistent data on the bank and non-bank financial sectors' assets and liabilities, and are available in most jurisdictions, though there is room for improvement.[13] The components related to the non-bank financial sector, and especially the "Other Financial Intermediaries (OFIs)" sector (which typically includes NBFIs that cannot be categorised as insurance corporations or pension funds or public sector financial entities), can be used to obtain a conservative proxy of the size of the shadow banking system[14] and its evolution over time.

In order to cast the net wide, the macro-mapping needs to be conservative in nature, looking at all non-bank financial intermediation so as to cover all areas where shadow banking-related risks might potentially arise (for example through adaptation and mutations). This would alert the authorities to areas where adaptations and mutations could lead to points of risk in the system. Authorities could then conduct more detailed monitoring for policy purposes, with an eye towards identifying the subset of non-bank financial intermediation where there are (i) developments that increase systemic risk (in particular maturity/liquidity transformation,

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[11] For Switzerland, end-2010 data were used for Other Financial Intermediaries.

[12] Australia, France, India, Korea, Mexico, the Netherlands, the UK and the US submitted case studies on a voluntary basis. These were discussed at the AGV meeting on 17-18 July.

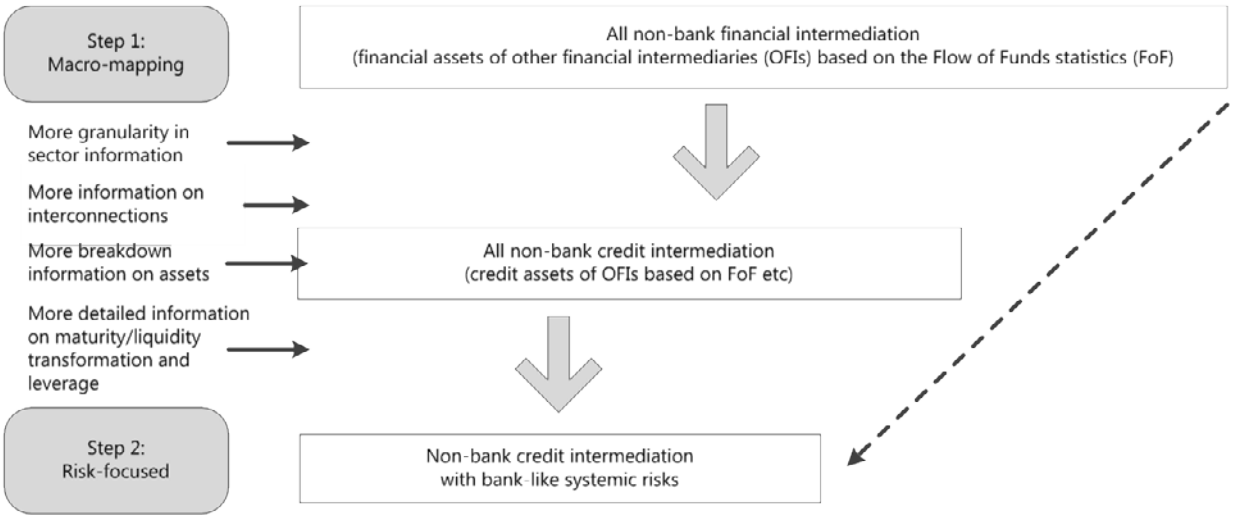
[13] Some jurisdictions still lack Flow of Funds statistics, and have to use other data sources which may be less consistent. Even when Flow of Funds data are available, their granularity and definitions differs across jurisdictions and have been adjusted as necessary. In the October 2011 report, the FSB recommended that member jurisdictions improve the granularity of the Flow of Funds data, and expects the quality of its annual monitoring exercise to increase as a result of improvements in Flow of Funds statistics. This will also be supported by the international initiative to improve the Flow of Funds data under the IMF/FSB Data Gaps initiative based on recommendation 15 in the report by the IMF/FSB to the G20 on *The financial crisis and information gaps*, November 2009.

[14] For example, see Pozsar et al. (2010) *Shadow Banking*, FRBNY Staff Reports, July, Bakk-Simon et al. (2012) *Shadow Banking in the Euro Area: An Overview*, ECB Occasional Paper Series, April, and Deloitte Centre for Financial Services (2012) *The Deloitte Shadow Banking Index: Shedding light on banking's shadows.*

imperfect credit risk transfer and/or leverage), and/or (ii) indications of regulatory arbitrage that is undermining the benefits of financial regulation (Exhibit 1-1).

Measuring the shadow banking system

Simplified conceptual image — Exhibit 1-1



2. Overview of macro-mapping results

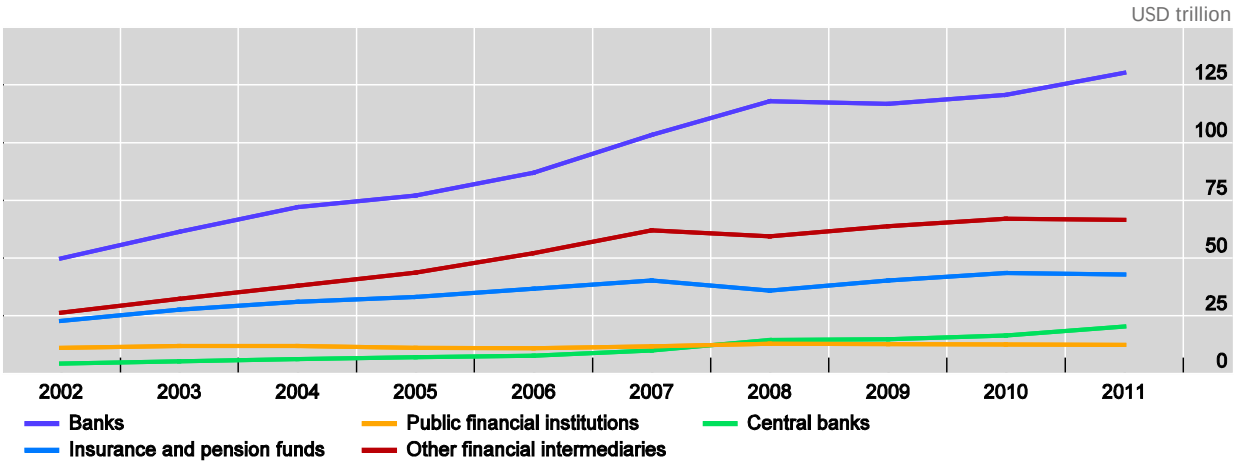
The main results of the 2012 exercise at macro-mapping the shadow banking system can be briefly summarised as below:

- Aggregating Flow of Funds data from 20 jurisdictions (Argentina, Australia, Brazil, Canada, Chile, China, Hong Kong, India, Indonesia, Japan, Korea, Mexico, Russia, Saudi Arabia, Singapore, South Africa, Switzerland, Turkey, UK and the US) and the euro area data from the European Central Bank (ECB), **assets in the shadow banking system in a broad sense** (or NBFIs, as conservatively proxied by financial assets of OFIs[15]) **grew rapidly before the crisis, rising from $26 trillion in 2002 to $62 trillion in 2007**. The total declined slightly to $59 trillion in 2008 but increased subsequently to reach **$67 trillion in 2011** (Exhibit 2-1).
- Expanding the coverage of the monitoring exercise has increased the global estimate for the size of the shadow banking system by some $5 to 6 trillion in aggregate, bringing the 2011 estimate from $60 trillion with last year's narrow coverage to $67 trillion with this year's broader coverage. The newly included jurisdictions contributing most to this increase were Switzerland ($1.3 trillion), Hong Kong ($1.3 trillion), Brazil ($1.0 trillion) and China ($0.4 trillion).

[15] OFIs comprise of all financial institutions that are not classified as banks, insurance companies, pension funds, public financial institutions, or central banks.

Total assets of financial intermediaries

20 jurisdictions and euro area — Exhibit 2-1

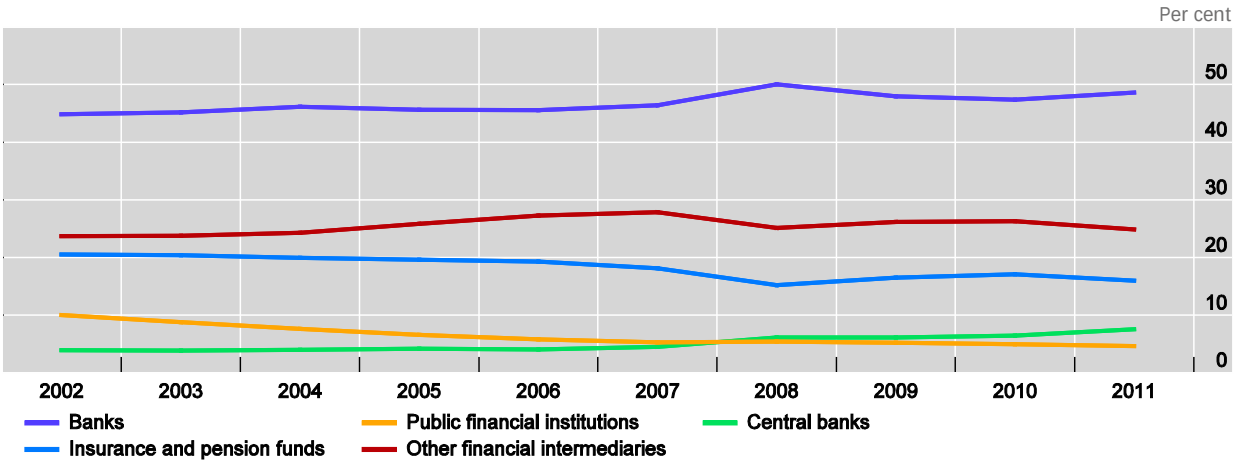


Source: National flow of funds data.

- The shadow banking system's share of total financial intermediation has decreased since the onset of the crisis and has been recently stable at a level around 25% of the total financial system (Exhibit 2-2), after having peaked at 27% in 2007. In aggregate, the size of the shadow banking system in a broad sense is around half the size of banking system assets.

Share of total financial assets

20 jurisdictions and euro area — Exhibit 2-2

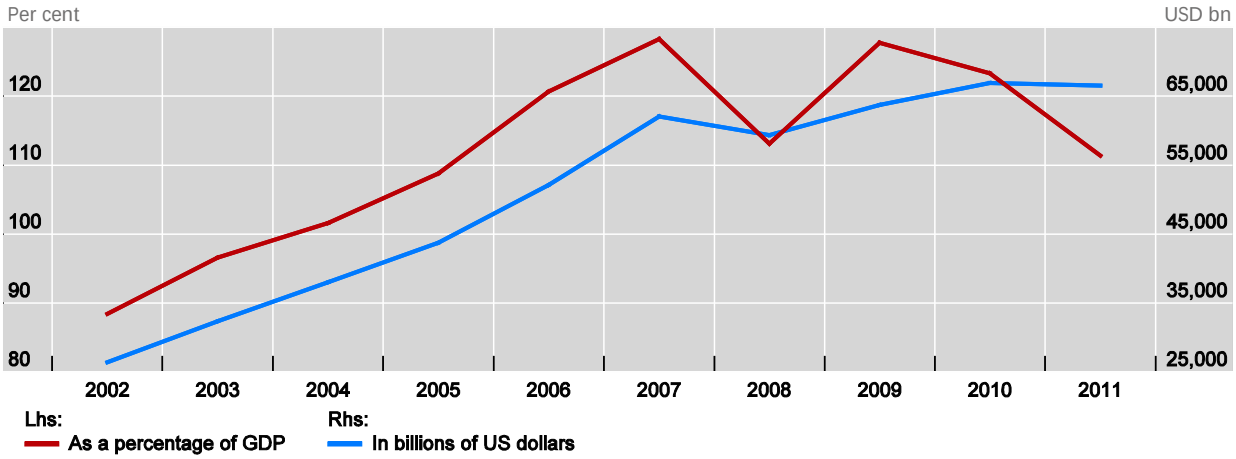


Source: National flow of funds data.

- **The size of the shadow banking system (or NBFIs), as conservatively proxied by assets of OFIs, was equivalent to 111% of GDP in aggregate for 20 jurisdictions and the euro area at end-2011 (Exhibit 2-3),** after having peaked at 128% of GDP in 2007.

Assets of non-bank financial intermediaries

20 jurisdictions and the euro area Exhibit 2-3

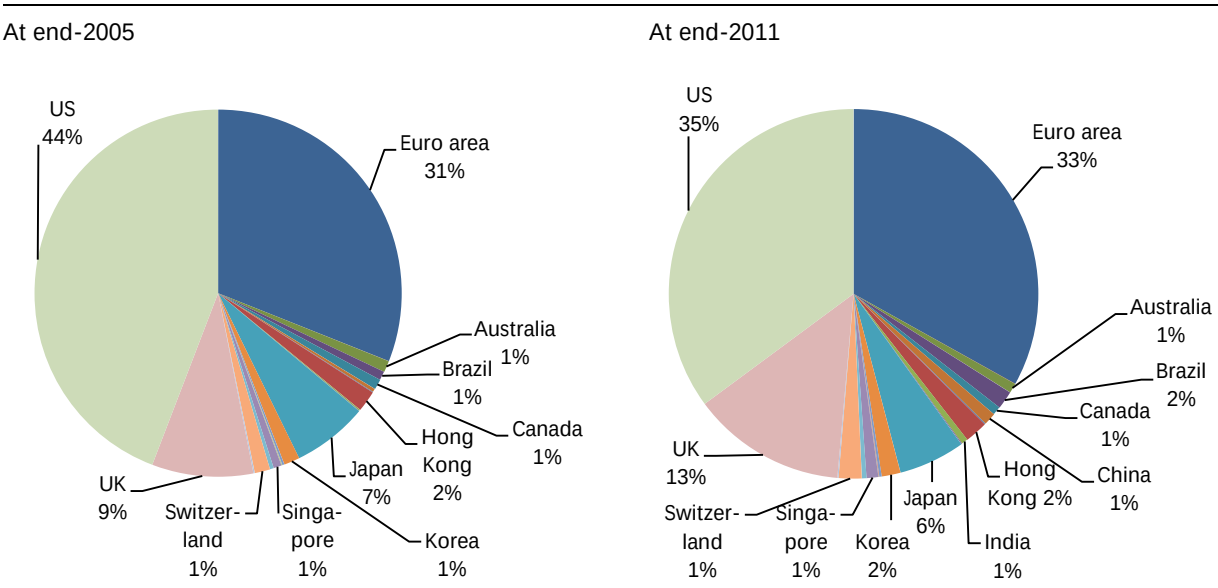


Source: National Flow of Funds data.

- **The US has the largest shadow banking system, with assets of $23 trillion in 2011** on this proxy measure, followed by the euro area ($22 trillion) and the UK ($9 trillion). **However, its share of the total shadow banking system for 20 jurisdictions and the euro area has declined** from 44% in 2005 to 35% in 2011 (Exhibit 2-4).[16] The decline of the US share has been mirrored by an increase in the shares of the UK and the euro area.

Share of assets of non-bank financial intermediaries

20 jurisdictions and euro area Exhibit 2-4



Source: National flow of funds data.

[16] Changes in the national shares may also reflect shifts in exchange rates and changes in accounting treatments.

