

**Assessment of shadow banking activities, risks and the adequacy  
of post-crisis policy tools to address financial stability concerns**

**3 July 2017**

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# Assessment of shadow banking activities, risks and the adequacy of post-crisis policy tools to address financial stability concerns

## Executive Summary

*In response to a request from the G20, the Financial Stability Board (FSB) has assessed the evolution of shadow banking activities<sup>1</sup> and related financial stability risks since the 2007-09 global financial crisis, and whether the policies and monitoring put in place since then are adequate to identify and contain these risks. Aspects of shadow banking considered to have contributed to the financial crisis have declined significantly and generally no longer pose financial stability risks. Reforms have also contributed to a reduction in vulnerabilities in areas such as money market funds (MMFs) and repurchase agreements (repos). However, a rise in assets held in certain investment funds has increased the risks from liquidity transformation, underscoring the importance of effective operationalisation and implementation of policies agreed to address this, in particular those to address structural vulnerabilities in asset management activities. At present, the FSB has not identified other new financial stability risks from shadow banking that would warrant additional regulatory action at the global level. New forms of shadow banking are also likely to develop in the future, emphasising the importance of continued monitoring to mitigate associated risks and support the transformation of these activities into resilient market-based finance.*

**The aspects of the shadow banking activities generally considered to have made the financial system most vulnerable and that contributed to the financial crisis have declined significantly and are generally no longer considered to pose financial stability risks.** This decline (see Graph 1) is due in part to regulatory reforms, changing risk appetite, and rejection of particular products and funding models. Other elements of shadow banking, such as MMFs and repos, also experienced declines from previously elevated levels.

**Since the financial crisis, policies have been introduced at the international level, and both regulatory reforms and new policy tools have been introduced at national/regional levels to address financial stability risks from shadow banking that have materialised to date.**

- **Authorities are establishing system-wide oversight and monitoring frameworks to assess the financial stability risks from shadow banking, so that appropriate policy measures can be taken.** The FSB has been conducting annual monitoring exercises since 2011 to assess global trends and risks in the shadow banking system, now covering 28 jurisdictions. FSB members have begun implementing *a forward-looking high-level Policy Framework* to detect and assess sources of financial stability risks from shadow banking.<sup>2</sup>

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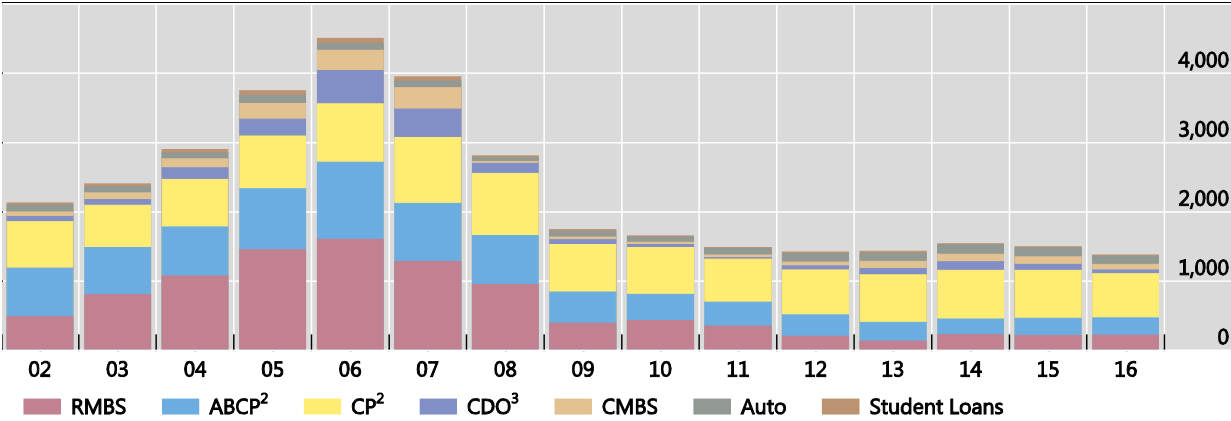
<sup>1</sup> The FSB defines shadow banking as “credit intermediation involving entities and activities (fully or partially) outside the regular banking system”. Some authorities and market participants prefer to use other terms such as “market-based finance” instead of “shadow banking”. The use of the term “shadow banking” is not intended to cast a pejorative tone on this system of credit intermediation. The FSB is using the term “shadow banking” as it is the most commonly employed and, in particular, has been used in previous G20 communications.

<sup>2</sup> This monitoring framework classifies non-bank credit intermediation into five “economic functions” (EFs) by which entities of various legal forms engage in distinct activities that give rise to shadow banking risks, including liquidity and maturity transformation, leverage, and imperfect credit risk transfer.

# US and European structured finance<sup>1</sup>

In billions of US dollars

Graph 1



<sup>1</sup> Includes securitisation issuance for US and Europe, where available. <sup>2</sup> US Commercial Paper Outstanding. <sup>3</sup> Includes Structured Finance and Collateralised Loan Obligations (CLOs).

Source: SIFMA.

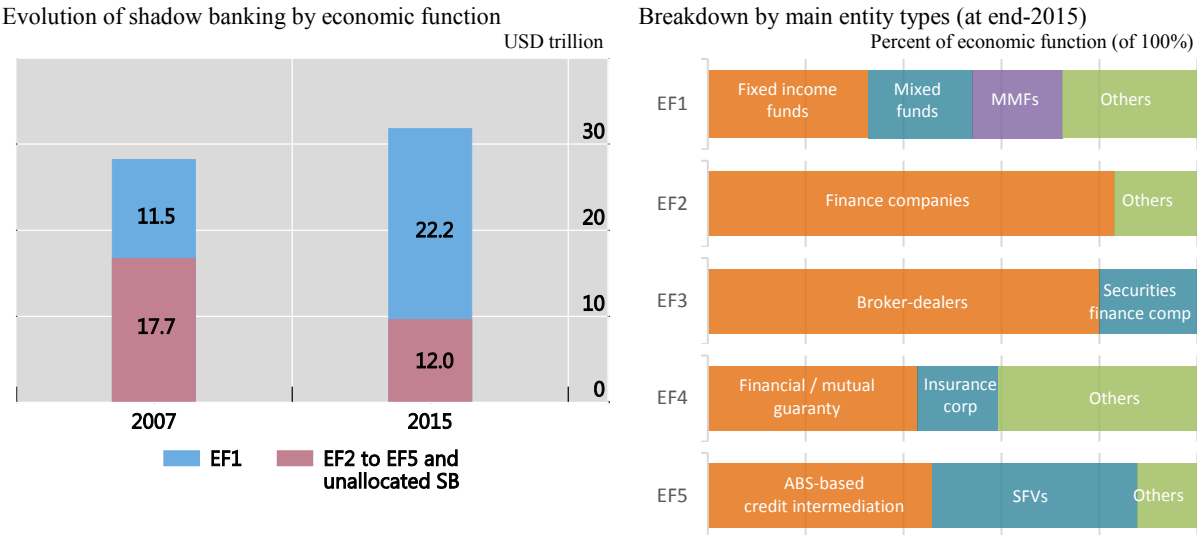
- Authorities have taken **steps to address banks’ involvement in shadow banking**. *Consolidation rules for off-balance sheet entities were enhanced* so that banks now must bring a large proportion of their off-balance sheet special purpose entity assets onto their balance sheets, where they are subject to prudential rules. *Bank prudential rules (i.e. Basel II.5/III) have also been strengthened* to better capture and capitalise banks’ exposures to shadow banking entities and activities. A second consultative document on supervisory guidelines to address banks’ “step-in risks” for non-contractual and reputational exposures was issued in March 2017 and remains to be finalised.
- Authorities have acted **to reduce liquidity and maturity mismatches, and also leverage** in the shadow banking system. *Regulatory reforms of MMFs* are addressing the liquidity mismatches and improving their ability to respond to run risks. The 2013 FSB [recommendations on securities financing transactions \(SFTs\)](#) are designed to reduce liquidity/maturity mismatches from non-banks’ use of SFTs, while the 2015 [regulatory framework for haircuts on non-centrally cleared SFTs](#) is designed to constrain excessive build-up of non-bank leverage through this activity. Market infrastructure reforms in OTC derivatives and tri-party repo markets also help reduce the risks associated with these transactions. In some jurisdictions, *enhanced prudential standards and consolidated supervision* for certain large non-bank financial institutions that could pose a threat to financial stability reduced their leverage and maturity mismatches.
- **Alongside increases in capitalisation of banks’ securitisation related exposures, national and regional reforms have been undertaken to address incentive problems and opaqueness associated with securitisation.** The *transparency and standardisation of securitisation products has been enhanced* to reduce the opaqueness and complexity associated with such products and to enable market discipline to function properly. *Retention requirements* were introduced in the largest securitisation markets (i.e. US and EU) to align the incentives among originator (or issuer) of a securitisation and its investors.

**While some of the more vulnerable aspects of shadow banking have shrunk from pre-crisis levels, others have grown or remain relatively large** (see Graph 2). The continued existence of interconnectedness and potential for financial stability risks warrants continued attention by authorities.

Shadow banking decomposition

27 jurisdictions

Graph 2



EF1 = Economic function 1; EF2 = Economic function 2; EF3 = Economic function 3; EF4 = Economic function 4; EF5 = Economic function 5; Unallocated SB = assets of entities that were assessed to be involved in shadow banking activities, but which could not be assigned to a specific economic function; SFVs = structured finance vehicles.

Source: [Global Shadow Banking Monitoring Report 2016](#).

- The size and considerable growth of collective investment vehicles that are susceptible to runs (EF1: representing 65% of the narrow measure of shadow banking) such as open-ended fixed income funds, credit hedge funds, real estate funds and MMFs, have been accompanied by a combination of a relatively high degree of credit risk, as well as liquidity and maturity transformation.
- Non-bank financial entities that are dependent on short-term funding to support lending activities (EF2), mostly comprised of finance companies, have declined since the crisis to 8% of shadow banking assets. Finance companies tend to have relatively high leverage and engage in some maturity transformation, which makes them more susceptible to roll-over risk, including during period of market stress.
- Market intermediaries dependent on short-term funding (EF3) such as broker-dealers experienced a sharp decline after the financial crisis, due in part to the shift in the regulatory status of some large broker-dealers to bank holding companies. Nevertheless, these intermediaries comprise over 11% of shadow banking assets.<sup>3</sup> Given their business model, broker-dealers engage in significant leverage and maturity transformation (e.g. through repos), and in some cases their level of interconnectedness with other sectors of the financial system is relatively high.

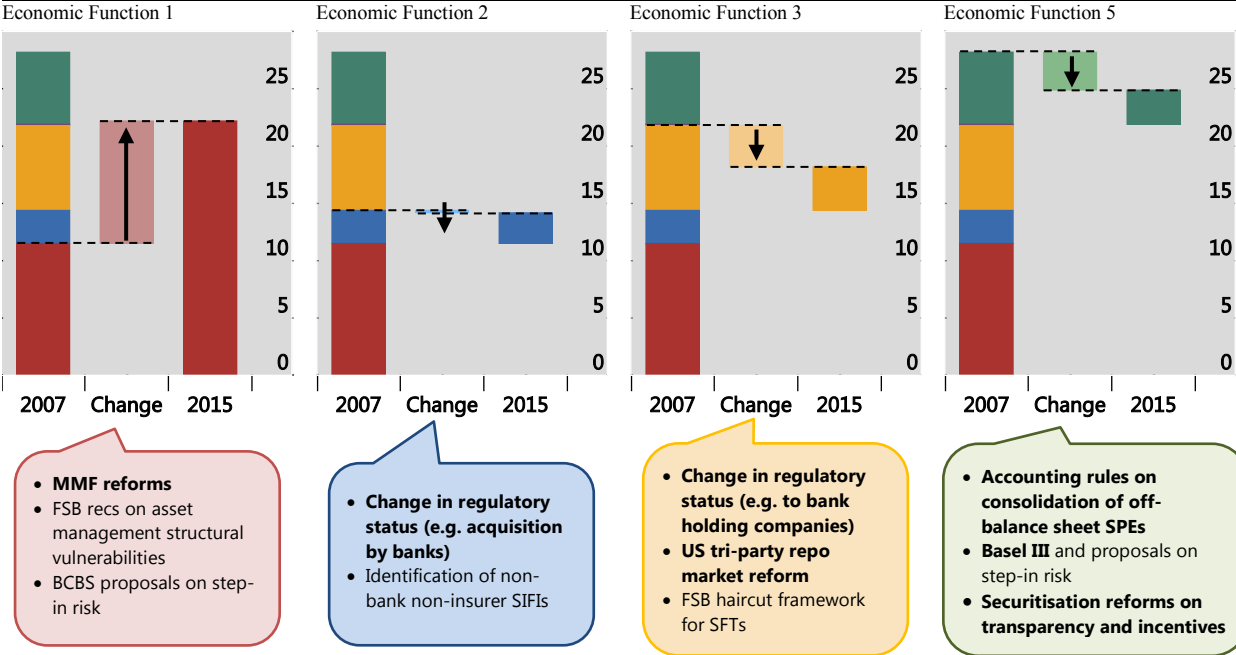
<sup>3</sup> Net of broker-dealers that have been excluded from the shadow banking measure due to prudential consolidation, the EF3 measure has continued to grow in some jurisdictions since the crisis.

**Shadow banking is less leveraged than before, thereby reducing the overall financial stability risks posed. However, the size and considerable growth of collective investment vehicles, where accompanied by significant liquidity transformation, could prove disruptive in market stress (see Graph 3).**

Regulating the evolving system of market-based finance

In trillions of US dollars

Graph 3



Bubbles show examples of policy measures applied to the relevant economic functions since the financial crisis. Additional policy measures may have been introduced at national/regional and international levels. Measures in bold are in force. EF4 was not represented in this graph as it is only 0.4% of total shadow banking assets.

- Securitisation-based credit intermediation (EF5)
- Facilitation of credit intermediation (EF4)
- Market intermediation dependent on short-term funding (EF3)
- Lending dependent on short-term funding (EF2)
- Management of collective investment schemes that are susceptible to runs (EF1)

Source: Adapted from FSB Shadow Banking Monitoring Report 2016.

**These developments underscore the importance of effective operationalisation and implementation** of the FSB’s January 2017 [policy recommendations to address structural vulnerabilities from asset management activities](#) designed to address financial stability risks that could materialise in the future. International Organization of Securities Commissions (IOSCO) will publish consultative documents on open-ended funds’ liquidity risk management in July 2017 and will finalise them by the end of 2017. IOSCO is also identifying and/or developing consistent leverage measures by the end of 2018.

**At present, the FSB has not identified other new financial stability risks from shadow banking that would warrant additional regulatory action at global level.**

**However, new variations of shadow banking activities are likely to develop in the future.** FSB member authorities have made progress in implementing the forward-looking high-level



[\*Shadow Banking Policy Framework\*](#) endorsed by the G20 in 2013 to detect and address the sources of financial stability risks from shadow banking. A 2015-16 [Peer Review](#) of members' progress in implementing the Policy Framework found that while shadow banking monitoring has improved, continued data gaps and lack of granularity impede a more forward-looking identification of potential financial stability risks.

To address residual gaps and further enhance the oversight, FSB member authorities have agreed on the following recommendations going forward:

- (i) **Enhance system-wide oversight of shadow banking and policy responses to address the identified risks through implementing the recommendations of the 2015-16 Peer Review**, including: (i) establishing a systematic process for assessing financial stability risks from shadow banking, and ensuring that any entities or activities that could pose material financial stability risks are brought within the regulatory perimeter; (ii) addressing identified gaps in risk-related data; and (iii) removing impediments to cooperation and information-sharing between authorities. A follow-up peer review on implementation of the FSB Policy Framework will be conducted in 2020. **(Recommendation 1)**
- (ii) **Strengthen the monitoring of shadow banking activity and the data collection framework** through: improving data granularity on assets and liabilities as well as on cross-border interconnectedness; supplementing flow of funds data with supervisory and/or commercially-available data to assess risks; and improving information-sharing on emerging risks. The FSB will assess the data availability and make improvements to its annual monitoring exercise as appropriate in 2018. **(Recommendations 2-4)**
- (iii) **Complete the remaining policy development at the international level and implement the agreed policy recommendations to reduce risks and arbitrage opportunities across jurisdictions and sectors.** In this regard, it is important that: (i) the Basel Committee on Banking Supervision (BCBS) complete its guidelines on step-in risk; (ii) IOSCO operationalise the FSB recommendations to address structural vulnerabilities from asset management activities in line with the agreed timeline; and (iii) national/regional authorities implement agreed policy recommendations in a timely and consistent manner.<sup>4</sup> **(Recommendations 5-7)**

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<sup>4</sup> To support timely and consistent implementation of agreed recommendations, the FSB will establish a comprehensive framework to monitor the implementation of all shadow banking policy recommendations on a regular basis. IOSCO will conduct follow-up level one and level two peer reviews on its recommendations on MMFs and securitisation incentives after relevant regulations are adopted in remaining major jurisdictions, and will report its findings to the FSB.

## Introduction

The “shadow banking system” can broadly be described as “credit intermediation involving entities and activities (fully or partially) outside the regular banking system”.<sup>5</sup> Non-bank financing provides a valuable alternative to bank funding and helps support real economic activity. It is also a welcome source of diversification of credit supply from the banking system, and provides healthy competition for banks. Like banks, shadow banking based on short-term funding of non-bank entities and leverage can be vulnerable to “runs” due to liquidity and maturity transformation, which in turn can generate contagion risk. These features can heighten procyclicality by accelerating credit supply increases during surges in confidence, but cause a precipitate fall in credit supply upon a loss of confidence. Moreover, the risks in the shadow banking system can easily spill over into the regular banking system and become amplified as credit is funded and intermediated through a less transparent chain of entities.