These aggregates count as a *conservative* estimate of the size of the shadow banking system, across a number of dimensions. Firstly, the category "other financial intermediaries" may include entities that are not engaged in credit intermediation. The range of entities included in this category can vary from one jurisdiction to another. Secondly, "financial assets" include non-credit instruments that may constitute part of the long credit intermediation "chain". Third, in some cases total assets are used rather than financial assets, because of data limitations.

The remainder of this report examines the composition and growth of the shadow banking system in more detail.

- Section 3 offers a more detailed cross-jurisdiction analysis of the size of the shadow banking system, and growth trends since the onset of the crisis. It shows **a considerable divergence among jurisdictions in terms of: (i) the importance of NBFIs in the overall financial system (% share within the financial system); (ii) size relative to real economy (GDP); and (iii) growth trends, especially after the crisis.**

  Jurisdictions where NBFIs are large relative to the financial system and have experienced robust growth since 2007 may deserve more in-depth investigation (e.g. the UK). For emerging market and developing economies where the NBFI sector is growing at a strong pace but remains small overall, the challenge consists in striking an appropriate balance between the need for increasing financial inclusion and broadening access to finance, including through NBFIs, and the importance of preserving financial stability.

- Section 4 provides a detailed analysis of the components of the shadow banking system, as conservatively proxied by OFIs, and growth trends since the onset of the crisis. Investment funds other than MMFs seem to constitute the largest share (35% of OFIs in 2011), followed by structured finance vehicles (10%). **The size of all sub-sectors of OFIs is, on aggregate, either stable or declining since 2007,** with the largest declines affecting MMFs and structured finance vehicles.

- Thanks to improvements in the granularity of data provided by certain countries, the share of the unidentified component ("others") within the OFI sector has been reduced from 36% last year (with data from 11 jurisdictions) to 18% this year (with data for 25 jurisdictions) and 33% (with data for 20 jurisdictions and the euro area). However, since other jurisdictions with a large shadow banking system (e.g. the euro area and the UK) lack granular data for NBFIs, further improvement in the Flow of Funds statistics or adjustments by other data sources is essential to obtain a better picture of this sector.

- Systemic risks stemming from interconnectedness between banks and shadow banking entities are examined in Section 5. Among the various measures to capture such risks, (i) direct credit exposures and (ii) funding dependence across sectors are assessed based on data submitted from some jurisdictions. A cross-jurisdiction comparison of jurisdictions where data is available shows that there is wide variation in the degree of interconnectedness between the two sectors in different financial systems. However, in most jurisdictions, interconnectedness risk tends to be higher for shadow banking entities than for banks. Shadow banking entities seem to be more

dependent on bank funding and are more heavily invested in bank assets, than vice versa. This assessment may be improved with wider data coverage, more granular data, and supplementing the assessment by additional information, for instance sourced from prudential regulators.

- Finally, a brief summary of responses to the additional survey questionnaire on finance companies is set out in Section 6. The responses from 25 participating jurisdictions suggest the existence of a wide range of businesses covered under the category "finance companies", a term that broadly refers to non-banks that provide loans to other entities. While the composition of this sector varies across jurisdictions, the responses underlined the importance of finance companies in providing credit to the real economy especially to fill credit voids that are not covered by other financial institutions. A few jurisdictions have also emphasised the need to enhance monitoring of the sector as finance companies may be liable to specific risk factors and/or regulatory arbitrage. However, since the size of the sector is limited, participating jurisdictions do not see significant risks at present from a systemic point of view.

3. Cross-jurisdiction analysis

Flow of Funds data allow for cross-jurisdiction comparisons of the structure of financial systems and of the importance and growth of NBFIs as conservatively proxied by OFIs (see template in Annex 1).

3.1 Structure of financial systems

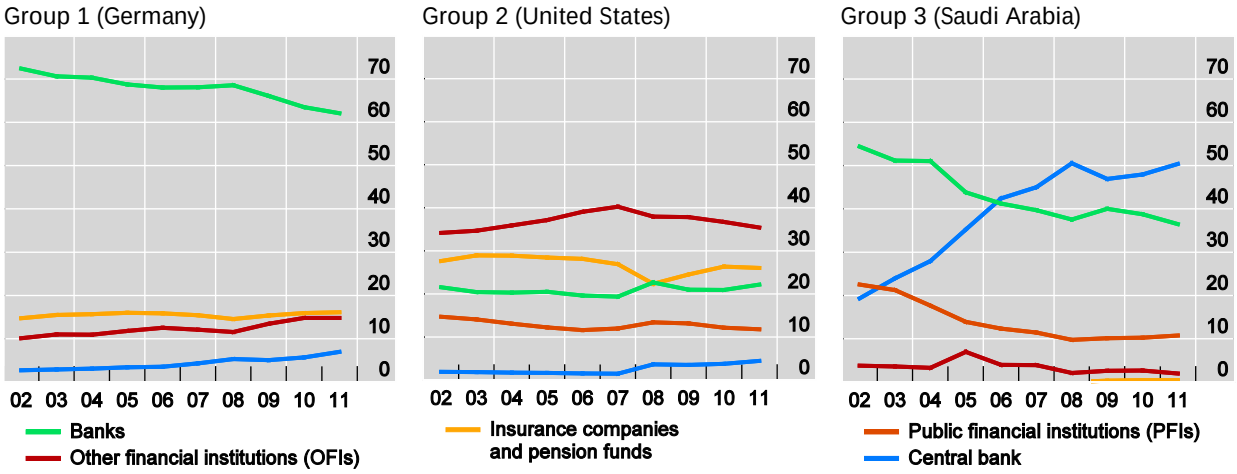
Three main groups of jurisdictions emerge when analysing the structure of financial systems based on the share of banks, insurance companies and pension funds, other NBFIs/OFIs, public financial institutions and central banks in the total (see Annex 2 and Exhibit 3-1):

- A first group includes advanced economies characterised by a dominant share of banks combined with a limited share of OFIs that does not exceed 20%. Jurisdictions such as Australia, Canada, France, Germany, Japan, Spain fall in this category.
- A second group includes economies where the share of OFIs is above 20% of the total financial system and relatively similar, or higher, to that of banks. For instance, the Netherlands, the UK, the US, fall in this category.
- A third group includes emerging market and developing economies where the share of public financial institutions or the central bank is significant, often on account of high foreign exchange reserves or sovereign wealth funds, and where the share of OFIs is relatively low. This group includes jurisdictions such as Argentina[17], China, Indonesia, Russia and Saudi Arabia.

[17] In Argentina, foreign currency deposits constituted by the banks pursuant to liquidity regulations are included in the assets of the Central Bank. These regulations require banks to make foreign currency deposits at the Central Bank in compliance with requirements associated with their own obligations denominated in foreign currency.

Three examples of different financial structures

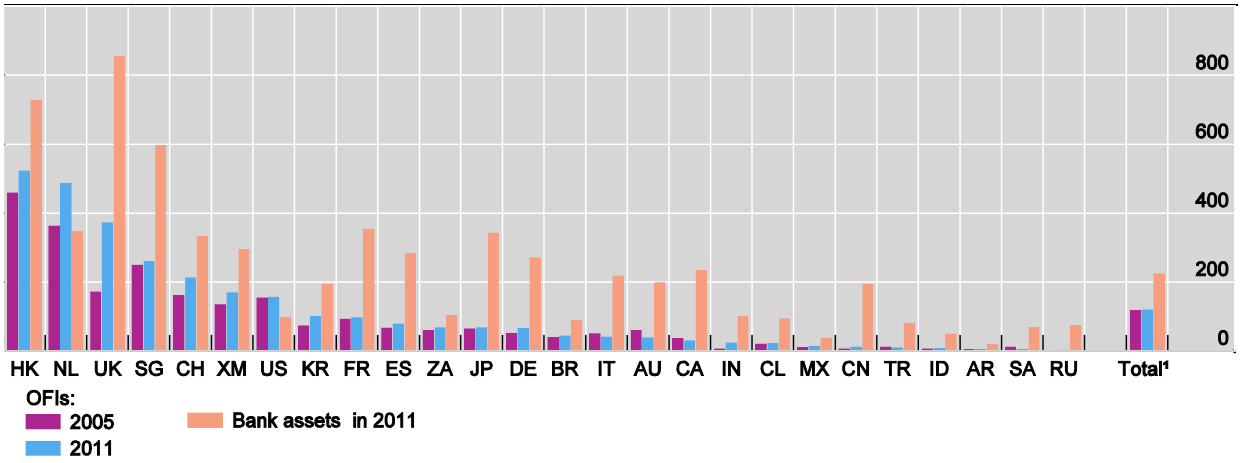
Share of total assets by jurisdiction, in per cent — Exhibit 3-1



Source: National flow of funds data.

Size of other financial intermediaries

As a percentage of GDP, by jurisdiction — Exhibit 3-2



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CL = Chile; CN = China; DE = Germany; ES = Spain; FR = France; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; UK = United Kingdom; US = United States; XM = Euro area; ZA = South Africa.

[1] 20 jurisdictions and euro area.

Sources: National flow of funds data; IMF.

Globally, the shadow banking system, as conservatively proxied by OFIs, represents on average 25% of financial system assets and 111% of the aggregated GDP, for the sample of 20 participating jurisdictions and the euro area. As shown in Exhibit 3-2, these aggregate numbers mask wide disparities between jurisdictions. Five jurisdictions (Hong Kong, the Netherlands, the UK, Singapore and Switzerland) are characterised by a large size of NBFIs relative to GDP, which is partly attributable to the fact that these countries also have large

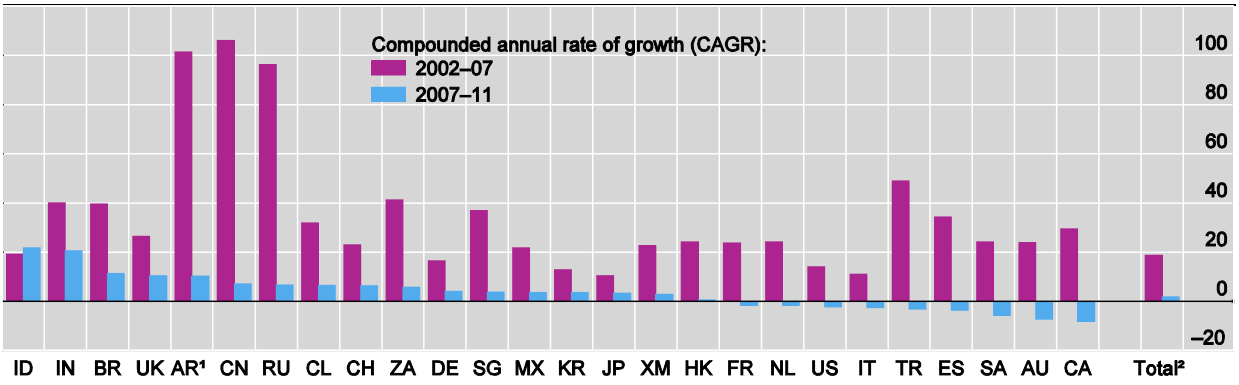
banking systems relative to GDP. Part of this concentration is attributable to these jurisdictions' role as financial centres or host to financial activities carried out by foreign-owned institutions[18].

3.2 Growth trends of non-bank financial intermediaries across jurisdictions

Before the crisis, the shadow banking system had registered very high rates of growth across all jurisdictions (Exhibit 3-3). In this period characterised by low interest rates and a general under-pricing of risk, the increase in leverage in the banking and shadow banking systems, combined with excessive levels of maturity and liquidity transformation in both systems, precipitated the collapse in financial intermediation.

Average annual growth of OFI sector pre- and post-crisis

By jurisdiction, in per cent — Exhibit 3-3



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CL = Chile; CN = China; DE = Germany; ES = Spain; FR = France; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; UK = United Kingdom; US = United States; XM = Euro area; ZA = South Africa.

[1] The unusually high growth rate over the period 2002–2007 for Argentina (101% per year) reflects the strong recovery after the very deep financial crisis that affected the Argentine economy in 2001–2002, and is therefore not comparable with other countries. Besides this, the aforementioned variation is affected by the inclusion of intermediaries with incomplete information for the entire reference period. Considering only those intermediaries, among OFIs, with complete information for the entire 2002–2007 period, the average annual change goes down from 101% to 67%. [2] 20 jurisdictions plus euro area.

Source: National flow of funds data.

Post-crisis, the growth of the shadow banking system decelerated significantly in all jurisdictions (Exhibit 3-3). Nine jurisdictions (Australia, Canada[19], France, Italy, the Netherlands, Saudi Arabia, Spain, Turkey, the US) out of twenty five experienced declines of their NBFIs for the period 2007-2011, albeit at moderate pace. In particular, securitisation markets remained impaired in most regions and segments, and MMFs suffered from the prolonged period of very low interest rates which put their business model at risk.

[18] Flow of funds statistics are on an entity/solo basis and are not based on prudential consolidation rules. Therefore, local subsidiaries of foreign financial institutions are considered as domestic institutions. On the other hand, foreign subsidiaries of domestic financial institutions are considered as foreign institutions.

[19] Canada's post-crisis contraction in OFIs is mainly driven by SPVs coming back on the bank's balance sheets in accordance with IFRS adoption in 2011.

Out of the seventeen jurisdictions whose NBFI sector continued to grow, half of them were emerging economies where financial deepening is a significant structural driver of change in the financial system. India[20] and Indonesia stand out with annual growth rates of above 20% since 2007 which may require closer monitoring.

Two advanced economies experienced relatively robust rates of growth of their NBFIs since 2007: the UK (10% a year) and to a lesser extent Switzerland (6%).[21] In the UK, a significant part of this growth is associated with an increase in derivative assets of NBFIs, which is matched by a commensurate increase in derivative liabilities, and is in line with trends in the gross market value of global OTC derivatives[22] and London's large share of this market. Further work would be needed to understand why similar increases were not recorded in other jurisdictions active in derivative dealing and the potential role of different accounting regimes.

4. Composition of non-bank financial intermediaries

An important step in assessing the importance and the trends in the shadow banking sector is to more precisely identify the sub-components of the NBFI/OFI sector and their degree of risk. As data from the five largest euro area jurisdictions is more granular than aggregate data at the euro area level, the analysis in this section is, contrary to the rest of the report, mostly based on data for 25 jurisdictions, instead of 20 jurisdictions and the euro area, in order to provide more precise breakdowns and trends.

4.1 Breakdown by sub-sectors of NBFIs at end-2011

The OFI sector can be split into nine sub-sectors[23] of varying importance (Exhibit 4-1 left-hand panel):

- The largest sub-sector, representing $19 trillion and 35% of assets of NBFIs in 2011, is that of "other investment funds", i.e. funds other than MMFs. This sub-sector is very diverse in its risk characteristics and includes equity funds, bond funds of varying degrees of credit risk, mixed funds as well as Exchange-Traded Funds (ETFs). It may also include hedge funds in some jurisdictions if they cannot separate data on hedge funds from other investment funds. The lack of granularity of flow of funds statistics across jurisdictions does not allow for a further decomposition, but a crossing with data from other sources such as the Investment Company Institute (ICI) provides an approximation (Exhibit 4-1 right hand panel).

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[20] In India, part of the growth is explained by an increase in the number of reporting financial companies. The regulatory framework requires all non-deposit taking companies with an asset base of US$ 10 million and above to submit monthly returns (in addition to requiring all deposit taking companies to submit returns). Given the prevailing inflation rate in the country, the number of companies reporting data to the Reserve Bank of India has increased mechanistically over time.

[21] For Switzerland, the relatively high growth in dollar terms has to be balanced against the appreciation of the Swiss Franc over the period. The annual growth rate in local currency since 2007 is only 2%.

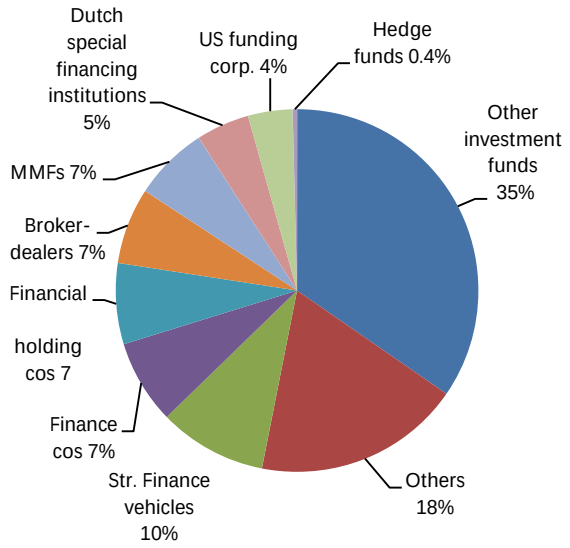
[22] For more details, see BIS semi-annual OTC derivatives statistics: http://www.bis.org/statistics/derstats.htm

[23] The sub-sectors analysed below have been defined in last year's exercise and used in the template (see annex 1). Further improvements in data granularity would allow for a more precise sub-sector analysis in the future.

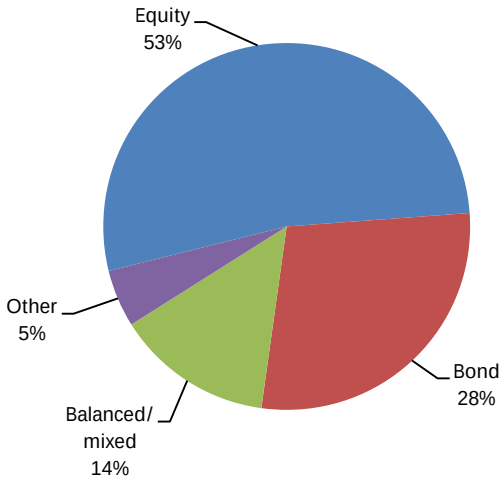
Sub-sectors of non-bank financial intermediaries (OFIs)

25 jurisdictions; at end-2011 Exhibit 4-1

Decomposition by sub-sector



Other investment funds by type from ICI statistics[1]



[1] Sample: 25 jurisdictions minus Indonesia, Saudi Arabia, Hong Kong, Singapore, for which data is not available.

Sources: National Flow of Funds data; Investment Company Institute (ICI).

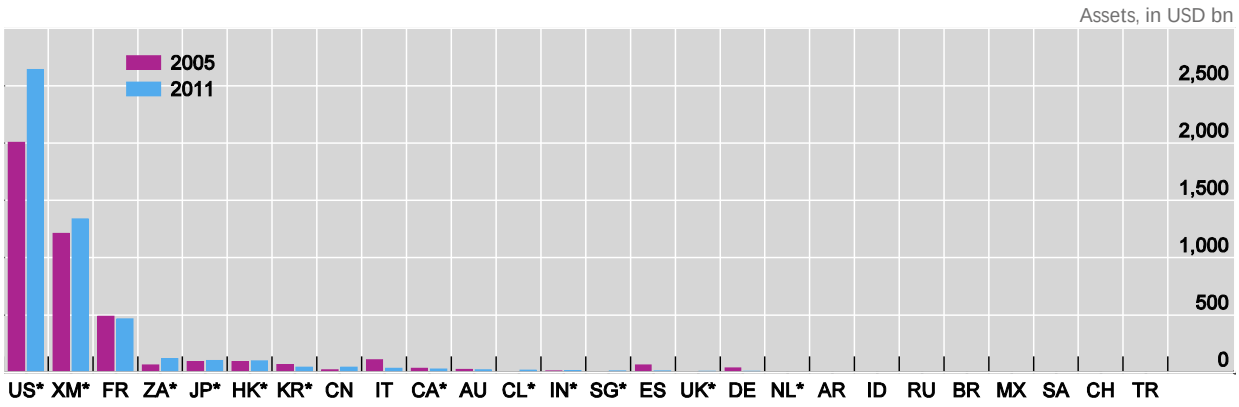
- Non-equity funds[24], which may include funds involved in credit intermediation and operating with some degree of maturity and/or liquidity transformation, would broadly correspond to $9 trillion using ICI estimates. While providing a useful order of magnitude, this number should be taken with some caution as there are differences in coverage and measurement between Flow of Funds and ICI statistics. Further improvement in the Flow of Funds statistics to separate the different type of investment funds is essential.
- Structured finance vehicles are the second largest identified sub-sector with $5 trillion of assets corresponding to 10% of NBFIs. It includes securitization vehicles, which are created for the purpose of warehousing assets and issuing securities backed by these assets. Given the differences in accounting and statistical methodologies across jurisdictions, this may include vehicles that are owned by banks and consolidated in bank's balance sheet from a prudential perspective, including "self-securitisations"[25] that are created for the purpose of using the related securities as collateral in central bank liquidity operations. Further work would be needed to determine more precisely how much of this sub-sector remains outside of the regulatory perimeter from a prudential perspective.

[24] Equity funds may not fall under the FSB definition of the shadow banking system, i.e. "credit intermediation (fully or partially) outside the regular banking system". However, they may constitute part of a credit intermediation chain and may engage in innovations that might not be detected so easily through statistical data. Thus, macro-mapping requires authorities to monitor such entities/activities.

[25] Also known as "retained securitisations"

- Broker-dealers, finance companies, financial holding companies and MMFs are roughly of equal size, each representing 7% of total NBFIs and around $4 trillion in assets. The broker-dealer sector is essentially concentrated in the US (52%) and Japan (42%), which also reflects the fact that other jurisdictions with large financial sectors (e.g. the euro area, the UK) do not single out broker-dealers in their Flow of Funds statistics. Finance companies are also concentrated in US (43%), Japan (18%) and China (11%). They are covered in more details in section 6 of the report. MMFs are mainly concentrated in the US and the euro area, which together represent 90% of MMFs globally (Exhibit 4-2). Within the euro area, a large part of the outstanding amounts for the region originate from France and from non-FSB member jurisdictions (e.g. Ireland and Luxembourg).

MMFs outstanding amount by residency — Exhibit 4-2



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CL = Chile; CN = China; DE = Germany; ES = Spain; FR = France; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; UK = United Kingdom; US = United States; XM = Euro area; ZA = South Africa.

Jurisdictions with a '*' offer constant NAV MMFs, which deserve a careful monitoring. However, constant NAV MMFs may not always represent the majority of MMFs in these jurisdictions.

Source: National Flow of Funds data.

- The rest of the OFI sector is represented by jurisdiction-specific entities such as Dutch Special Financial Institutions (SFIs) and US Funding corporations[26], each at 4%-5% of total OFIs, and hedge funds (0.4%). Dutch SFIs are the subject of a separate case study included in this report. At 0.4% of OFIs, the share of hedge funds is likely to be significantly underestimated. This is due to several factors, including the residency of hedge funds in off-shore jurisdictions not covered in the FSB exercise , and the lack of granularity of UK and US flow of fund statistics that do not track them due to lack of data[27]. Surveys such as the one by the UK FSA as well as

[26] US Funding corporations include (1) Subsidiaries of foreign bank and nonbank financial firms that raise funds in the U.S. commercial paper market; (2) Certain financial holding companies, (3) Custodial accounts established to hold cash collateral put up in securities lending transactions; and (3) a number of limited liability companies put in place during the crisis to stabilize the financial system, such as Maiden Lane LLC.

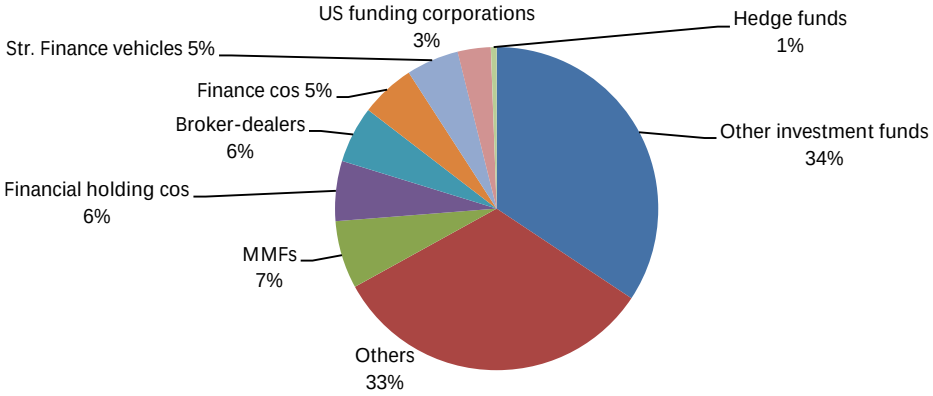
[27] US Flow of funds record domestic hedge funds as part of the households and non-for-profit organizations sector. This is because the values for the household sector are calculated as residuals of amounts held by the other sectors, so that entities for which there is no data source, such as domestic hedge funds, private equity funds, and personal trusts are included in this sector. For more details, see http://www.federalreserve.gov/apps/fof/TableDesc.aspx?t=L.100

estimates from industry databases constitute at the moment a more reliable tool for monitoring this sector than the macro-mapping exercise.[28] According to Hedge Fund Research (HFR) data, hedge funds held globally more than $2 trillions of Assets Under Management in Q1 2012. This represents 14% more than the 2007 peak and 50% more than the 2008 deleveraging-trough.

- The share of the unaccounted residual component ("others"[29]) within the overall NBFI sector has been reduced to 18% with the expanded set of data on 25 jurisdictions, significantly down from the 36% level observed in the October 2011 Shadow Banking report with 11 jurisdictions, thanks to the improvements in the granularity of certain jurisdictions' statistics. However, the still sizeable portion of "others" mostly reflects the relative lack of granularity of some jurisdictions' flow of funds (e.g. euro area wide flow of funds, the UK).

Sub-sectors of non-bank financial intermediaries (OFIs)

20 jurisdictions and the euro area, data at end-2011 Exhibit 4-3



Source: National Flow of Funds data.

4.2 Recent trends in sub-sectors

Turning to the growth rate of sub-sectors globally over the past year, and taking as a sample 25 jurisdictions, structured finance vehicles and MMFs contracted by 12% and 5% respectively. The other sub-sectors were broadly stable (Exhibit 4-4). The trends in 2011 appear to be a continuation of the stagnating or declining patterns observed since the crisis in an environment of elevated risk aversion and muted financial innovation.

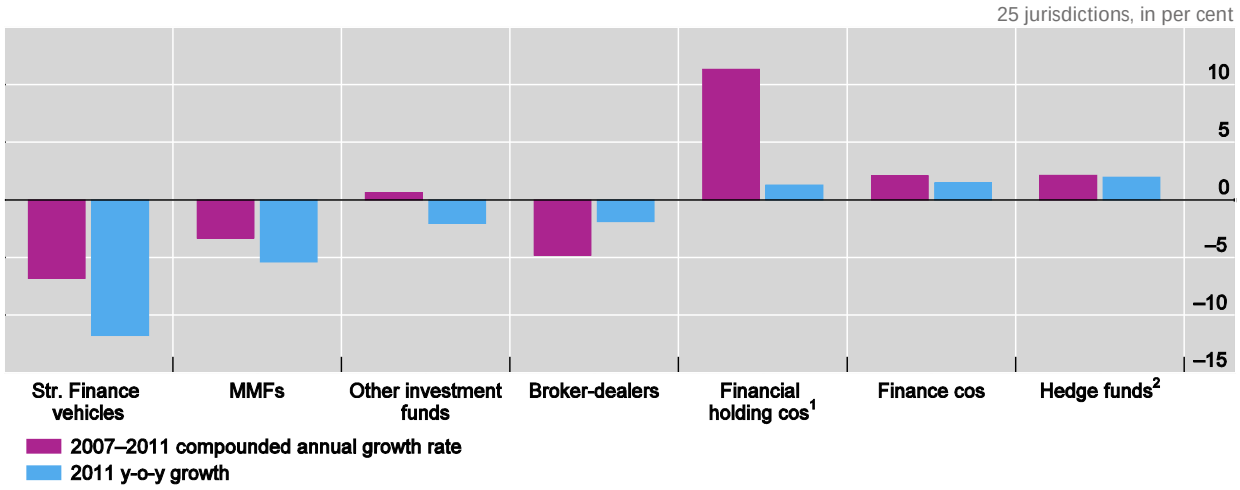
However, this picture masks considerable differences across jurisdictions in the growth of the different sub-sectors. A simple way to illustrate this dispersion is to look at the jurisdictions

[28] IOSCO will conduct its second hedge fund survey (as of end-September 2012) with wider coverage whose results will become available in 2013.

[29] The category "Others" include other financial intermediaries (OFIs) that could not be precisely identified for statistical reasons and therefore could not be classified in the other nine sub-sectors. While some jurisdictions were able to precisely map their OFI sector to the nine sub-sectors defined in last year's exercise, others lacked the necessary granularity to do so, and therefore mentioned the part of OFIs that could not be classified as "others".

for which some sub-sectors experienced an annual average growth rate of more than 10% in the post-crisis period of 2007-2011 (Exhibit 4-5). This method entails some judgement regarding the level of the significance threshold and may also capture strong increases from a very low base that do not constitute immediate risk.

Annual growth of sub-sectors of Other Financial Intermediaries (OFIs) Exhibit 4-4



[1] The strong increase for Financial holding companies in 2007–2011 reflects the conversion of large US financial institutions (eg Goldman Sachs, Morgan Stanley) to bank holding companies, while they had not previously been included in flow of funds. [2] For hedge funds, flow of funds are an incomplete data source (see section 4.1) and growth rates shown above may not reflect industry-wide trends.

Source: National Flow of Funds data.

Notwithstanding the caveats of this approach, it shows that certain emerging markets (Argentina, Brazil, China, Indonesia, Korea) have experienced strong growth in several non-bank sub-sectors since 2007, which could be partly explained by financial deepening.

Other more specific areas of strong growth, often from a low base, include investment funds in Canada, finance companies in Hong Kong and India, and MMFs in Russia.

Jurisdiction/sub-sector with high growth over the period 2007–2011 Exhibit 4-5

	MMFs	Finance companies	Str. Finance vehicles	Other investment funds	Broker-dealers	Financial holding cos
Argentina	11%		18%			
Brazil		21%		11%		
Canada				24%		
China	33%	33%				
Hong Kong		12%				
India		25%				
Indonesia		24%	59%			
Korea					13%	18%
Russia	28%					

High growth is defined as Compounded Annual Growth Rate (CAGR) of more than 10% over the period 2007-2011.

Strong increases due to re-classifications and breaks in the series have been excluded. These relate to investment funds in the Netherlands (where assets have been reclassified from pension funds to investment funds in 2009), and Financial holding companies in the US (where financial institutions outside the Flow of fund perimeter have been converted to bank holding companies in 2009).