The 2007- 09 global financial crisis demonstrated that credit intermediation involving leverage and maturity transformation conducted without appropriate oversight and regulation can become a source of systemic risk. In the crisis, the unravelling of complex and opaque credit chains led to a spiral of asset fire sales and the abrupt contraction of credit intermediation that threatened the entire financial system and the real economy. As the crisis unfolded, authorities put in place various financial support programs that backstopped market funding until market confidence could be restored.

A core objective of FSB and G20 regulatory reforms since the crisis has been to reduce such financial stability risks and to transform shadow banking into resilient market-based finance for the real economy. It has sought to achieve this by developing policies to strengthen oversight and regulation of shadow banking to address bank-like risks to financial stability emerging outside the regular banking system, while not inhibiting sustainable non-bank financing models.

In response to a request from the G20, the FSB has assessed the evolution of shadow banking activities and related financial stability risks since the crisis, and whether the policies and monitoring implemented since then are adequate to identify and contain these risks. Section 1 reviews the evolution of the riskiest elements of shadow banking that contributed to the crisis. Section 2 reviews the shadow banking policy framework developed to monitor shadow banking activities and risks, as well as key policy measures adopted since the crisis to address them. Section 3 highlights key activities and risks identified from the monitoring exercises. Section 4 assesses remaining gaps, and sets out recommendations for authorities to better monitor and address the residual financial stability risks from shadow banking that may warrant policy responses.

### **1. Shadow banking activities and risks since the financial crisis**

**The aspects of shadow banking generally considered to have made the financial system most vulnerable and contributed to the financial crisis have declined significantly, and are**

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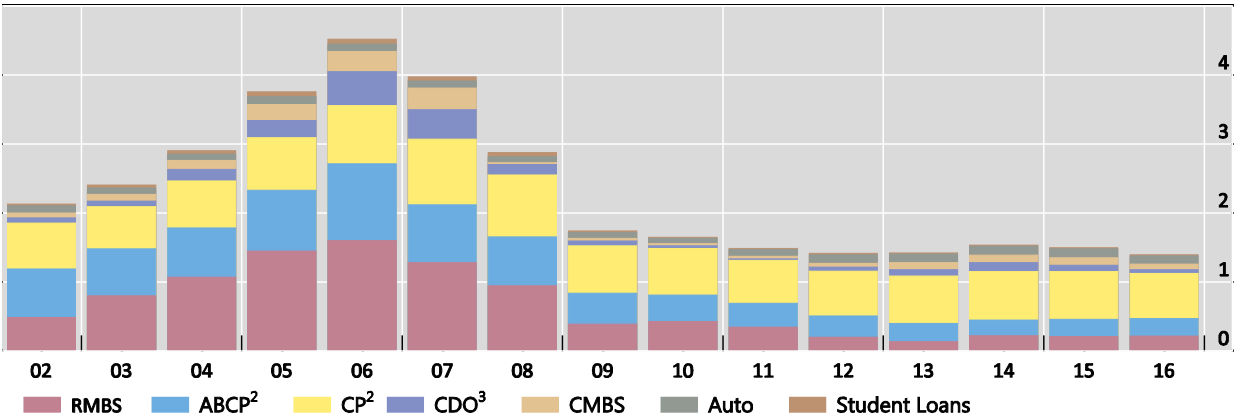
<sup>5</sup> The use of the term “shadow banking” is not intended to cast a pejorative tone on this system of credit intermediation. Some authorities and market participants prefer to use other terms such as “market-based finance” instead of “shadow banking”. The FSB is using the term “shadow banking” as it is the most commonly employed and, in particular, has been used in previous G20 communications.

generally no longer considered key financial stability concerns at the current conjuncture (see Graph 4). Many of the most vulnerable parts of shadow banking activities that contributed to the crisis that spread throughout the global financial system, such as asset-backed commercial paper (ABCP) programmes, structured investment vehicles (SIVs), subprime residential mortgage-backed securities (RMBS), and collateralised debt obligations (CDOs), are no longer conducted at the same scale. Others, such as money market funds (MMFs) and repurchase agreements (repos), have experienced a normalisation from elevated pre-crisis levels, and additional policy measures are being implemented for them. The declines have been attributed to changing risk appetite, rejection of particular products and funding models, and effective policy measures.

US and European structured finance<sup>1</sup>

In trillions of US dollars

Graph 4



<sup>1</sup> Includes securitisation issuance for US and Europe, where available. <sup>2</sup> US Commercial Paper Outstanding. <sup>3</sup> Includes Structured Finance and CLOs. Source: SIFMA.

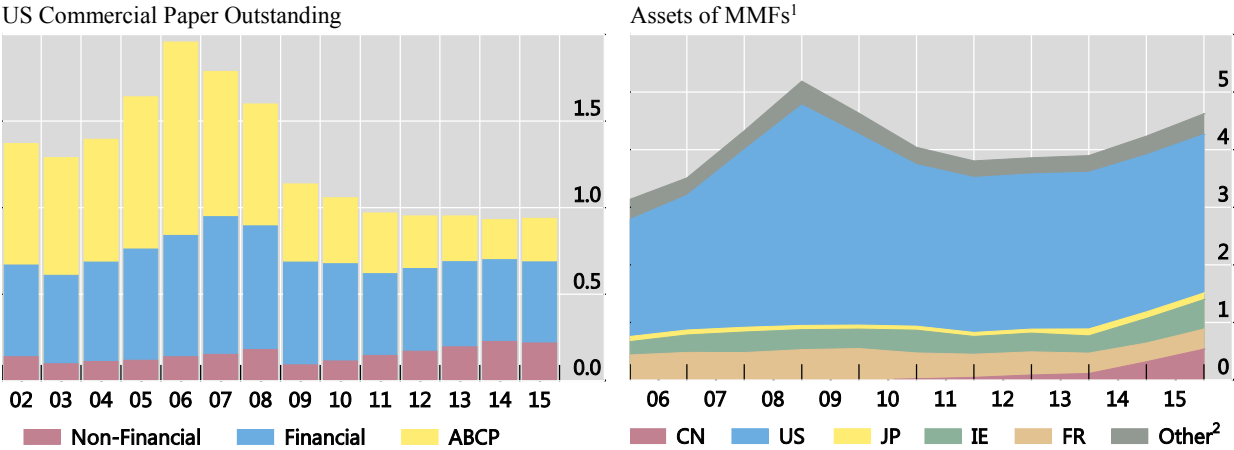
1.1 Commercial paper and MMFs

ABCP programmes contributed to vulnerabilities in the financial system through their reliance on short-term funding to finance less-liquid debt instruments that experienced considerable marked-to-market price declines. After several years of rapid growth prior to the crisis, risks in the assets backing the conduits crystallised, causing a halt in commercial paper funding markets. This added to concerns about banks’ balance sheet exposures and their implicit support to ABCPs. MMFs contributed to vulnerabilities in the financial system because while they invest in short-term debt instruments, shares in MMFs are redeemable on demand and MMFs that seek to maintain a stable net asset value (NAV) can foster an expectation of safety similar to demand deposits. A number of US MMFs experienced losses on holdings of asset-backed securities (ABS) during the crisis and many experienced extreme stress after the large Reserve Fund “broke the buck” following the Lehman bankruptcy in 2008. Disruptions in MMFs quickly spread throughout to short-term funding markets, including for non-US banks. The market dislocation was halted only after the US Treasury and Federal Reserve introduced explicit backstops. Since the crisis, in part due to accounting and regulatory initiatives, the riskiest types of vehicles such as SIVs and credit arbitrage programs have largely been unwound, and the US ABCP outstanding has fallen significantly (Graph 5). Between late 2014

and end-2016, US prime MMF assets fell by about \$1.2 trillion, while US government MMF assets increased by slightly less than \$1.3 trillion.

**Commercial Paper and MMFs**

In trillions of US dollars Graph 5



<sup>1</sup> Exchange rate effects have been netted out by using a constant exchange rate (from 2015). <sup>2</sup> Other = AR, AU, BE, BR, CA, CH, CL, DE, ES, HK, IN, ID, IT, KR, KY, MX, NL, RU, SA, SG, ZA, TR, UK.