5. Interconnectedness between banks and shadow banking entities (non-bank financial intermediaries)

5.1 Analysing interconnectedness between banks and shadow banking entities

Systemic risks can arise not only from shadow banking entities but also from interconnectedness between banks and shadow banking entities (or NBFIs). Banks and shadow banking entities are highly interlinked, with banks often being part of the shadow banking credit intermediation chain or providing (explicit or implicit) support (e.g. guarantees) to the shadow banking entities to enable cheap financing and maturity/liquidity transformation. Furthermore, banks and shadow banking entities provide funds to each other through loans and investment in financial products. Finally, banks may be owners of shadow banking entities such as finance companies or broker-dealers.

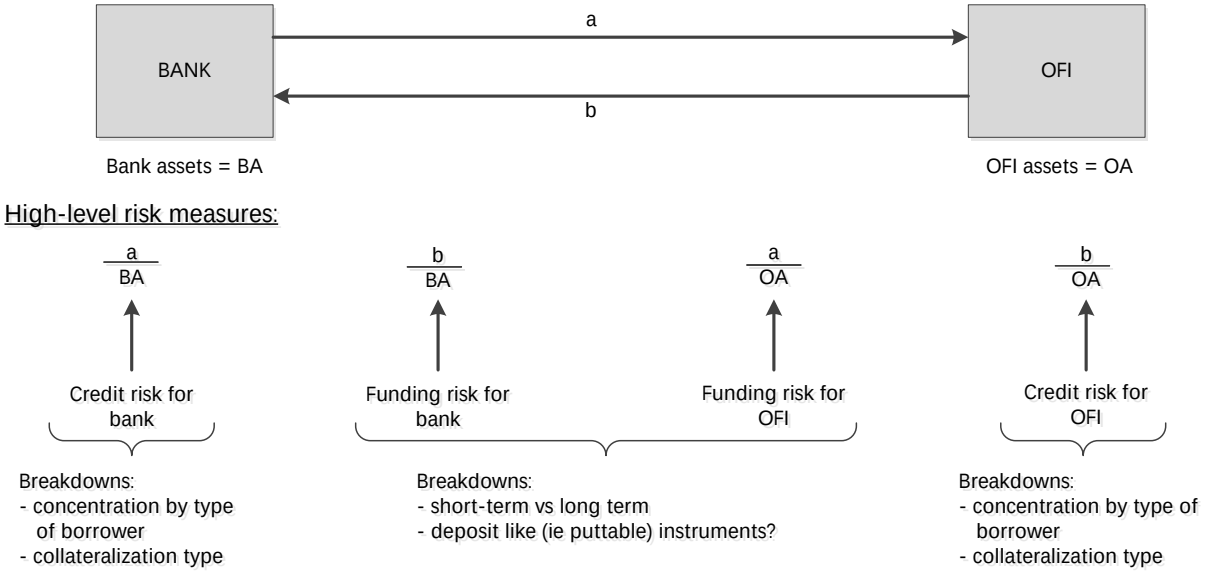
This interconnectedness between the two systems can create systemic risks as distress in a shadow banking entity (or a bank) may easily spill over to a bank (or a shadow banking entity). Also, such interconnectedness may exacerbate the pro-cyclical build-up of leverage and thus heighten the risks of asset price bubbles, especially when entities in both systems invest in the same (or correlated) assets. Systemic risks can also build up when banks and shadow banking entities have common exposures to certain sectors or financial instruments. Moreover, interconnectedness can amplify market reactions when market liquidity is scarce in the financial markets – indeed such reactions can themselves intensify the loss of liquidity. Banks are thus likely to be significantly affected by developments in the shadow banking system and vice versa.

There are a number of useful measures to capture potential risks stemming from the interconnectedness between banks and shadow banking entities. Two such measures are direct credit exposures and funding dependence on each other.[30] Conceptually, both banks and shadow banking entities pose credit and funding risks to each other that depend on the size and maturity structures of their assets and liabilities, concentration levels by sub-sector, and type of collateralisation (if any) of the lending instruments (Exhibit 5-1). Currently a breakdown by these categories is not available in most of the participating jurisdictions, but some jurisdictions have data on an aggregated sector-to-sector basis between banks and shadow banking entities (or NBFIs) as conservatively proxied by OFIs. The rest of this section summarises high-level analysis of interconnectedness between the two sectors through looking at the two measures based on the data available.

[30] See Annex 4 for a brief discussion of other possible risk measures to assess interconnectedness risks.

A risk analysis framework of interconnectedness between banks and shadow banking entities

Exhibit 5-1



5.2 High-level analysis of interconnectedness

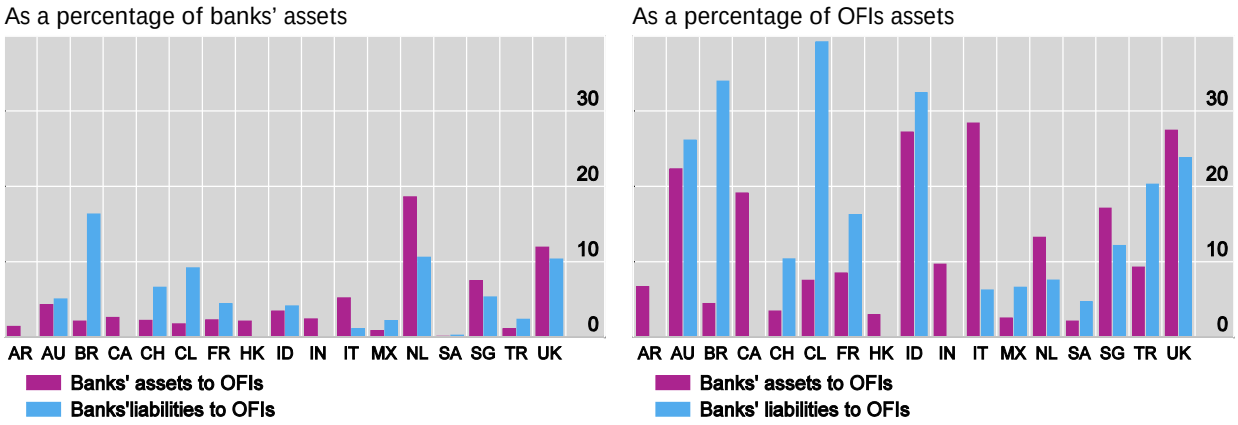
- A cross-jurisdiction comparison shows that there is wide variation in the degree of interconnectedness between banks and shadow banking entities or NBFIs in different financial systems (Exhibits 5-2 and 5-3). For instance, there are a few jurisdictions where banks' credit exposure to NBFIs is relatively large in terms of banks' balance sheet size: the Netherlands and the UK have ratios of banks' assets to NBFIs above 10% of banks' total assets. Interestingly, for these jurisdictions, banks' dependence on funding from NBFIs is also relatively large, thus creating an interdependence (bi-directional connection) via which stress could be rapidly transmitted across the two sectors. Note also that there are jurisdictions where banks depend disproportionately more on funding from NBFIs than vice versa (e.g. Brazil, Chile, and to a lesser extent Switzerland).
- The risk associated with interconnectedness between the two sectors is larger for NBFIs in relative terms than for banks in most jurisdictions, as revealed by the higher ratios shown in Exhibit 5-2 on the right-hand chart, compared to the left-hand chart. For instance, NBFIs' dependence on bank funding is large in Indonesia , the UK (each around 27% of NBFIs' assets), and Italy (28%). Other jurisdictions where NBFIs obtain substantial funding from banks (around 20% of NBFIs' assets) include Australia, Canada, and Singapore[31]. Regarding credit risk, in some jurisdictions NBFIs' assets are heavily concentrated in the banking sector: over 30% of assets are invested in banks in Brazil, Chile, and Indonesia. However, these measures of interconnectedness provide a first assessment of the potential risks that

[31] For Singapore, the figures of bank assets and liabilities to OFIs may be overestimated as these may also include bank assets and liabilities to non-bank entities that are not OFIs (e.g. insurance companies)

interconnection poses and are best used as a starting point for deciding if further analysis is warranted.

Banks' assets and liabilities to non-bank financial intermediaries

At end-2011 Exhibit 5-2



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CL = Chile; FR = France; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; MX = Mexico; NL = Netherlands; SA = Saudi Arabia; SG = Singapore; TR = Turkey; UK = United Kingdom..

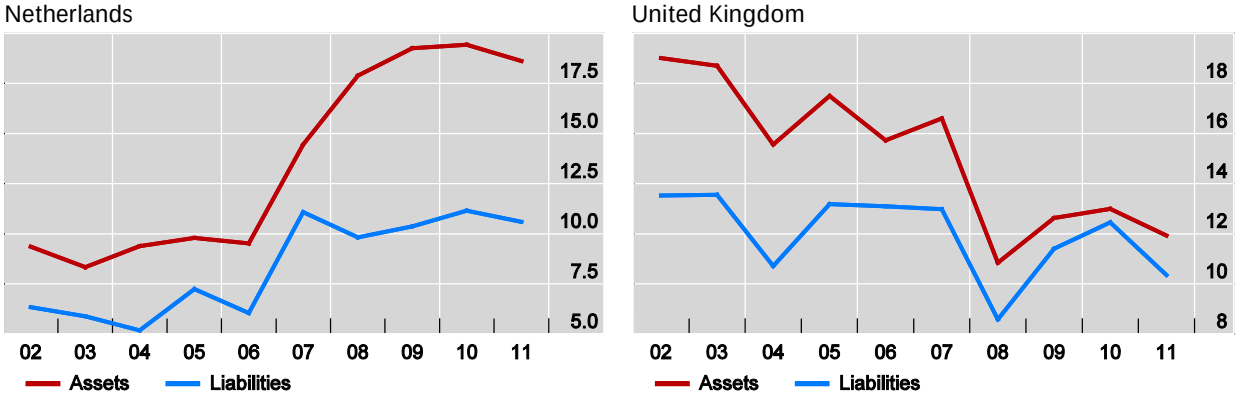
Note: Liabilities of banks to OFIs are not available for Argentina, Canada, Hong Kong and India. Countries with no data on assets and liabilities of banks to OFIs include China, Germany, Japan, Korea, Russia, South Africa, Spain and the United States.

Source: National Flow of Funds data.

- In terms of the recent evolution of interconnectedness between the two sectors, the monitoring exercise identified a few jurisdictions where interconnectedness between banks and NBFIs has changed substantially over the period 2006-2011 (Exhibit 5-3). Specifically the relative weight of banks' assets to NBFIs increased at a good pace in the Netherlands. On the other hand, the UK has witnessed a reduction in the level of funding that banks provide to NBFIs since 2002 (i.e., from 19% in 2002 to 12% in 2011), and to a lesser degree in the amount of funding that banks obtain from NBFIs (from around 14% in 2002 to around 10% in 2011).

Banks' assets and liabilities to non-bank financial intermediaries

As a percentage of banks' total assets Exhibit 5-3

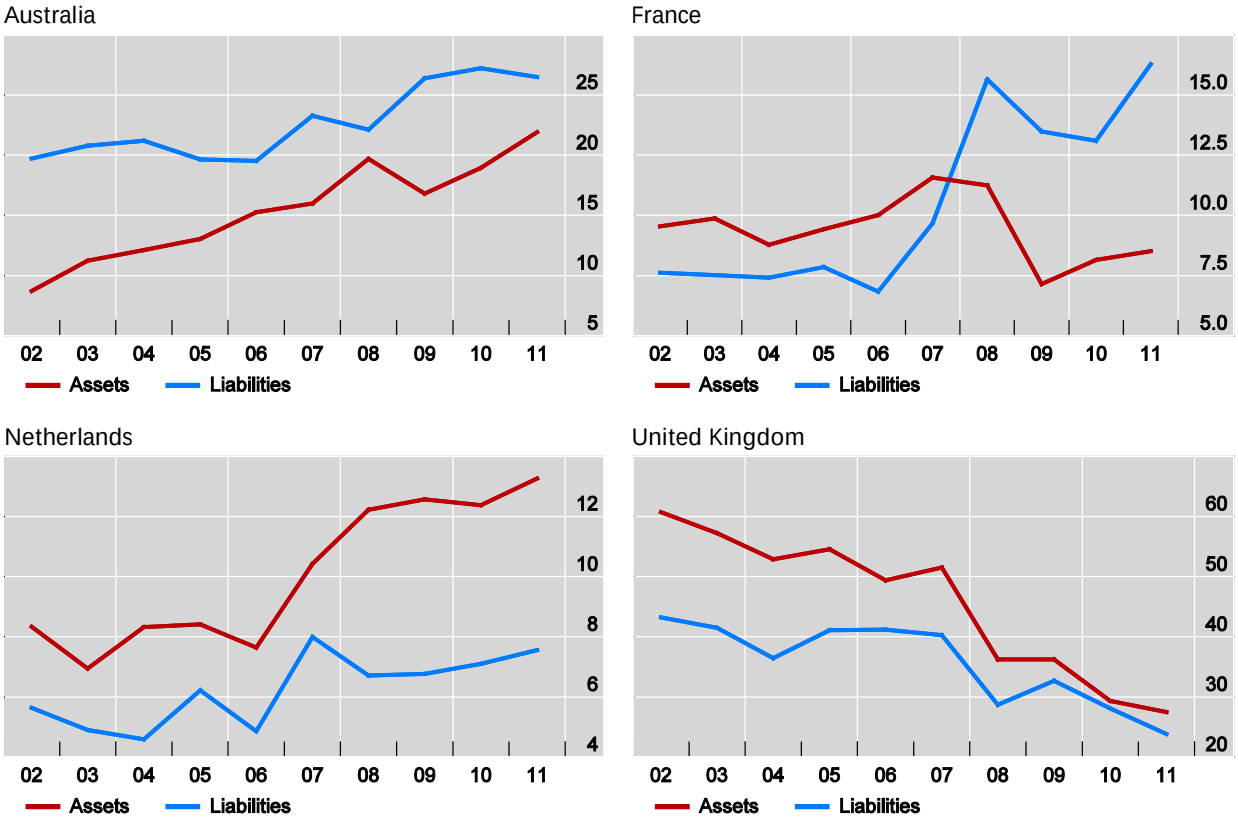


Source: National Flow of Funds data.

- From the perspective of NBFIs, there are also some noteworthy trends during the period 2002 to 2011. In Australia and the Netherlands, OFIs increased the funding they obtain from banks (Exhibit 5-4). On the other hand, the liabilities of banks to NBFIs (i.e., funding provided from OFIs to banks) increased in France. Conversely, in the UK, NBFIs have reduced the relative weight of their interconnectedness with banks. It would be useful to supplement analysis of such changes in interconnectedness so as to understand why the changes have occurred and what risks they might pose.

Banks' assets and liabilities to non-bank financial intermediaries

As a percentage of non-bank financial intermediaries' total assets — Exhibit 5-4



Source: National Flow of Funds data.

5.3 Data Issues for further enhancement of monitoring

A number of important data shortcomings were identified during the monitoring exercise. The resolution of these shortcomings would improve the analysis in the previous section and further enhance the monitoring of risks stemming from the interconnectedness between the banking and shadow banking sectors.