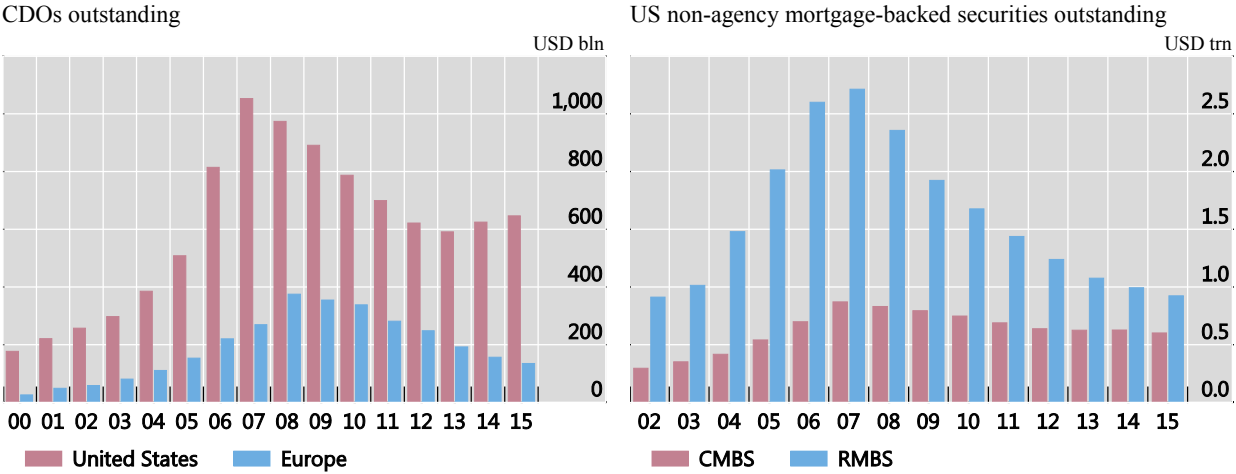
Source: SIMFA, FSB Global Shadow Banking Monitoring Report 2016

**1.2 Subprime mortgage CDOs and subprime RMBS**

Securitisation activity, particularly related to mortgages and housing-related finance, increased rapidly prior to the financial crisis. This growth was particularly brisk in the US, where securitisation permitted issuance of private-label (i.e. non-government-sponsored) mortgage backed securities (see Graph 6).<sup>6</sup> When US subprime loan performance worsened and housing prices declined in 2007, markets for private-label RMBS and hard-to-value CDOs became illiquid and saw valuations decline significantly, which in turn increased repo haircuts on these securities that were collateralised. This contributed to significant marked-to-market and realised losses at banks, broker-dealers, insurance companies, hedge funds and financial guarantors (“monolines”) which raised solvency and liquidity concerns across the financial system.

By early 2009, global banks, insurers, and asset managers had written down over \$200 billion in losses from holdings of CDOs of ABS, or 42% of their crisis-related losses.<sup>7</sup> Since the crisis, elements of shadow banking that suffered from opacity via securitisation (CDOs, ABCPs and SIVs) have all significantly declined in size.<sup>8</sup>

<sup>6</sup> One important element that supported the pre-crisis rise of subprime mortgage CDOs was the contribution of financial guarantors (“monolines”) to guarantee payment on the senior tranches of the CDO structures.  
<sup>7</sup> IMF, “Global Financial Stability Report”, April 2009.  
<sup>8</sup> Beltran, Dan, L. Cordell, and C. Thomas, “Asymmetric Information and the Death of ABS CDOs”, FRB International Finance Discussion Papers, No. 1075, March 2013.



Source: SIFMA.

**1.3 Broker-dealer activities and repos**

Broker-dealers (or investment banks) became highly interconnected intermediaries between a wide range of market participants in the lead up to the financial crisis. Their business models were heavily dependent on short-dated repo transactions and short-term wholesale funding markets.<sup>9</sup>

Prior to the crisis, the repo market for fixed income securities, including securitised products, enabled significant build-up of leverage. During the crisis, concerns about the quality of bonds used as collateral and liquidity in the underlying markets led to increases in repo “haircuts”.<sup>10</sup> Rising collateral calls eventually forced the rapid unwinding of leveraged positions and triggered sharp declines in underlying asset values, which also put significant pressure on financial intermediaries’ solvency.<sup>11</sup> Several large US investment banks failed or merged with banks. In 2008, the surviving largest investment banks were transformed into bank holding companies subject to higher standards of capital and liquidity.

Since the crisis, regulatory measures to reduce the financial system’s dependence on wholesale funding (see Section 2) and a greater risk aversion to leverage have contributed to the reduction of repo funding in the US, Europe and other large financial markets. Broker-dealers’ role in providing leverage, warehousing of risk, and structured products and related derivatives has declined since the crisis.<sup>12</sup> Furthermore, repos of underlying securities with higher-risk of losses, primarily securitised products, have declined significantly. This is particularly the case in the US, where overnight repos declined by over \$1 trillion since the peak of the crisis.

<sup>9</sup> Unlike banks, broker-dealers do not rely on retail customer deposits as a source of funding.  
<sup>10</sup> See [http://www.fsb.org/wp-content/uploads/r\\_141013b.pdf](http://www.fsb.org/wp-content/uploads/r_141013b.pdf); and [http://www.fsb.org/wp-content/uploads/r\\_130829b.pdf](http://www.fsb.org/wp-content/uploads/r_130829b.pdf)  
<sup>11</sup> Gorton G. and A. Metrick, “Securitized Banking and the Run on Repo”, NBER Working Paper No. 15223.  
<sup>12</sup> Overall issuance of structured products has declined, and dealers’ positions in credit default swaps (CDS) have declined gradually from \$30 trillion gross notional in 2008, to \$6 trillion in 2016. See SIFMA CDS outstanding data.

## **2. Key post-crisis policy measures to address financial stability risks from shadow banking**

In response to the G20 Leaders' request at the Seoul Summit in November 2010, the FSB adopted a two-pronged strategy to address financial stability risks from shadow banking that became apparent during the financial crisis. First, it has created a *system-wide oversight framework* where authorities can track developments in the shadow banking system, detect and assess the sources of financial stability risks from shadow banking in a forward-looking manner, and adopt policy responses to address the identified financial stability risks. Second, it has coordinated and developed *policies to address*:

- (i) banks' involvement in shadow banking;
- (ii) liquidity and maturity mismatches as well as build-up of leverage in shadow banking, notably through MMFs, securities financing transactions (SFTs) and OTC derivatives; and
- (iii) incentive problems and opaqueness in shadow banking, notably in securitisation.

The objective has been to ensure that financial stability risks from shadow banking are subject to appropriate monitoring, oversight and regulation, while not inhibiting sustainable non-bank financing models that do not pose such risks. The approach is designed to be proportionate to financial stability risks, focusing on those activities that are material to the system.

### **2.1 Establishment of a system-wide oversight framework for financial stability risks from shadow banking**

Following the crisis, authorities acknowledged the need to establish a systematic process to assess the financial stability risks posed by non-bank financial entities or activities, and ensure that any entities or activities that could pose material risks to financial stability are brought within the regulatory perimeter in a timely manner. The extent of non-bank financial entities' involvement in shadow banking can vary across jurisdictions and should be judged by looking through to their underlying economic functions rather than legal names or forms.

To this end the FSB has been conducting annual monitoring exercises since 2011 where participating authorities collect and share data to assess trends and risks in the shadow banking system.

The most recent 2016 monitoring exercise covered 28 jurisdictions,<sup>13</sup> representing over 80% of global GDP, and its results were published in May 2017 (reflecting data up to end-2015).<sup>14</sup> While all participating jurisdictions are covered in the "macro-mapping" of jurisdictions' financial system, data from China were not received in time to complete an assessment of entities in China for the narrow measure of shadow banking. Improvements to Chinese data collection are currently underway in order to enable Chinese authorities to fully contribute to the 2017 monitoring exercise.

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<sup>13</sup> The exercise covered all 24 FSB member jurisdictions, Belgium, the Cayman Islands, Chile and Ireland.

<sup>14</sup> <http://www.fsb.org/wp-content/uploads/global-shadow-banking-monitoring-report-2016.pdf>.

The FSB also developed, and the G20 Summit at St. Petersburg endorsed, a high-level policy framework for authorities to strengthen oversight of shadow banking (hereafter the Policy Framework).<sup>15</sup> The Policy Framework included overarching principles stating authorities should:

- define, and keep up to date, the regulatory perimeter;
- collect information needed to assess the extent of risks posed by shadow banking;
- enhance disclosure by shadow banking entities as necessary so as to help market participants understand the extent of shadow banking risks posed by such entities; and
- assess their non-bank financial entities based on the economic functions and take necessary actions drawing on tools from the policy toolkit.