- *Data availability*: numerous jurisdictions, including those with large shadow banking systems, do not have a breakdown of the assets and liabilities of banks vis-à-vis NBFIs. Thus, it is essential for all jurisdictions to collect such data and at least

conduct high-level analysis. In addition, further breakdowns by maturity structure of assets and liabilities, concentration, and collateralization would help the analysis by obtaining a more precise assessment of risks.

- *Domestic consolidation issues*: several jurisdictions reported that there could be substantial differences between the figures used by prudential authorities (which typically consolidate all domestic and overseas bank-related entities) and national accounts (Flow of Funds) data (which are basically on a domestic solo entity-basis). These inconsistencies could lead to an overestimation of the share of the financial system that is beyond the scope of bank prudential regulation.[32] The potential size of these inconsistencies varies across jurisdictions. For instance, Canadian Flow of Funds data consolidates bank-owned SPVs into banks, whereas in most euro area jurisdictions SPVs are accounted for as NBFIs/OFIs in the Flow of Funds statistics. It should be noted that the existence of this potential overestimation does not necessarily equate to an overestimation of potential risks, as the non-traditional activities of banks need to be monitored carefully.
- *Cross-border consolidation issues*: consolidation issues may become more complicated when a non-bank financial intermediary has its parent bank in a different jurisdiction. In this case, home authorities of the parent bank have to ensure that the relevant information on the non-bank financial subsidiary abroad is obtained and incorporated into the consolidated risk analysis.

Going forward, an appropriate assessment of the potential risks derived from the interconnectedness between banks and non-bank financial intermediaries may also require more granular breakdowns of the maturity structure of the assets and liabilities of banks vis-à-vis non-bank financial intermediaries and vice versa.

[32] In other words, a given entity (e.g. an SPV) could be consolidated into the banking sector for prudential purposes while being treated as an OFI in Flow of Funds statistics. Thus, from a Flow of Funds perspective it may appear that the fraction of the financial system not regulated by bank prudential rules is larger than it actually is in reality.

6. Finance Companies - Overview of Survey Responses

In addition to the overall monitoring exercise, additional information on finance companies was collected from all 25 participating jurisdictions based on a survey questionnaire (Annex 3). The questionnaire comprised of eight questions covering three broad areas: (i) definition and types of finance companies across jurisdictions; (ii) regulatory regimes, policy tools and monitoring; and (iii) business models and potential risks. This section summarises the results of the responses received on the survey on finance companies.

6.1 Definition and types of finance companies

The definition and types of finance companies seem to vary across jurisdictions. However, most jurisdictions broadly define finance companies as "non-bank financial entities that provide loans to other entities". This definition covers a wide spectrum of business models that vary across and within countries.

Nevertheless, virtually all jurisdictions reported that finance companies include non-bank financial entities that are involved in leasing, factoring, consumer finance (e.g. credit card, automobile, and mortgage loans), as well as business finance. An additional definitional element in most jurisdictions is the prohibition for finance companies to raise deposits from the public, although there are few jurisdictions where certain types of finance companies are in fact allowed to accept deposits (e.g. India, Mexico, Singapore, and the UK).

6.2 Regulatory frameworks

Jurisdictions reported three main approaches to regulating finance companies: (i) in most jurisdictions finance companies must obtain a license from the business conduct bureau and comply with consumer protection rules (e.g. caps on the interest rate charged to consumers); (ii) some jurisdictions have additional investor protection regulations, as finance companies often raise funds in capital markets and via debt issuance; and (iii) a few jurisdictions have bank-like prudential regulations (typically, but not exclusively, those jurisdictions where finance companies are allowed to raise deposits).[33] Finance companies must also adhere to disclosure requirements intended to provide information to both consumers and investors.

Some jurisdictions also reported that there is sub-national regulation (e.g. provinces in Canada and states in the US) or sub-national supervision (e.g. prefectures in Japan) for finance companies.

There are also some non-regulated finance companies in several jurisdictions, such as certain types of mortgage lenders in Canada and business finance companies in the UK. As for consolidation within a banking group, there seems to be a wide range of practices.[34]

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[33] Most jurisdictions in the EU and Japan as well as Singapore apply some form of prudential regulation to their finance companies by virtue of the credit-extension or deposit-taking role that these companies play.

[34] The FSB shadow banking workstream on the regulation on banks' interactions with shadow banking entities (Workstream 1 or WS1) led by the Basel Committee on Banking Supervision (BCBS) is currently reviewing the effectiveness of prudential consolidation rules in capturing the relevant non-bank financial entities.

6.3 Policy tools and monitoring frameworks to address shadow banking risks

The 25 participating jurisdictions were also asked to briefly explain the policy tools available to address the systemic risks associated with the activities of finance companies (in particular, maturity transformation, liquidity transformation and leverage). Most jurisdictions do not have policy instruments that were specifically designed for dealing with such systemic risks. Instead, they tend to be dealt with by policy tools derived from the general regulatory regime applicable to finance companies in each jurisdiction. For example, consumer protection rules for finance companies will have an indirect effect in addressing systemic risks by imposing limits on certain activities (e.g. strict limits on related-party lending) and/or types of risks. Additionally, some jurisdictions also rely on prudential (and macroprudential) tools provided for banks.

In addition to the regulatory framework for finance companies, some jurisdictions have established a macroprudential framework to address build-up of systemic risks in this sector. For instance, in Australia, the Reserve Bank (RBA) conducts an annual monitoring exercise of shadow banking entities, including finance companies, and would highlight any risks to the Council of Financial Regulators for policy action by Council agencies, were that to be necessary; the Canadian government determines which mortgages qualify for government insurance, thus limiting the activities in securitisation markets; in the US, the Financial Stability Oversight Council (FSOC) can require the Federal Reserve to regulate specific finance companies when they are deemed to be "systemically important" based on the Dodd-Frank Act.

In terms of monitoring the activities of finance companies especially for those that are not consolidated with banks, existing frameworks are generally less intrusive and intense than for banks, and tend to be focused mostly on compliance with business conduct or consumer/investor protection requirements at the entity level, rather than being based on a sector-wide monitoring approach, where aggregated trends and risk metrics are tracked and analysed at the sector level. In some cases, however, macro-monitoring seems to be conducted based on data provided by respective industry associations (e.g. Germany). In Australia, in addition to the annual review of shadow banking risks noted above, there are also additional registering and reporting requirements for finance companies surpassing certain size thresholds.[35]

6.4 Business models

As explained earlier, it is very difficult to discern a standard business model for finance companies from the responses. Indeed, some jurisdictions reported very varied funding structures for finance companies, some of which are very dependent on bank funding (e.g. Indonesia), while other jurisdictions rely more on alternative funding sources, including debt issuances and securitisations (e.g. Canada, the Netherlands and the US), as well as deposits or deposit-like products (e.g. Mexico, India, Singapore, and the UK).

[35] Specifically, finance companies with assets larger than A$5 million must register with Australian Prudential Regulation Authority (APRA), whereas those with assets larger than A$50 million must report specific data to APRA (APRA then provides the data to the RBA to minimise the reporting burden of finance companies).

Regarding assets, structures tend to be very specialised along product niches (for instance, companies specialising in automobile finance, mortgages, or securities trading), as well as geographical area (in some emerging markets and developing economies such as India and Mexico, there are finance companies that specialise in providing credit in rural and semi-rural areas). Lending to banks seems to be negligible (in terms of banks' liabilities) in all reporting jurisdictions but careful analysis may be needed at the entity-level.

In terms of profitability, many jurisdictions regarded finance companies to be profitable, often commensurate to profitability levels in the banking industry.

6.5 Risks

Finance companies play an important role in the credit chain by filling credit voids not covered by other types of financial intermediaries (particularly in some emerging markets and developing economies). However, despite the importance of this role, the share of finance companies' assets in the total financial system is small in all jurisdictions. In global terms, for instance, their total estimated size amounts to around $4 trillion (equivalent to 8% of the total assets of NBFIs/OFIs).

Virtually all jurisdictions found difficulties providing specific measures of the maturity and liquidity transformation in the activities of finance companies. On leverage, however, several jurisdictions seem to have imposed regulatory caps (e.g. leverage ratio requirements) on the balance-sheet leverage finance companies can build. Regarding imperfect credit risk transfers, most jurisdictions reported these to be small or non-existent for finance companies.

Given the small relative size of the sector, participating jurisdictions at present do not see these risks to be of serious concern from a systemic point of view. In addition, a few jurisdictions also reported that risks have decreased since the crisis, particularly those relating to securitisation markets, which remain very subdued. Thus, finance companies appear to be more vulnerable to distress stemming from other sectors than likely to cause it.

Nevertheless, a few jurisdictions have emphasised the need to enhance monitoring of this sector as finance companies may be liable to specific risk factors and/or regulatory arbitrage as they are often under less rigorous prudential regulation compared to banks. For example in Turkey, 67% of the liabilities of Turkish leasing companies are in foreign currency. In addition, there are examples of crises affecting the finance company sector, such as in New Zealand from 2006 to 2011[36]. In some jurisdictions, finance companies play a crucial role in providing credit to small and medium enterprises (SMEs), giving rise to potential feedback effects between finance companies and banks via common exposures to SMEs. Banks or industry group often set up finance companies in foreign jurisdictions that provide services which they usually do not provide in their home jurisdictions (e.g. automobile company setting up finance companies in certain jurisdictions that provide mortgages).

[36] In New Zealand, 45 finance companies failed between 2006 and 2011. These were deposit taking finance companies that were not subject to a consistent and meaningful prudential framework and most of whom had aggressively lent to the property development sector. Depositors lost significant sums of money, but the contagion effect was limited to the sector itself and did not affect the banking system. Starting in 2009, Reserve Bank of New Zealand introduced a series of prudential regulations to strengthen the regulation of this sector.

Annex 1: Template used for the data collection exercise

STOCK of financial assets as of end-year	*Col 1*	*Col 2*	*Col 3*	*Col 4*	*Col 5*	*Col 6*	*Col 7*	*Col 8*	*Col 9*	*Col 10*	*Col 11*	*Col 12*	*Col 13*	*Col 14*
	Financial Institutions	Central Bank	Deposit-Taking Institutions	Banks	Assets to OFIs	Liabilities to OFIs	XX (Note 1)	Assets to OFIs	Liabilities to OFIs	Others	Assets to OFIs	Liabilities to OFIs	Insurance Companies (Note 2, 3)	Pension Funds (Note 2,3)
2002														
2003														
……														
2011														

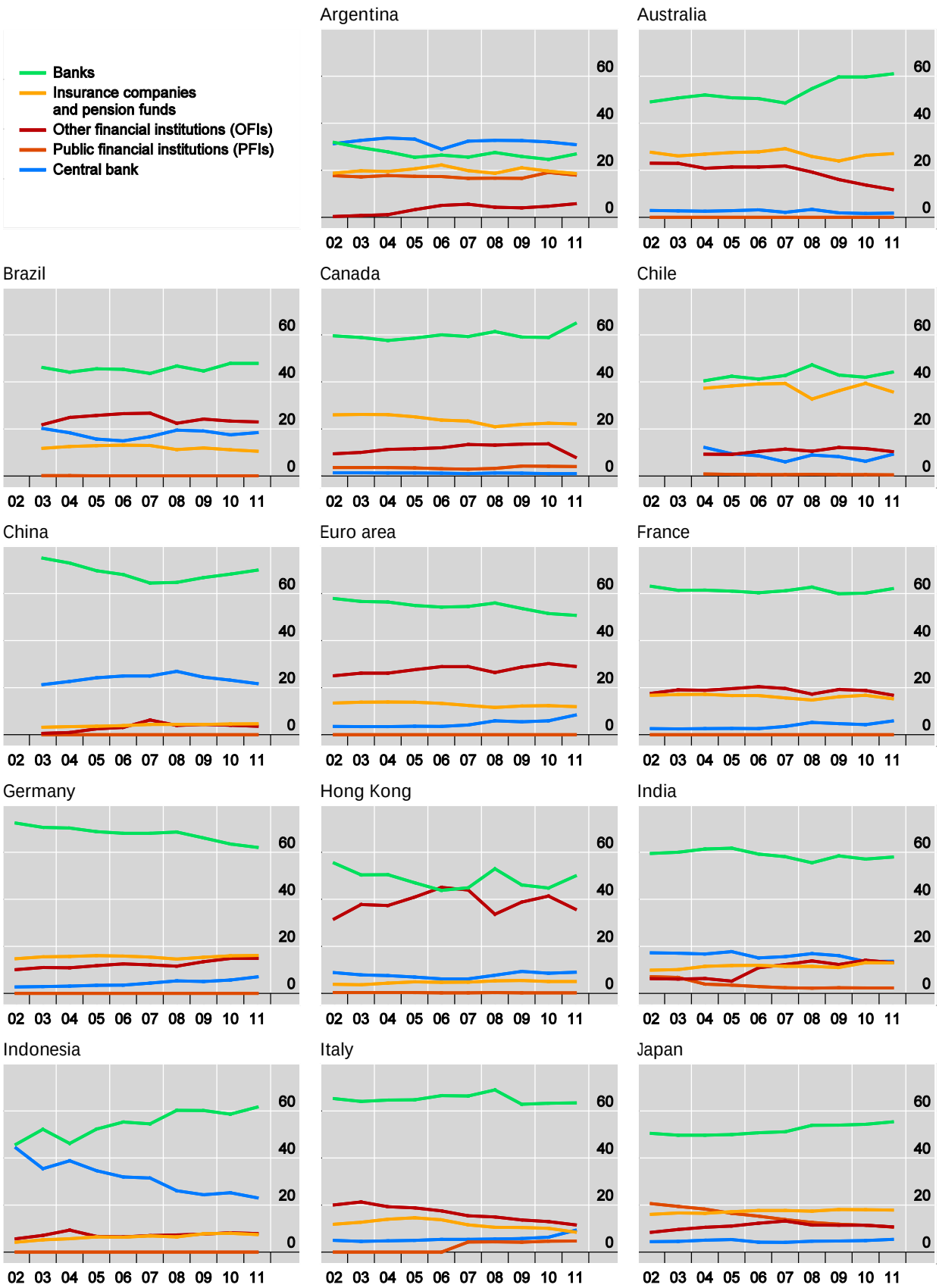
STOCK of financial assets as of end-year	*Col 15*	*Col 16*	*Col 17*	*Col 18*	*Col 19*	*Col 20*	*Col 21*	*Col 22*	*Col 23*	*Col 24*	*Col 25*	*Col 26*	*Col 27*	*Col 28*	*Col 29*	*Col 30*	*Col 31*
	Public Financial Institutions	Public Financial Institutions (Note 4)	XX (Note 1, 4)	Others	Other Financial Intermediaries (OFIs)	Money Market Funds (MMFs) - of which constant NAV or equivalent (Note 5)	Other Money Market Funds (MMFs) (Note 5)	Finance Companies	Structured Finance Vehicles	Hedge Funds (Note 6)	Other Investment Funds (Note 6)	XX (Note 1)	XX (Note 1)	XX (Note 1)	Others	Exchange rate at end of the period	Nominal GDP
2002																	
2003																	
……																	
2011																	

Members may complement the Flow of Funds data with other information. If data is unavailable, please fill in "N/A" or keep it blank.