The Policy Framework comprises: (i) an assessment based on five economic functions of non-bank financial entities' involvement in non-bank credit intermediation that may pose systemic risks or in regulatory arbitrage;<sup>16</sup> (ii) the adoption of policy tools from a menu of optional policy tools (policy toolkit) if necessary to mitigate financial stability risks; and (iii) information-sharing by FSB members through the FSB process to maintain international consistency in applying the framework, minimise gaps in regulation and detect new adaptations. By focusing on economic functions (or activities) rather than legal forms, this Policy Framework is designed to help authorities to narrow down their focus to the parts of non-bank credit intermediation that are involved in shadow banking, where policy responses may be needed from a financial stability perspective.<sup>17</sup>

FSB members<sup>18</sup> have started implementing the Policy Framework, including an information-sharing exercise as part of FSB's annual monitoring exercise. Jurisdictions' sector balance sheet statistics (i.e. flow of funds), complemented with supervisory and private sector data,<sup>19</sup> are largely used to capture the aggregate level of non-bank financial entity types' assets, including credit assets and loans, and liabilities. In addition, aggregated assets data from 2002 onward for non-bank financial entity types that authorities classified into five economic functions of the FSB Policy Framework (i.e. narrow measure of shadow banking) are collected. Sector-level risk metrics related to liquidity and maturity transformation, leverage and credit risk transfer

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<sup>15</sup> [http://www.financialstabilityboard.org/wp-content/uploads/r\\_130829c.pdf](http://www.financialstabilityboard.org/wp-content/uploads/r_130829c.pdf)

<sup>16</sup> Each of the five economic functions involves non-bank credit intermediation that may pose shadow banking risks (e.g. maturity/liquidity transformation and leverage). They are: (i) management of collective investment vehicles with features that make them susceptible to runs; (ii) loan provision that is dependent on short-term funding; (iii) intermediation of market activities that is dependent on short-term funding or on secured funding of client assets; (iv) facilitation of credit creation; and (v) securitisation-based credit intermediation and funding of financial entities.

<sup>17</sup> The Policy Framework's five economic functions aim to enable authorities to determine whether their non-bank financial entities may pose systemic risk or, in other words, to identify potential sources of systemic risk. The inclusion of non-bank financial entities or activities in the five economic functions does not constitute a judgement that these entities or activities definitively pose systemic risks, or that authorities' regulation of these entities and activities is necessarily inadequate. Rather, it is intended as a means to identify potential sources of systemic risk within and across jurisdictions so that authorities may then assess available policy tools and consider any residual systemic risks.

<sup>18</sup> Non-FSB member jurisdictions that participate in the FSB annual monitoring exercise have also started implementing the Policy Framework.

<sup>19</sup> Some jurisdictions that currently lack sector balance sheet statistics may have used other data sources which may be less consistent across participating jurisdictions.

for classified non-bank financial entity types are derived from sector balance sheet data from national financial accounts statistics, complemented with supervisory and private sector data, that capture subsets of assets, liabilities and equity (e.g. long- and short-term liabilities, liquid and short-term assets, redeemable equity). In this manner, authorities obtain an indication (or proxy) of average sector risks in financial stability risk categories. Interconnectedness between banks and OFIs as well as among non-bank financial sectors (e.g. insurance companies and OFIs) are further assessed through the measurement of assets and liabilities whereby one sector's exposure equates to other sector's funding.<sup>20</sup>

In 2015, the FSB conducted a thematic peer review to evaluate members' progress in implementing the Policy Framework.<sup>21</sup> While some progress has been made, the Peer Review concluded that more work is needed by FSB member jurisdictions to comprehensively assess and respond to potential shadow banking risks posed by non-bank financial entities. To support FSB risk assessments and policy discussions, the Peer Review made recommendations for the further sharing of information among member authorities to monitor and assess shadow banking risks, support the application of appropriate policy tools where necessary to mitigate financial stability risks, and participate effectively in the information-sharing exercise.

## **2.2 Policy measures to address financial stability risks from shadow banking**

Since the financial crisis, policies have been introduced at the international level and both regulatory reforms and new policy tools have been introduced at national/regional levels to address financial stability risks from shadow banking that have materialised to date.

### ***2.2.1 Addressing banks' involvement in shadow banking***

The financial crisis revealed how the regular banking system was both intertwined with and exposed to risks in the shadow banking system. For example, shadow banking often involves explicit or implicit support from banks, which "borrowed trust" from the capital and liquidity resources of banks, and ultimately, banks' backstop mechanisms. Before the crisis, this support allowed some shadow banking entities to expand and transform liquidity/maturity on a scale they would otherwise not have been able to do. Banks also established off-balance sheet shadow banking entities to arbitrage bank capital requirements.<sup>22</sup>

Authorities have taken a variety of steps that have proven effective in reducing banks' exposures to and interconnectedness with shadow banking.

#### ***(i) Enhancement to consolidation rules for off-balance sheet entities***

Accounting standards and bank consolidation rules for off-balance sheet entities were enhanced, and banks now must bring a large proportion of their off-balance sheet special

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<sup>20</sup> Additional information regarding the methodology and data used in the annual monitoring exercise, including information regarding the limitations of data for calculating sector-level risk metrics, is available at <http://www.fsb.org/wp-content/uploads/global-shadow-banking-monitoring-report-2016.pdf>.

<sup>21</sup> <http://www.fsb.org/wp-content/uploads/Shadow-banking-peer-review.pdf>.

<sup>22</sup> The Basel I and II frameworks required little capital (or zero in the case of Basel I) for credit exposures to or liquidity support for banks' off-balance sheet ABCP conduits and other securitisation vehicles compared to holding the underlying assets on their balance sheet. When confidence of external funders in the quality of the assets held in these SPEs deteriorated, sponsoring banks had to step in to support the entities, often taking the underlying assets on to their balance sheet, sometimes resulting in a material reduction in their capital adequacy ratios.



purpose entities' (SPE) assets onto their balance sheets. For example, in the US where most of the securitisation took place, banks conducted these activities in off-balance sheet SPEs. In 2009, the US Financial Accounting Standards Board modified its accounting standards, requiring sponsoring institutions to bring many securitisation vehicles and other SPEs onto their balance sheet. As a result of this change, the scope of prudential consolidation was expanded to require banks that sponsor a wide range of securitisation vehicles and other SPEs to hold regulatory capital against the assets of the vehicle/SPE. Meanwhile, in China, after observing a rise in banks' use of trust companies to market as wealth management products loans to or securities issued by sectors to which bank credit was restricted, the China Banking Regulatory Commission in 2010 required banks to bring all business with trust companies onto their balance sheets. This reduced the incentive for banks to issue bank-trust company Wealth Management Products, though new forms of such products involving cooperation between banks and other financial entities appear to have arisen.<sup>23</sup>

At the international level, the BCBS, based on a recommendation by the FSB, is currently developing additional guidance to improve the international consistency of the scope of consolidation used for bank regulatory purposes.<sup>24</sup>

*(ii) Enhancement to bank prudential regulation*

Bank prudential rules (i.e. Basel II.5/III) have been enhanced to ensure banks' exposures to shadow banking are adequately captured.<sup>25</sup> The Basel III framework has several features that have raised capital requirements for banks' exposure to shadow banking entities, including higher risk-weights for exposures to unregulated financial entities, risk-sensitive capital requirements for banks' investments in the equity of funds, and a standard for measuring and controlling large exposures. BCBS members started implementing the Basel III framework in January 2013 and it will be fully effective in January 2019.<sup>26</sup> The combined effect of these measures has been to materially raise and make appropriately risk sensitive banks' capital protections from exposures to shadow banking entities, and has reversed the pre-crisis trend of growing interconnectedness between the banking and shadow banking systems.

Indeed, the interconnectedness between banks and other financial intermediaries (OFIs)<sup>27</sup> has gradually declined since the crisis peak, due in part to less reliance on wholesale funding

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<sup>23</sup> See, for example, <https://www.rba.gov.au/publications/bulletin/2015/jun/pdf/bu-0615-7.pdf>, and Sheng, A, and N C Soon, "Shadow Banking in China", Wiley, 2016.

<sup>24</sup> The BCBS published in March 2017 a second consultative document on the possible ways to capture the risk of banks stepping in to provide financial support to non-bank financial entities beyond, or in the absence of, its contractual obligations should the entities experience financial stress (i.e. step-in risk). See <http://www.bis.org/bcbs/publ/d398.pdf>.

<sup>25</sup> For example, in July 2009, the BCBS agreed Basel II.5, which raised capital requirements for banks' liquidity facilities to securitisation vehicles, as well as for banks' exposures to complex securitisations. This closed several sources of active arbitrage by banks in the run-up to the crisis. The Basel III framework published in December 2010 also raised the quality and overall levels of bank capital requirements, and introduced a new global liquidity framework.