Note 1: For XX, please fill in subcategories as relevant; Note 2: If data for Insurance Companies and Pension Funds can not be separated, please fill the aggreaged number in the insurance companies' cells and explain that in the Note cell.; Note 3: If data for Insurance Companies, Pension Funds and Public Financial Institutions are included in Other Financial Intermediaries, please clarify that in the Note cell.; Note 4: If data for government-owned deposit-taking institutions are included in the Public Financial Institutions, please separate that out in XX cells or clarify as such in the Note cell. ; Note 5: If data for MMFs can not be separated between CNAV and Others, please fill the aggreaged number in the CNAV MMF cells and explain that in the Note cell.; Note 6: If data for hedge funds can not be separated from Other Investment Funds, please fill the aggreaged number in the Other Investment Funds cells and explain that in the Note cell.

Annex 2: Share of total assets by jurisdiction

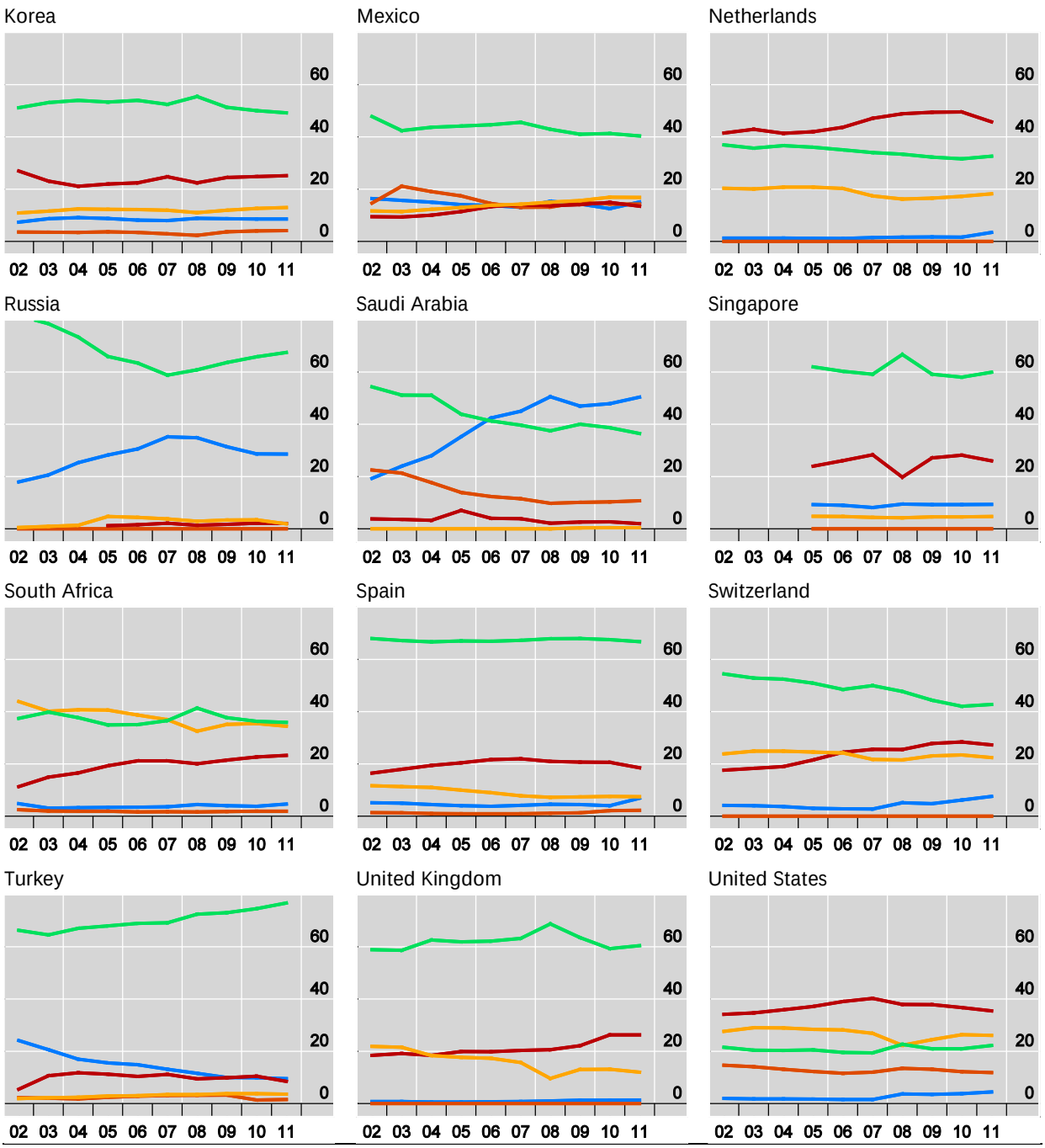
In per cent | Graph A2-1



Share of total assets by jurisdiction (cont.)

In per cent

Graph A2-1



Annex 3: Survey questionnaire on finance companies

Jurisdiction Name:

Agency Name:

Contact Person Name:

Contact details (Tel.):

(email):

In addition to the overall monitoring exercise ("macro-mapping"), this year, the SCAV/AGV monitoring will focus specifically on finance companies, as these entities constitute a significant part of the shadow banking system in many advanced and emerging economies and have not been subject to a detailed stock-taking so far. The results of this stock taking will be incorporated in the shadow banking monitoring report and will also serve as input for the work of FSB Workstream on Other Shadow Banking Entities (OSBE) or WS3. Members are requested to respond to the questions below on a *best efforts basis*. All information will be treated as confidential and shared only among the participating institutions for monitoring purposes only. Please contact the FSB Secretariat for any inquiries.

Finance companies appear as a specific category in "other financial intermediaries" in Column 22 of the shadow banking data template in annex 1. They are generally defined as non-bank financial entities that provide loans to other entities (e.g. banks, corporations, households) and are not subject to the same prudential regulation as banks on an entity-basis.[37] In many, although not all cases, they are non-deposit taking institutions, which explain why they are not prudentially regulated like banks.

(i) Please explain the definition of "finance companies" (column 22 of template) as well as that of "banks" (column 4 of template) that you have used for filling in the shadow banking data template in annex 1.[38]

(ii) Please briefly explain the regulatory regime for "finance companies" (e.g. registration/licensing requirements; main regulatory/supervisory authority) as defined in (i). If finance companies in your jurisdiction are not subject to prudential regulation, please explain why and the alternative regulatory regime (if any) that applies to them.

(iii) Please explain the type of non-bank financial entities that you have categorised as "finance companies" in the data template (e.g. credit card companies, consumer

[37] Thus, subsidiaries of a banking group will be included in "finance companies" unless the bank prudential regulation applies to such entities on an entity (solo)-basis.

[38] The question helps in understanding the potential differences in the definition of "finance companies" and "banks" across jurisdictions.

finance companies, auto loan companies, leasing companies, factoring companies). If you have break-down figures (total assets and number of entities) for each type of finance company, please provide the end-year data for 2005-2011.

(iv) For each type of finance company listed in (iii), please briefly explain their business models (revenues and type of funding). Please clarify whether each type of finance company collects retail or corporate deposits, and if so approximate share of such detail or corporate deposits in their funding. Also, to what extent are they dependent on the funding that comes, directly or indirectly (e.g. through securitisation), from banks and/or non-banks? Are they supported by banks through contingent obligations (such as guarantees or credit lines)? Do they provide funding to banks, if so, in what forms (e.g. CDs, capital)? How have their funding models changed post-crisis? What is the rough average industry earnings performance (e.g. ROA, ROE) for each of these types over the past 3 years?

(v) For each type listed in (iii), please provide the approximate share of the finance company segment (in terms of total assets and/or number of entities) that is consolidated into larger banking group.

(vi) For each type listed in (iii), please provide your brief assessment of their involvement in: (a) maturity transformation; (b) liquidity transformation; (c) leverage; and (d) credit risk transfer (e.g. the use of securitisation, credit derivatives), and the related risks.

(vii) For each type listed in (iii), please briefly explain the policy tools that are available to authorities in addressing the risks associated with (a) maturity transformation; (b) liquidity transformation; (c) leverage; and (d) credit risk transfer.

(viii) Are there specialty finance companies (e.g. credit card companies, consumer finance companies, auto loan companies, leasing companies) that are prudentially regulated as banks in your jurisdiction and thus categorised as "deposit-taking institutions" (column 3) in the shadow banking data template in annex 1?[39] If so and if available, please provide the end-year break-down figures (total assets and number of entities) for 2005-2011. Please explain the rationale for such finance companies for being subject to bank prudential regulation in your jurisdiction.

[39] This question will help us in drawing a global mapping of finance companies internationally, as it may be the case that the same type of companies with a similar business model may be considered as banks in one jurisdiction and as a non-bank in another.

Annex 4: Possible Additional Measures of Interconnectedness between Banks and Shadow Banking System[40]

Developing a quantitative assessment of interconnectedness between banks and shadow banking entities or non-bank financial intermediaries is paramount to detect and understand underlying vulnerabilities in the financial system. This annex discusses several measures to capture interconnectedness based on available information drawing on those used by FSB member agencies for monitoring their shadow banking systems[41].

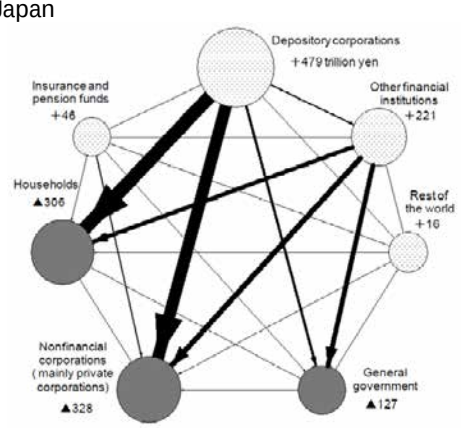
(1) Sector-to-sector exposures information

As shown in Section 5, measuring direct credit exposures and funding dependence between banks and non-bank financial intermediaries based on Flow of Funds data is useful in capturing potential risks stemming from the interconnectedness between the two sectors. Such assessment may be further enhanced if authorities enhance their Flow of Funds data so as to be able to measure which sector holds the liabilities of each of other sectors for all sectors (the so-called "from whom-to-whom" data).

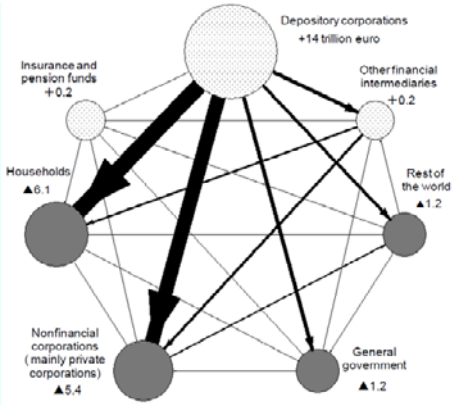
The Bank of Japan (BOJ), for example, has enriched its Flow of Funds dataset by developing the "Detailed Flows of Funds Account (D-FFA)," which aims to identify and measure financial linkages among sectors. Exhibit A4-1 shows financial linkages among different sectors in Japan. The dotted (grey) circles indicate net lenders (borrowers), and the size of circles and the figure next to them represent the amount of the sector's net lending. Arrows and thickness of lines indicate the direction and size of net lending from one sector to another. Thus, interconnectedness between banks ("depository corporations") and non-bank financial intermediaries ("OFIs") in Japan can be assessed by the amount of net exposures between the two sectors, and their relative strength and the ultimate sources of risk may be discerned by the overall picture of interlinkages among all sectors. Similar analysis is also conducted by the ECB.

Who Lends to Whom by Sector in Japan and the euro area — Exhibit A4-1

Japan



Eurozone



Source: Japan's Flow of Funds Accounts, BOJ calculations, Euro Area Accounts.

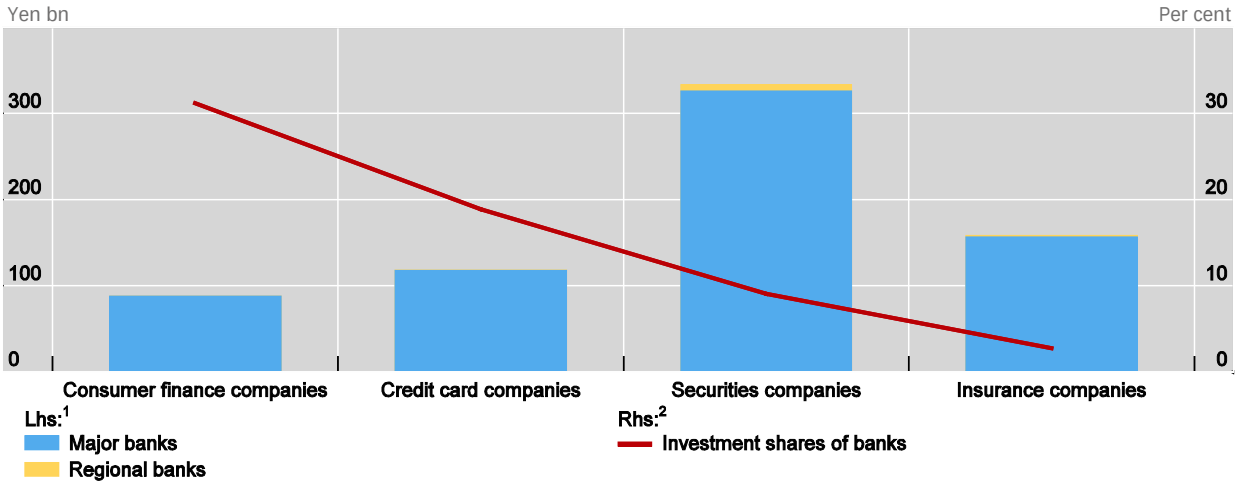
[40] This annex is based on input from Hiroshi Ugai, Yuki Teranishi, Hitoshi Sasaki (Bank of Japan).

[41] It could be difficult to find data for some analysis in other jurisdictions.

(2) Equity investment in financial institutions

Public disclosure information by financial institutions could also enhance the analysis of interconnectedness between banks and shadow banking entities based on Flows of Funds data. For example, financial institutions (in particular banks) often publish their equity investment in other financial sectors (or holdings of their shares by financial sectors). Such information shows the residual risks that banks are exposed to from other financial sectors and deepen the understanding of the risks associated with the interconnectedness between the two sectors. For example, Exhibit A4-2 shows bank's equity investment in other financial sectors in Japan.

Banks' equity investment — Exhibit A4-2



[1] Amount of banks' investment to equity of other financial sectors (eg consumer finance companies). [2] Share of banks' share-holding.

Sources: Bloomberg; Financial Quest.