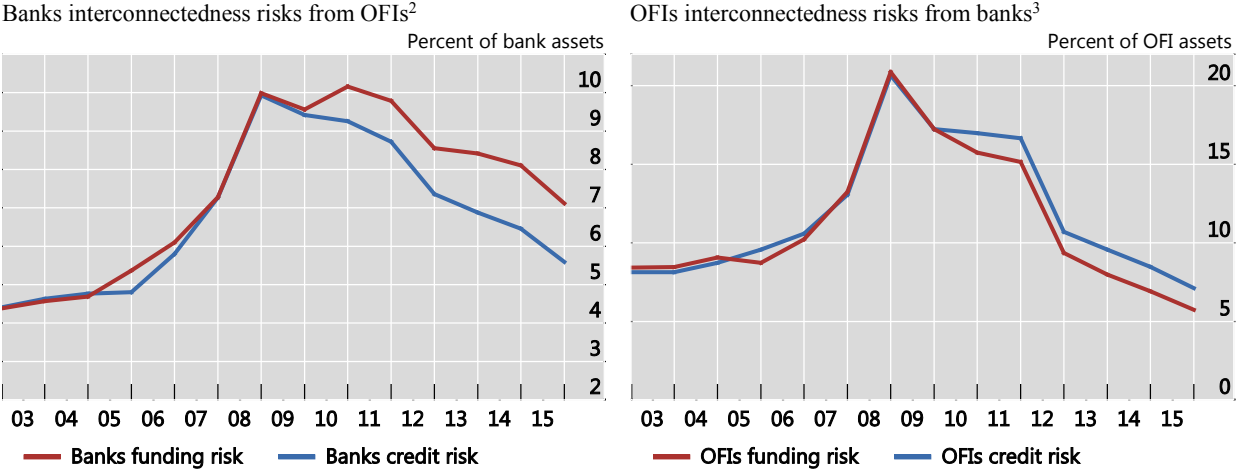
<sup>26</sup> Since the publication, the Basel III framework has been going through refinements and now include: risk-sensitive capital requirements for equity investments in funds (implementation by January 2017); revised securitisation framework (January 2018); margin requirements for non-centrally cleared derivatives (September 2016); leverage ratio framework; liquidity coverage ratio (January 2019); and net stable funding ratio standard (January 2018). The BCBS is now working to finalise its refinement to calibration of risk-weighted assets.

<sup>27</sup> Other financial intermediaries (OFIs) are comprised of all financial institutions that are not classified as banks, insurance corporations, pension funds, public financial institutions, central banks, or financial auxiliaries.

markets, lower bank interconnectedness to securitised products and ABCP conduits, and Basel II.5 and III regulatory reforms (Graph 7). Nevertheless the bank interconnectedness still remains higher than the pre-crisis level, due in part to continued interconnectedness with MMFs, investment funds, and broker-dealers for funding.<sup>28</sup>

**Interconnectedness between banks and OFIs**

18 jurisdictions and the euro area<sup>1</sup> Graph 7



<sup>1</sup> Based on historical data included in jurisdictions’ 2016 submissions. Changes in interconnectedness measures in 2011 and 2012 may also reflect improvements in the availability of data over time on a jurisdiction level. Exchange rate effects have been netted out by using a constant exchange rate (from 2015). <sup>2</sup> Banks funding risk = Banks’ liabilities to OFIs as a share of bank assets. Banks credit risk = Banks’ claims on OFIs as a share of bank assets. <sup>3</sup> OFIs funding risk = OFIs’ liabilities to banks as a share of OFI assets. OFIs credit risk = OFIs’ claims on banks as a share of OFI assets.

Sources: FSB Global Shadow Banking Monitoring Report 2016

**2.2.2 Addressing liquidity and maturity mismatches as well as build-up of leverage in shadow banking**

Leverage, and both liquidity and maturity transformation in the shadow banking system can create vulnerability to “runs” and asset fire sales that can generate contagion risks to the wider financial system. These vulnerabilities, if unattended, can also heighten procyclicality by accelerating credit supply and asset price increases during surges in confidence, while making precipitous falls in asset prices and credit contraction more likely by creating credit channels vulnerable to sudden loss if confidence in the system is lost.

Since the crisis, authorities have taken a variety of steps to reduce liquidity and maturity mismatches, as well as leverage in shadow banking.

*(i) Mitigating susceptibility of MMFs to “runs”*

Regulatory reforms of MMFs are progressing to address liquidity/maturity mismatches and improve their ability to respond to heavy redemptions. In light of the recommendation from the

<sup>28</sup> In some cases, post-crisis policy measures may maintain or increase the interconnectedness between banks and OFIs. For example, retention requirements for banks’ securitisation activities may maintain or increase banks’ interconnectedness with securitisation vehicles, and thus OFIs.

FSB in October 2011,<sup>29</sup> IOSCO issued policy recommendations in October 2012 that provided the basis for common standards of regulation and management of MMFs across jurisdictions, including a recommendation that regulators should require, where workable, a conversion of MMFs with stable NAV to floating NAV.<sup>30</sup> Alternatively, safeguards should be introduced to reinforce stable NAV MMFs' resilience and ability to face significant redemptions. The FSB endorsed this recommendation, noting that where such conversion was not workable, the safeguards required to reinforce stable NAV MMFs' resilience to runs should be functionally equivalent to the capital, liquidity, and other prudential requirements that protect banks against runs on their deposits.<sup>31</sup>

In the US, which has the largest MMF market, the Securities and Exchange Commission (SEC) adopted initial rules in 2010 to increase the resilience of MMFs to economic stresses and reduce the risks of runs on the funds by tightening the maturity and credit quality standards and imposing new liquidity requirements. The SEC adopted further amendments to the rules that govern MMFs in July 2014. The 2014 rules require a floating NAV for "prime MMFs" (i.e. MMFs that invest in assets other than US government securities) that are marketed to institutional investors, and provide boards of all MMFs with new tools, including liquidity fees and redemption gates, to manage redemption pressures.

In the EU, the home to three (Luxembourg, France, Ireland) of the five largest MMF markets, a new regulatory framework for MMFs has been established to ban the sponsor support and the limitation on the use of stable NAV redemption prices to specific types of funds that will be subject to mandatory liquidity requirements.<sup>32</sup> The new Regulation is expected to be published by mid-2017.

IOSCO has stated that further work is needed internationally in relation to MMFs that offer a stable NAV. 12 among 31 IOSCO member jurisdictions (including the 24 FSB member jurisdictions) continue to permit stable NAV MMFs, including four of the five jurisdictions with the largest MMF markets (China, Ireland, Luxembourg and the US), and have generally chosen to implement measures aimed at reinforcing a stable NAV MMF's resilience and ability to face significant redemptions.<sup>33</sup>

*(ii) Improvement to structural aspects of securities financing markets*

Improvement of securities financing market infrastructure, such as multilateral netting, robust collateral valuation and management processes, can reduce financial stability risks associated with securities financing transactions (SFTs). The FSB recommended in August 2013 that its member authorities evaluate by January 2016 the costs and benefits of introducing central

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<sup>29</sup> [http://www.fsb.org/wp-content/uploads/r\\_111027a.pdf](http://www.fsb.org/wp-content/uploads/r_111027a.pdf)

<sup>30</sup> <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD392.pdf>

<sup>31</sup> [http://www.fsb.org/wp-content/uploads/r\\_121118.pdf](http://www.fsb.org/wp-content/uploads/r_121118.pdf)

<sup>32</sup> They are public debt Constant NAV (CNAV) MMFs and the so-called Low Volatility NAV (LVNAV) MMFs. For these types of funds, liquidation, liquidity fees and gates can be imposed whenever the proportion of the funds' weekly maturing assets falls below a certain threshold. Additional specific safeguards exist for LVNAV MMFs. For details, see <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2017-0109+0+DOC+XML+V0//EN&language=EN>.

<sup>33</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD502.pdf>

counterparties (CCPs) in their inter-dealer repo markets where CCPs do not exist.<sup>34</sup> Where CCPs exist, authorities were asked to consider the pros and cons of broadening participation, in particular to include important funding providers in the repo market.

In the US, a particular focus of authorities has been to address weaknesses in the tri-party repo market infrastructure. The ongoing reform efforts in the US, which ultimately also involved the supervision of the two key tri-party service providers, have substantially ameliorated the potential financial stability risks associated with the tri-party repo market infrastructure. For example, the share of tri-party repo volume that is financed with intraday credit from a clearing bank has dropped markedly in the last several years, from 100% as recently as 2012, to a level averaging 3 to 5% in 2015 (as compared with the original target of no more than 10%).

*(iii) Reducing liquidity and maturity transformation through securities financing transactions*

The FSB published policy recommendations to address financial stability risks associated with SFTs in August 2013, which included recommendations for enhanced transparency, enhanced prudential regulation, and improvement of market structure.<sup>35</sup> Some of the recommendations focus on specific requirements to limit liquidity and maturity transformation through SFTs. For example, the minimum standards for cash collateral reinvestment by securities lenders or their agents ask authorities to set specific requirements for the cash collateral reinvestment portfolio and/or liquidity pool maintained to meet cash collateral recalls by securities borrowers. Similarly, the principles for regulations governing re-hypothecation of client assets asks jurisdictions to allow only entities subject to adequate regulation of liquidity risk to engage in the re-hypothecation of client assets.

These recommendations were to be implemented by January 2017. Preliminary findings from the recent stock-taking exercise of national implementation status suggest variances in the progress across FSB member jurisdictions and across recommendations, partly reflecting how actively SFTs are used by market participants in the relevant jurisdictions.

*(iv) Limiting build-up of leverage through securities financing transactions*

To constrain the procyclical build-up of leverage through SFTs in non-bank financial entities, the FSB developed a regulatory framework for haircuts on non-centrally cleared SFTs in October 2014 (and updated in November 2015).<sup>36</sup> The framework for haircuts includes: (i) qualitative standards for methodologies to be used by market participants to calculate haircuts; and (ii) a framework of numerical haircut floors in cases where financing is provided to non-banks against collateral other than government securities (i.e. bank-to-non-bank and non-bank-to-non-bank transactions). The numerical haircut floors set upper limits on the amount that non-banks can borrow against different categories of securities. The framework for haircuts therefore aims to limit the build-up of excessive leverage outside the banking system, reduce the procyclicality of that leverage, reduce the risk of regulatory arbitrage, and maintain a level-playing field.

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<sup>34</sup> [http://www.fsb.org/wp-content/uploads/r\\_130829b.pdf](http://www.fsb.org/wp-content/uploads/r_130829b.pdf)

<sup>35</sup> [http://www.fsb.org/wp-content/uploads/r\\_130829b.pdf](http://www.fsb.org/wp-content/uploads/r_130829b.pdf)

<sup>36</sup> [http://www.fsb.org/wp-content/uploads/SFT\\_haircuts\\_framework.pdf](http://www.fsb.org/wp-content/uploads/SFT_haircuts_framework.pdf)

The implementation approach of the framework for haircuts takes into account differences in the development stage of SFT markets across jurisdictions. To support consistent implementation, however, the FSB members have agreed detailed guidance for authorities and enhanced implementation monitoring. The implementation date is set as the end of 2018 to allow sufficient time for member jurisdictions to implement the framework.

In November 2015, the BCBS issued a consultative document to incorporate the numerical haircut floors into the Basel III framework.<sup>37</sup> This will cover bank-to-non-bank transactions in jurisdictions that are not implementing the floors through market regulation that applies to transactions between all counterparties. The BCBS is now working to finalise quantitative standards to give effect to the numerical haircut floors.

(v) *Addressing excessive build-up of leverage through OTC derivatives*<sup>38</sup>

Some elements of the OTC derivatives reform can be expected to help reduce the potential for uncollateralised exposures arising through the use of OTC derivatives by non-banks. At the September 2009 Pittsburgh Summit, the G20 Leaders committed to reform OTC derivatives through:

- Reporting of all OTC derivatives transactions to trade repositories;
- Clearing of all standardised OTC derivatives through CCPs;
- Execution of all standardised OTC derivatives on exchanges or electronic trading platforms, where appropriate; and
- Subjecting non-centrally cleared derivatives contracts to higher capital requirements.

In 2011, the G20 added to the reform agenda margin requirements on non-centrally cleared derivative transactions.

Margin requirements (for non-centrally cleared derivatives and derivatives cleared on CCPs) can be expected to help reduce the potential for uncollateralised exposures arising through the use of OTC derivatives by non-bank financial entities. Meanwhile, enhanced reporting through trade repositories has improved the post-trade transparency of the OTC derivatives markets to those authorities that have access to trade repository data and may enable such authorities to monitor the use of such derivatives by non-banks.

(vi) *Limiting leverage through applying prudential regulation/supervision*

Large parts of the pre-crisis US shadow banking system have since been subject to limits on leverage as well as on liquidity/maturity mismatches through the prudential regulation that applies to US bank holding companies, including risk-based capital requirements, leverage requirements, liquidity requirements and supervision that apply on a consolidated basis. In addition, the US Financial Stability Oversight Council introduced in 2012 a process and criteria for designating and subjecting individual non-bank financial institutions that could pose a threat to US financial stability to enhanced prudential standards and consolidated supervision by the Federal Reserve.

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<sup>37</sup> <http://www.bis.org/bcbs/publ/d340.pdf>

<sup>38</sup> For details of regulatory reform in relation to OTC derivatives, see for example <http://www.fsb.org/wp-content/uploads/OTC-Derivatives-Market-Reforms-Eleventh-Progress-Report.pdf>.

At the international level, the FSB and IOSCO have developed proposed assessment methodologies for identifying non-bank non-insurer global systemically important financial institutions (NBNI G-SIFIs). The proposed methodologies comprise a high-level framework and an operational framework for identifying G-SIFIs that would apply across all NBNI financial entities.<sup>39</sup> They rely on detailed analysis conducted primarily by national authorities, supplemented by home-host supervisory information-sharing and international coordination through the FSB process. FSB and IOSCO will re-visit the proposed methodologies after IOSCO completes its work to operationalise the FSB recommendations to address asset management structural vulnerabilities, with a focus on any residual entity-based sources of systemic risk from distress or disorderly failure that cannot be effectively addressed by market-wide activities-based policies.

### ***2.2.3 Addressing incentive problems and opaqueness associated with shadow banking***

In the run-up to the crisis, misaligned incentives from securitisation weakened lending standards in the credit origination process, while securitisation structures grew increasingly opaque, hiding growing amounts of leverage and maturity/liquidity mismatching in their funding. Opaqueness associated with securitisation structures also facilitated mispricing of risks by investors. Information asymmetry and mispricing of risks were also amplified by problems associated with credit ratings by some credit rating agencies (CRAs).

A series of national/regional and international reforms have been undertaken to address incentive problems and opaqueness associated with securitisation in the aftermath of the crisis, alongside more appropriate capitalisation of banks' securitisation-related exposures (as explained in Section 2.1.1).

#### *(i) Improving disclosures and facilitating standardisation of securitisation*

Enhancements of transparency and standardisation of securitisation products seek to reduce the opaqueness and complexity associated with such products, and to enable market discipline (e.g. assessment by investors) to function properly. At the international level, IOSCO published recommendations on enhancing securitisation practices in September 2009,<sup>40</sup> and also published disclosure principles for public offerings and listings of ABS in April 2010.<sup>41</sup> In addition, IOSCO issued policy recommendations related to transparency, standardisation and incentive alignment in November 2012.<sup>42</sup> National/regional measures also contributed to greater transparency,<sup>43</sup> including collateral eligibility rules at national/regional central banks that asked for loan-level data and reporting of information in a standardised format.

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<sup>39</sup> <http://www.fsb.org/wp-content/uploads/2nd-Con-Doc-on-NBNI-G-SIFI-methodologies.pdf>.

<sup>40</sup> <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD301.pdf>

<sup>41</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD318.pdf>. Separately, in 2008, the FSB (then Financial Stability Forum) strongly encouraged financial institutions to make robust risk disclosures of their securitisation related exposures using the leading disclosure practices it recommended, and at the time of their mid-year 2008 reports. As part of Basel II.5, the BCBS also strengthened disclosure requirements for banks' securitisation exposures in the trading book; sponsorship of off-balance sheet vehicles; re-securitisation exposures; and pipeline and warehousing risks.

<sup>42</sup> <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD394.pdf>

<sup>43</sup> For example, in the US, in 2014, the SEC adopted new disclosure requirements on ABS (Regulation AB II) to enhance transparency and better protect investors in publicly offered ABS transactions. The new rules required loan-level disclosure in standardised tagged data format for certain asset classes, revised the eligibility criteria for using an expedited offering

In addition, authorities have taken steps to encourage standardisation of securitisations to reduce their complexity and enable a resumption of sound securitisation that would serve sustainable economic growth. For example, the BCBS and IOSCO published criteria for identifying simple, transparent and comparable securitisations in July 2015,<sup>44</sup> to assist in the financial industry’s development of simple and transparent securitisation structures. The BCBS and IOSCO are currently working with market participants to encourage standardisation of documentation associated with securitisation. While disclosure practices associated with securitisation have considerably improved, efforts to standardise securitisation will likely take time to have actual impact on securitisation activities.

*(ii) Addressing incentive problems in securitisation through retention requirements*

Retention requirements are designed to align the incentives among originator (or issuer) of a securitisation and its investors by requiring the former to retain a minimum level of ownership of the securitised assets (so-called “skin in the game”). In the EU, retention rules were put in place in January 2011 (and subsequently revised in 2014) which allowed investor financial institutions to assume exposure to a securitisation only if the originator, sponsor, or original lender has explicitly disclosed to the institution that it will retain, on an ongoing basis, a material net economic interest of no less than 5%. In the US, the risk retention rules have required securitisers (i.e. originators or sponsors) to retain an economic interest in an amount not less than 5% of the aggregate credit risk of the assets collateralising an issuance since December 2015 for securitisation transactions backed by residential mortgage loans, and since December 2016 for all other ABS.