(3) Market data on funding instruments such as repos

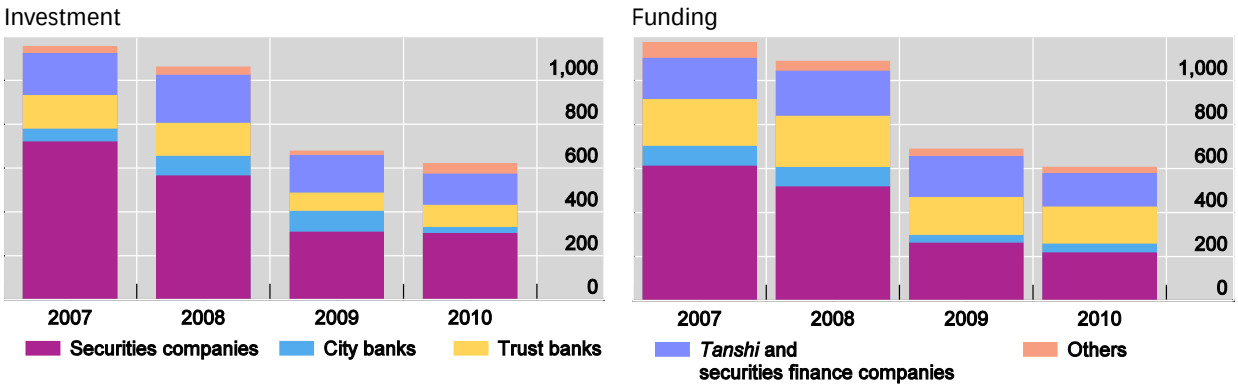
Data on funding instruments such as repos from market statistics could provide additional insight on the risks associated with the interconnectedness.[42] For example, trading volume of repos by sector from repo market statistics may show not only the vulnerability of non-bank financial intermediaries to changes in the repo market (e.g. increase in the haircut) but also how both banks and non-bank financial intermediaries are exposed to common risk factors. For example, Exhibit A4-3 shows both banks and non-bank financial intermediaries ("*Tanshi* (money market broker-cum-dealers) and securities finance companies" and "Others") have significant presence in both funding and investing in the Japanese repo market. In such circumstance, a sudden withdrawal or scaling down of transactions by one of the sectors due to some type of stress (e.g. a rise in the haircut rate) may spill-over to a wide range of sectors, including banks.

[42] Such data may also be obtained from making Flow of Funds statistics if granularity is sufficient.

Trading volume of repos by sector

Data as of end-July for each year, in hundreds of billions of Yen

Exhibit A4-3

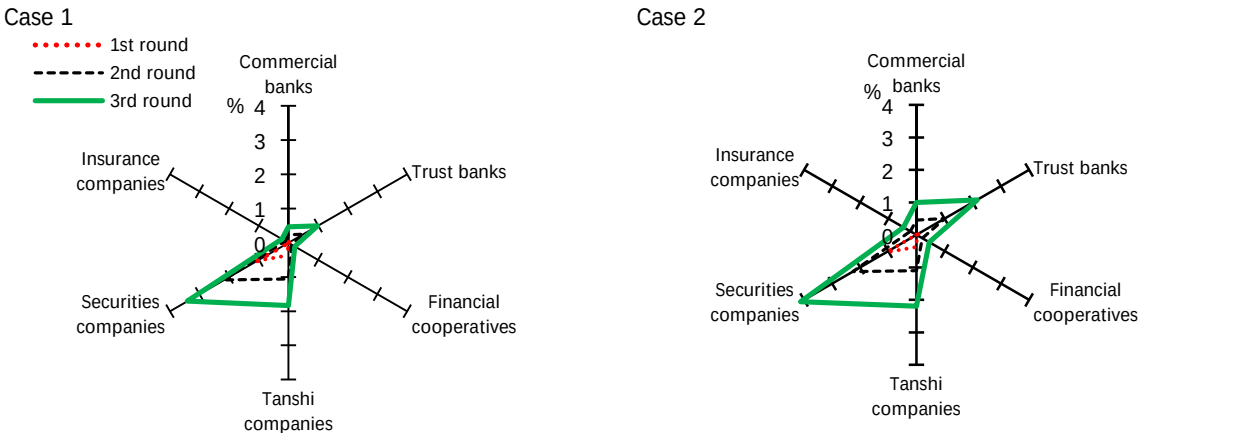


Source: The BOJ.

Further market data obtained through vendors or through off-site/on-site monitoring by authorities may further enhance the assessment. For example, transaction-based data for repos enabled BOJ to conduct degree of pressure to reduce repo outstanding at each sector against 1% point rise in margin rates (Exhibit A4-4). The percentage of reduction in the repo outstanding shows the sensitivity of the interconnectedness across sectors to changes in the repo market. Case 1 assumes that securities companies and *Tanshi* companies (money market broker-cum-dealers) unwind the amount of securities borrowings and evaluates the effects on other sectors. The number of rounds indicates the number of chain reactions of unwinding. The estimation indicates that all sectors, including banks, would inevitably reduce the amount of repos against a rise in margin rates. Furthermore, Case 2 imposes stronger assumption where all market participants reduce their securities borrowings. The estimate shows that the pressure is much stronger on the non-bank financial intermediaries than on banks, indicating that the former is more vulnerable to a shock to the repo market. In any cases, these results show significant interconnectedness between banks and non-bank financial intermediaries in the repo market.

Pressure to reduce repo outstanding following a rise in the haircut rate

Exhibit A4-4



Note: The data are reduction rates in repo amounts for both the securities borrowing and leasing sides at the base point. Case 1 assumes that only securities companies and Tanshi companies reduce their securities borrowings according to the decrease in their funding amounts, whereas Case 2 assumes all participants reduce their securities borrowings according to the same condition.

Source: BOJ calculations.

Annex 5: Country case studies

Case Study 1: Special financial institutions in the Netherlands[43]

Special financial institutions (SFIs) comprise about two-thirds of the "Other financial intermediaries" sector in the Netherlands. There are about 14 thousand SFIs, which are typically owned by foreign multinationals who use these entities to attract external funding and facilitate intra-group transactions. An important reason for their existence is tax planning – the Netherlands has an extensive tax treaty network[44] – and the well-developed Dutch financial services sector.

SFIs are not subject to financial supervision in the Netherlands. However, they are likely to be captured by consolidated supervision abroad if they are part of financial groups. The ten per cent largest SFIs – about 95 per cent of total assets – report to DNB a detailed annual balance sheet and monthly transaction flows for the balance of payments statistics.

Step 1: The scanning and mapping of the shadow banking system

SFIs dominate the "Other financial intermediaries" sector and are the main reason of the Netherlands' prominent position in broad shadow bank measure of the FSB. Total assets of SFIs have expanded rapidly in the past decade and continued to grow during the credit crisis (Exhibit NL A5-1, left-hand panel). Their total size is about 4-5 times domestic GDP, which is comparable to the Dutch banking sector.

About 80 per cent of the SFIs are part of non-financial groups – e.g. oil companies, the telecom sector or the pharmaceutical industry. Such "non-financial SFIs" are not involved with financial intermediation – let alone credit intermediation – but only with intra-group activities and therefore do not fall under the FSB definition of shadow banking[45]. However, a significant minority of 20 per cent – over EUR 500 billion total assets – are closely linked to *financial* groups. These "financial SFIs" can be further split into bank-owned SFIs, securitisation vehicles and other financial SFIs. While the SFI sector as a whole continued to grow in recent years, the proportion of financial SFIs has declined. Financial SFIs may be seen as shadow banks, as they facilitate part of the financial intermediation process and add a non-traditional element to banking. Obviously, financial SFIs' parent companies are often regulated abroad.

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[43] This case study has been contributed by Jan Kakes (De Nederlandsche Bank, DNB) and is based on a presentation by Maarten Gelderman (DNB) to the AGV.

[44] Thanks to the large tax treaty network, a multinational that coordinates its activities in the Netherlands can reduce the number of bilateral tax treaties it has to deal with as well as the risk of double taxation.

[45] Including them in the broader scope of the monitoring is however justified insofar as, while not being shadow banks themselves, they are part of the "casting the net wide" measure. By contrast, financial SFIs are part of a wider chain of financial intermediation that may facilitate shadow banking.

Step 2: The identification of the shadow banking aspects posing systemic risk or regulatory arbitrage concerns

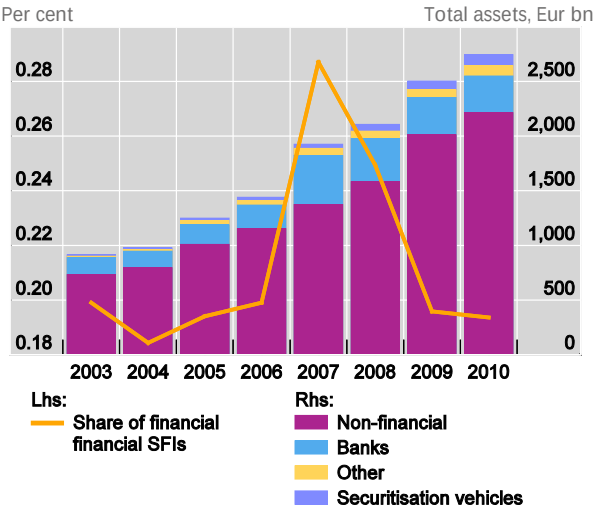
Balance sheet ratios indicate that several SFIs have one or more bank characteristics, although almost none combine all of these characteristics. Table NL A5-1 presents average ratios of financial and nonfinancial SFIs, split into holding and financing companies.[46] By definition, financing companies fund themselves externally, which contributes to the group's funding and – in the case of financial SFIs – financial intermediation. Moreover, they tend to be more leveraged than holdings while a significant proportion of their assets and liabilities consist of credit items. For all categories, short-term funding and maturity transformation – defined as short-term assets minus short-term liabilities – are very limited. It should be noted these averages mask differences across SFIs and potential risk concentrations within SFIs. However, a closer analysis shows that virtually no SFIs combine high leverage and external funding with a strong reliance to short-term finance.

Within the financial SFIs, the relatively small category of securitisation vehicles is clearly part of the shadow bank system. A difference with other SFIs is that they do not perform intragroup functions but are constructed as bankruptcy-remote entities. The vast majority consist of CDOs (about 60% in 2010) and multi-issuance programmes (about 25%).

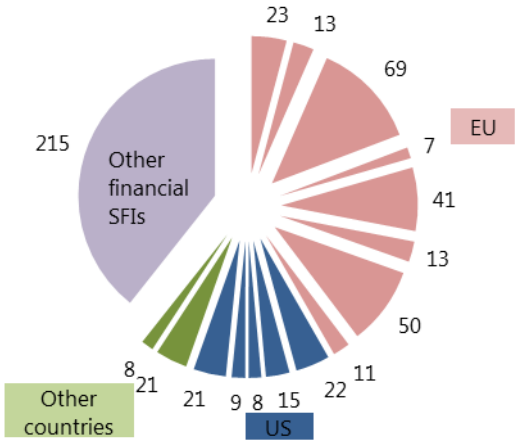
Size and concentration of SFIs are not indicators of shadow banking but may be relevant from a broader financial stability perspective. Total assets vary a lot, while some multinationals have more than one SFI. The largest non-financial group had more than 30 SFIs with total assets of more than EUR 160 billion in 2010. Financial SFIs are relatively concentrated; the 15 largest financial groups own two-thirds of all financial SFIs' assets, or about EUR 300 billion (Exhibit NL A5-1, right-hand panel).

Special financial institutions — Exhibit NL A5-1

Development



Concentration



Source: DNB.

[46] The distinction between holdings and financing companies is made because these firms represent the two main functions of most SFIs: channelling funds between group entities and attracting external finance, respectively. If the proportion of external finance is more than 10 per cent, the SFI is considered a financing company; otherwise, it is seen as a holding. Securitisation vehicles are excluded from financial SFIs because they perform a different function.

Step 3: Detailed assessment of systemic risk or regulatory arbitrage concerns

Altogether, it can be concluded that the majority of SFIs do not fall under the FSB definition of shadow banking. Most are part of non-financial firms and only involved with intragroup activities. Balance sheet ratios indicate some bank-like characteristics, but only a few entities score high on all of them. Nonetheless, financial SFIs – particularly financing companies and securitisation vehicles – may be considered part of the shadow bank system.

From a broader point of view, two other issues seem relevant. First, while many SFIs are structured to optimize tax planning, this also adds to the intricacy of the group, and hence increases the financial system's complexity. SFIs add layers to firms' legal entity structure, which may complicate crisis resolution. In particular, a structure intended to facilitate tax planning brings multiple bankruptcy codes into scope, which is likely to complicate the efficient winding down of a multinational financial group. The failure of Lehman – which also used an SFI for its external funding – illustrates that this is not just a theoretical concern. Second, although there are no strong indications that SFIs are currently used for regulatory arbitrage, stricter regulation may provide incentives for this in the near future. Besides shadow banking, this may also stimulate disintermediation if banks' supply conditions are tightened. This may increase SFIs' role to facilitate non-financial firms to attract external financing directly in capital markets.

Balance sheet ratios

Averages per category — Table NL A5-1

	Number of SFIs	External funding	Short-term funding	Short-term assets	Leverage	Credit assets	Credit liabilities
		As a percentage of total assets					
Financing companies							
Non-financial SFIs	210	59.3	18.2	19.6	398.1	60.7	70.8
Financial SFIs	58	74.9	14.3	11.5	413.4	61.0	74.3
Holding companies							
Non-financial SFIs	973	0.4	11.7	12.0	140.6	29.1	25.7
Financial SFIs	156	0.5	14.1	21.3	152.0	50.0	35.1

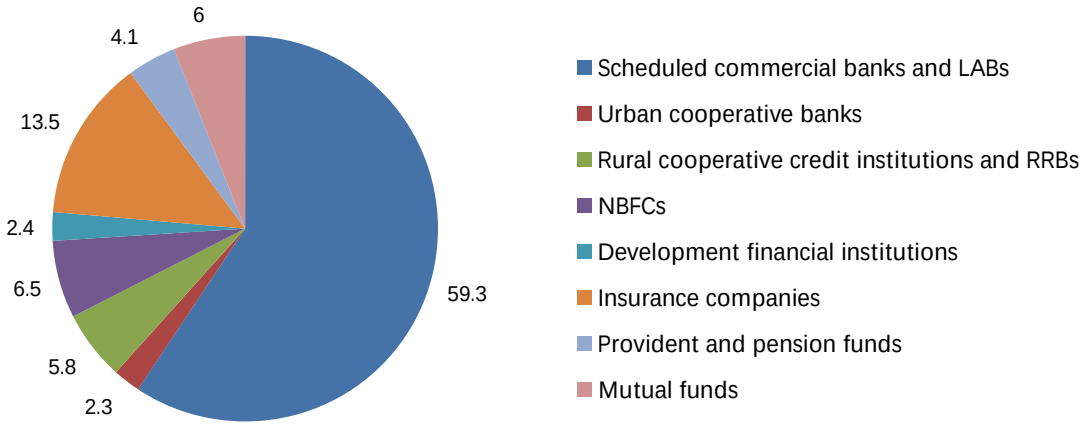
Financial SFIs do not include securitisation vehicles.

Source: DNB.

Case Study 2: Financial Companies in India[47]

The financial sector in the country is dominated by banks, while non-banking financial companies (NBFCs) comprise about 6.5% of aggregate financial sector assets (Exhibit IN A5-1). Currently, the Reserve Bank of India (RBI) has powers to regulate and supervise NBFCs with the goal of protecting the interests of depositors as well as ensuring the sound functioning of these companies.

Indian financial system, in percentage of financial sector assets — IN Graph A5-1



Source: National regulatory sources.

Step 1: The scanning and mapping of the shadow banking system

NBFCs are classified along three different lines: by type of liabilities; by type of activity, and by perceived systemic importance (proxied by asset size) (Table IN A5-1).

Types of NBFCs — Table IN A5-1

Classified on the basis of liabilities accepted:

- Deposit accepting NBFCs (NBFC-NDs)
- Non-deposit accepting NBFCs (NBFC-NDs)

Classified on the basis of activities:

- Asset finance companies (AFCs)
- Loan companies
- Investment companies
- Infrastructure finance companies (IFCs)
- Core investment companies (CICs)
- Infrastructure debt fund companies
- NBFC – micro finance companies
- NBFC – factors

Classified on the basis of systemic importance (asset size):

- Non-deposit taking companies with asset size above Rs 1bn (NBFC-ND-SIs)
- All other non-deposit accepting companies (NBFC-NDs)

[47] This case study is based on a presentation by Rekha Warriar (Reserve Bank of India) to the AGV.

Over the last fifteen years, the NBFC sector has been consolidated into a smaller number of large companies with diversified activities. There has been a gradual, regulation-induced reduction in the number of deposit taking NBFCs from nearly 1500 in 1998 to less than 300 currently. Conversely, the systemically important[48] non-deposit taking NBFCs (amounting to 70% of total assets of NBFCs) have recorded significant growth (Table IN A5-2).

Systematically important non-deposit taking NBFCs — Table IN A5-2

		2008	2009	2010	2011	2012
Asset finance companies	No of reporting companies	10	12	13	13	17
	Total assets (in USD mln, rounded)	8,400	7,900	11,000	14,000	17,000
Investment companies	No of reporting companies	91	119	154	154	207
	Total assets (in USD mln, rounded)	16,000	26,000	37,000	43,000	58,000
Loan companies	No of reporting companies	37	56	78	79	130
	Total assets (in USD mln, rounded)	25,000	29,000	34,000	46,000	59,000
Infrastructure finance companies	No of reporting companies	5	7	7	7	8
	Total assets (in USD mln, rounded)	33,000	49,000	60,000	76,000	100,000

Source: RBI.

Step 2: The identification of the aspects of the shadow banking system posing systemic risk or regulatory arbitrage concerns

The regulatory framework for NBFCs initially focused on deposit taking NBFCs. In the late 1990s and early 2000s, it was recognised that large non-deposit taking companies could pose systemic risks as well, and thus the scope of the off-site monitoring system was widened to include large non-deposit taking companies (currently there are reporting requirements for all NBFCs with an asset size of approximately $10 million and above). Also, the focus of NBFC regulation shifted to include systemically important non-deposit taking NBFCs in recognition of the fact that their inter-linkages with the broader financial system could pose increasing systemic concerns.

Supervisory data on deposit taking NBFCs is available since 2005, while the detailed assessment of systemically important non-deposit taking NBFCs began in 2010. Information reviewed to assess risks includes balance sheets and indicators of compliance with prudential regulations (e.g., capital adequacy and exposure limits). Admittedly, there are data gaps regarding the small non-deposit taking NBFCs, but these affect an insignificant share of the sector. Requiring detailed disclosures by small NBFCs similar to the ones provided by the larger NBFCs would be too onerous for them and not commensurate with their size.

The NBFC sector is within a well-defined regulatory perimeter and not perceived to pose significant systemic risks at present. However, there are aspects which could pose systemic risks or give raise to regulatory arbitrage concerns. Some of these are discussed below.

[48] All non-deposit taking NBFCs with asset size of 1 billion Indian rupees or and above were termed systemically important in December 2006.

Step 3: Detailed assessment of systemic risk or regulatory arbitrage concerns

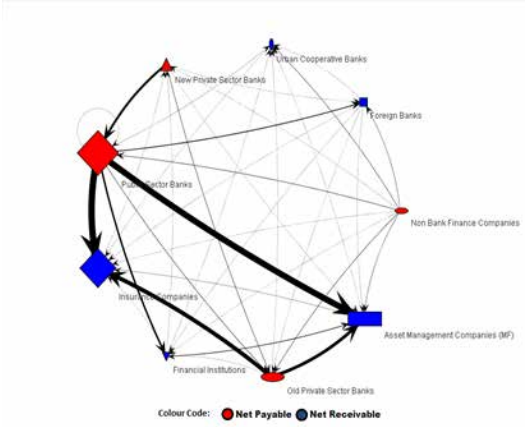
Interconnectedness

A mapping of the network of intra financial sector exposures reveals a certain degree of interconnectedness of the NBFCs with the rest of the financial system (Graph IN A5-2). Bank funding, in particular, constitutes an important source of funds for NBFCs. Between 2010 and 2011, NBFC borrowing from banks increased by 54.7% while credit extended by NBFCs grew by 30.4%. Similar trends were observed during 2011-12. The growing reliance of NBFCs on bank funding could place strain on the banks if NBFCs were to deleverage under conditions of stress. NBFCs themselves could also face difficulties if banks were to become reluctant to lend to them in case of a liquidity crunch (Graph IN A5-3).

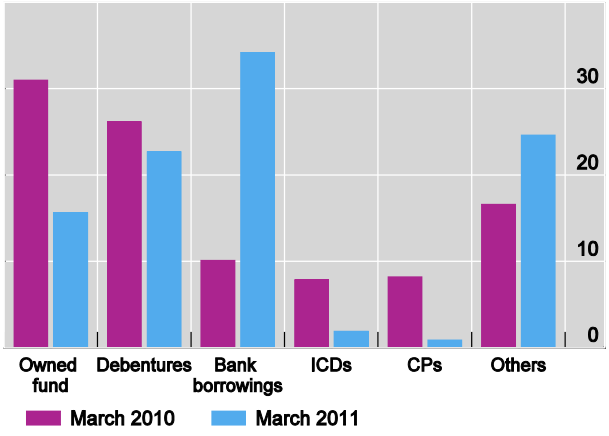
Micro Finance Institutions (MFI)

The MFI sector has experienced robust growth. Recently, concerns regarding predatory lending practices have emerged (e.g., very high interest rate charges, coercive recovery practices, and lending beyond the debt sustainability levels of households). The regulatory structure for MFIs is currently being reviewed and new legislation is being considered.

Indian financial network system — Graph IN A5-2



Funding of NBFCs, in per cent — Graph IN A5-3



Source: RBI.

Gaps in regulation between banks and NBFCs

There are important differences in the regulatory frameworks of NBFCs and banks. For instance, capital adequacy requirements for NBFCs are higher, although the period for classifying loans as non-performing is more flexible. The Statutory Liquidity Ratio[49] prescribed for deposit taking NBFCs is also lower. Deposits with NBFCs are not, however, covered under the deposit insurance scheme. Unlike banks, non-deposit taking NBFCs face no restrictions with respect to branch expansion, capital market exposures, and financing activities such as for mergers and acquisitions. Deposit taking NBFCs have limited restrictions on branch expansion, capital market and real estate. The regulatory framework for ownership and governance are also very different.

[49] The Statutory Liquidity Ratio is the proportion of net demand and time liabilities which banks/finance companies have to maintain in the form of cash and/or approved securities, such as government securities.

Government owned NBFCs, although registered with RBI, are not subject to any of the NBFC prudential norms, including capital adequacy and credit exposure and have been exempted from on-site supervision. There are also regulatory gaps in respect of Collective Investment Schemes, which pose concern largely from the consumer protection perspective. The potential for regulatory arbitrage between banks and NBFCs is continuously examined by the RBI and policy action is undertaken whenever warranted and/or feasible.

The implications of the trade-off between financial inclusion and financial stability

NBFCs have emerged as important agencies fostering greater financial inclusion and complementing banking activities. NBFCs serve niche areas and are more flexible and borrower friendly. In many cases, particularly in the rural and semi-urban areas, NBFCs have contributed to 'last mile credit connectivity' by offering products which banks have not been able to or are reluctant to (e.g., NBFCs cater to SMEs and to the (small) transport industry. Thus NBFCs play a valuable economic role which must be supported through an appropriately designed regulatory framework. It is argued by some that the absence of regulatory diversity may lead to convergence of business conduct which results in amplifying systemic instability, especially during periods of stress. A range of regulatory regimes could in fact encourage market participants to pursue a variety of business strategies within the financial sector such that the sector may be more resilient to contagion from systemic financial stress.

Case study 3: Securities Lending in the United States[50]

Summary

Securities have been routinely lent among financial market participants since at least the 1930s. Borrowers need temporary ownership of the security in order to short it, as part of their overall investment strategy or for other reasons. Lenders are often long-term investors, such as pension funds, who wish to realize additional return from these alternative uses of their securities. Borrowers are often financial market participants such as hedge funds or broker-dealers using the borrowed securities to pursue trading strategies or other activities. The borrower typically provides collateral to the lender in the form of cash or securities; under U.S. law, only cash or bonds may be pledged as collateral. In other jurisdictions, a much wider range of securities may be pledged as collateral. Lenders may reinvest the pledged collateral in attempt to gain additional return. Securities lending operations pose systemic risks if they contribute to the opacity and unexpected interconnectedness of the financial system, are particularly procyclical (in that participants demand the early return of their securities and collateral during stressful periods), or contribute fire sales as they unwind suddenly. In addition, chains of rehypothecation, where securities used as collateral are re-lent, may pose additional risks associated with the difficulty of unwinding numerous trades rapidly. A variety of mitigants to these risks are in place or under consideration, and the matter is a focus of attention by the Financial Stability Board (see "Securities Lending and Repos: Market Overview and Financial Stability Issues" Interim Report of the FSB Workstream on Securities Lending and Repos, April 27, 2012)[51].

Overview of Securities Lending

In the simplest securities lending transaction, the owner of a security lends it to an unaffiliated party in return for collateral. Typically, the title to the security is also transferred. (As a result, if the security is a voting share in a corporation, the lender must take back the security in order to exercise the vote.) While these loans have a specified term, in most cases either party can terminate the agreement effectively at will. While data are incomplete, roughly $1.7 trillion of securities are on loan globally.

A key difference between securities lending operations in the United States relative to other jurisdictions is the permitted collateral. In most cases, U.S. securities lenders are only permitted to accept cash or bonds as collateral. In other jurisdictions a wider range of collateral may be used, including, notably, equities. As a result, roughly three-quarters of U.S. securities loans are collateralized by cash, a much higher proportion than in other jurisdictions.

The size of securities lending market is currently only about half of its pre-crisis level, with the most rapid decline occurring in the acute phase of the financial crisis in late 2008. The collapse was in part fueled by the failure of Lehman Brothers and the near-failure of AIG,

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[50] This case study is based on a presentation by Andreas Lehnert (Federal Reserve Board) to the AGV.

[51] http://www.financialstabilityboard.org/publications/r_120427.pdf

both of which were active participants in the securities lending business. In addition, hedge funds (which are large securities borrowers) have decreased the scale of their operations and, as a general matter, market participants remain less willing to take on counterparty risk. Finally, a general reduction in trading activity since the crisis has dampened the demand from hedge funds and others to borrow securities.

Participants in Securities Lending Operations

Security lenders tend to be long-term investors, such as pension funds, insurance companies, banks, and sovereign wealth funds, who hold large diversified portfolios of securities. These investors tend to own large pools of equities and bonds acquired as part of an investment strategy focused on delivering steady returns over long time horizons. Roughly speaking, the majority of securities lending is done by mutual funds, pension funds and official investors such as central banks and sovereign wealth funds.

These investors may find themselves owning a security that is in particularly high demand among market participants, such as Treasury securities, or individual equities that are needed by investors for specific trading strategies. By lending these securities, the lender retains the economic benefits of ownership, including coupon payments and dividends, but also has an opportunity to gain increased yield. If the borrower pledges cash as collateral, the lender can invest this and earn a return. If the borrower pledges some other security, it will also typically pay a fee to the lender. Often, returns realized by investing cash collateral are split between the borrower, lender, and custodian, with the split favoring the lender if the security is particularly scarce. The total return to lending securities vary by the security type, with lower returns (on the order of 20 basis points at the moment) paid on U.S. government securities and higher returns (on the order of 60 basis points at the moment) paid on equities.

Borrowers of securities include a wide range of market participants, including dealers, hedge funds and other traders. The borrowed securities can be used to support borrowers' trading strategies, including use in shorting a security or offsetting a long position. In addition, borrowers may seek high-quality collateral such as Treasury bonds which are, in turn, required as collateral in other trades.

Securities lending is often facilitated by intermediaries, who provide liquidity, counterparty protection, custodial services, investment services and anonymity to lenders and borrowers. Indeed, certain institutions may be prohibited from lending directly to typical borrowers such as hedge funds, making intermediaries essential. Depending on the specifics of the contract, the intermediary may provide the lender with insurance against the failure of the ultimate borrower of the security. In addition, because much of the benefit from lending securities is tied to the returns from investing cash collateral, intermediaries may provide investment services, offering a variety of investment vehicles to lenders.

Risks to Lenders and Borrowers

Securities lenders who take cash collateral and reinvest it accept the market risk of this activity. In addition, an intermediary acting on behalf of the lender may commingle collateral from many lenders, which exposes lenders to losses should there be rapid withdrawals from the investment pools. Of course, the ultimate borrower of the security may fail or be unable

to promptly return the security for a variety of reasons. Finally, the borrowers may unexpectedly return the security and demand the return of its collateral, forcing the lender to rapidly liquidate any investments made with the collateral.

Borrowers of securities face market risk, for example, when borrowing a security in order to short that security. Borrowers are also exposed to counterparty risk in that the lender of the security may fail or otherwise be unable to promptly return the collateral pledged by the borrower. The lender may also terminate the loan early and demand return of the security, potentially forcing the borrower to unwind or liquidate a position at a loss.

The Case of AIG

The case of the securities lending operation run by American International Group (AIG) is particularly instructive in the potential risks of such operations. AIG, at the time the world's largest insurance company, was, in 2008, running a securities lending operation of roughly $75 billion. As a securities lender, AIG lent out a variety of assets from its investment portfolio, mostly in exchange for cash collateral. In turn, AIG invested approximately sixty percent of the collateral in private-label mortgage-backed securities (RMBS). When the value of these securities fell sharply, and AIG's creditworthiness came into question for a variety of other reasons, the securities borrowers rushed to terminate their loans in order to reclaim their collateral as quickly as possible. To make good on these demands, AIG would have had to dump a large volume of securities, potentially precipitating a fire sale, with attendant knock-on effects. In order to protect the U.S. financial system from the disruptions associated with such actions, the Federal Reserve extended collateralized loans to AIG.

Systemic Risks from Securities Lending Operations

The AIG experience highlights some of the systemic risks associated with securities lending operations. Securities lending is a potentially pro-cyclical source of funding, raising the possibility that participants will have to dump securities during times of financial stress. It can lead to unexpected connections among disparate market players, such as insurance companies and hedge funds. As a result, securities lending may contribute to the opacity of the financial system and erode the willingness of participants to take on counterparty risk. In addition, it is a source of contagion, with the distress of one firm ramifying throughout the financial system in unpredictable ways.

The related practice of rehypothecation, or the re-use of collateral, can pose additional risks. During calm periods, market participants may on-lend securities, leading to unwieldy and long chains of ownership. In crisis episodes, these may prove difficult to unwind rapidly.

Several mitigants to these risks have been undertaken or are under consideration. Securities lenders have taken actions to protect themselves. They have limited the investment options for reinvested collateral used by custodians. In addition, they have required custodians to maintain funds in segregated accounts: this practice limits contagion from rapid withdrawals of funds from custodians and hence enhances stability more broadly. The 2010 financial reform legislation, the Dodd-Frank Act, contained provisions increasing the transparency and disclosure of securities lending operations. Finally, the Financial Stability Board will propose reforms by the end of 2012.