While progress has been made in the EU and US, which have the largest securitisation markets, not all jurisdictions have implemented retention requirements, according to IOSCO.<sup>45</sup>

*(iii) Addressing incentive problems in securitisation by enhancing the rating process*

To address potential conflicts of interest associated with CRA ratings and increase the reliability of their credit ratings, oversight of CRAs’ ratings process has been enhanced. The IOSCO Code of Conduct Fundamentals for Credit Rating Agencies (IOSCO Code of Conduct) was revised in May 2008 and updated in 2015.<sup>46</sup> Under the 2015 Code, a CRA should indicate the nature and limitations of each credit rating, and the extent to which the CRA verifies information provided to it. In addition, it called for CRAs rating structured products (including securitisation products) to provide more information about their analysis to allow investors to understand the basis for the rating.

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process known as “shelf offerings,” and required expanded disclosure about transaction parties, including the sponsor’s retained interest. Regulation AB increased the reporting cost related to ABS issuance, but contributed to improving the transparency of newly issued ABS for investors and are aimed at reducing reliance on credit ratings.

<sup>44</sup> <http://www.bis.org/bcbs/publ/d332.pdf>

<sup>45</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD504.pdf>. IOSCO plans to conduct a further level one peer review for jurisdictions that had not yet fully implemented measures, and a level two peer review that should commence no earlier than mid-2016. IOSCO is yet to undertake these follow-up initiatives due to additional reforms being adopted in major jurisdictions.

<sup>46</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD271.pdf>

Efforts have also been made to reduce reliance on CRA ratings by regulated financial institutions. The FSB published high-level principles to reduce mechanistic reliance on CRA ratings in October 2010, asking standard-setting bodies (SSBs) and authorities to follow up by defining the more specific actions that will be needed to implement the changes. Most FSB member jurisdictions and SSBs have taken steps to reduce reliance on CRAs in their laws and regulations.<sup>47</sup> However, some elements of the Basel III capital rules still use CRA ratings.<sup>48</sup>

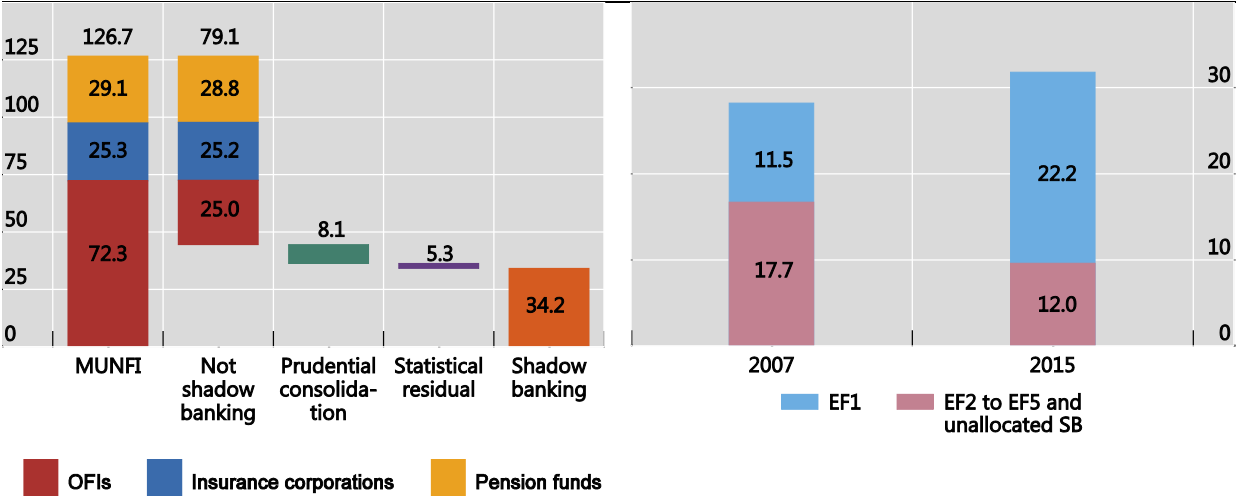
### 3. Evolution of shadow banking since the financial crisis

The FSB’s annual shadow banking monitoring exercise assesses all non-bank financial intermediation, from which it narrows its focus to entities and activities that may pose financial stability risks from shadow banking and thus may warrant policy responses. The approach is based on the FSB’s Policy Framework described in Section 2.1. The recent monitoring results indicate that **since the crisis, some other elements of shadow banking have grown and remain relatively large**, such as collective investment vehicles with features that make them susceptible to runs, while others, such as broker dealers’ market-based intermediation and securitisation, has declined somewhat since the crisis (right chart of Graph 8).

#### Narrowing down shadow banking

27 jurisdictions at end-2015, in trillions of US dollars

Graph 8



MUNFI = Monitoring Universe of Non-bank Financial Intermediation, includes OFIs, pension funds, and insurance companies; OFIs also includes captive financial institutions and money lenders; Prudential consolidation into banking groups = assets of classified entity types which are prudentially consolidated into a banking group; Statistical residual = reported residual OFIs generated by the difference between total OFIs and the sum of all known subsectors therein; Shadow banking = shadow banking based on the economic functions; EF = Economic Function; Unallocated SB = assets of entities that were assessed to be involved in shadow banking activities, but which could not be assigned to a specific economic function. Increases in the value of EFs may also reflect improvements in the availability of data over time. Totals might not sum up due to rounding.

Source: FSB Global Shadow Banking Monitoring Report 2016.

<sup>47</sup> The FSB undertook thematic peer review to assist national authorities in fulfilling their commitments in relation to the principles to reduce mechanistic reliance on CRA ratings. For details, see [http://www.fsb.org/2014/05/r\\_140512/](http://www.fsb.org/2014/05/r_140512/).

<sup>48</sup> <http://www.bis.org/bcbs/publ/d374.pdf>



### 3.1 The narrow measure of shadow banking<sup>49</sup>

The FSB’s narrow measure of shadow banking is based on defined economic functions, or activities, that can give rise to financial stability risks from shadow banking. To arrive at this measure, non-bank financial entities are classified into five economic functions (EFs), each of which involves non-bank credit intermediation that may pose financial stability risks from shadow banking. The entity types typically classified into the economic functions include: collective investment vehicles or funds that are susceptible to investor runs (EF1); finance companies whose lending is dependent on short-term funding (EF2); market intermediaries dependent on short-term funding or secured funding of client assets (EF3); insurers that facilitate credit creation (EF4); and securitisation-based credit intermediation vehicles (EF5).

Graph 5 (left chart) illustrates the relationship between the measure of all non-bank financial intermediation (“Monitoring Universe of Non-bank Financial Intermediation or “MUNFI”),<sup>50</sup> and the economic functions-based narrow measure of shadow banking. While the extent of narrowing down varies across jurisdictions, the aggregate narrow measure of shadow banking that may pose financial stability risks was \$34 trillion at end-2015. This amounted to 70% of GDP in the reporting jurisdictions.<sup>51</sup>

### 3.2 Management of collective investment vehicles with run risk (Economic Function 1)

Assets of collective investment vehicles (CIVs) features that make them susceptible to runs constitute about two-thirds of the narrow measure (\$22 trillion at end-2015). While the growth rate of assets of entities classified into EF1 has moderated in the last three years, it continues to contribute to a growing share of assets in the total narrow measure of shadow banking (Graph 9).

The types of entities judged to be involved in the management of CIVs with features which make them susceptible to runs include: fixed income and mixed investment funds (over 50% of total assets classified as EF1 at end-2015), MMFs and credit hedge funds. Some jurisdictions also classified real estate funds, fund of funds, and ETFs into EF1.<sup>52</sup>

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<sup>49</sup> Graphs in this Section are based on the FSB’s 2016 shadow banking monitoring exercise data from 27 jurisdictions: Argentina, Australia, Belgium, Brazil, Canada, Cayman Islands, Chile, France, Germany, Hong Kong, Indonesia, India, Ireland, Italy, Japan, Korea, Mexico, Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Switzerland, Turkey, UK, and US. For details, see <http://www.fsb.org/wp-content/uploads/global-shadow-banking-monitoring-report-2016.pdf>.

<sup>50</sup> MUNFI is a measure of all non-bank financial intermediation, which is comprised of OFIs, insurance companies and pension funds. It provides the starting point for authorities’ assessment of their non-bank financial entity types’ involvement in shadow banking.

<sup>51</sup> The inclusion of non-bank financial entities or activities in the narrow measure is based on a conservative assessment of the potential risks they may pose during stressed events on a pre-mitigant basis (i.e. assuming policy measures and/or risk management tools are not exercised). As a result, the narrow measure may overestimate the degree to which non-bank credit intermediation currently gives rise to post-mitigant financial stability risks.

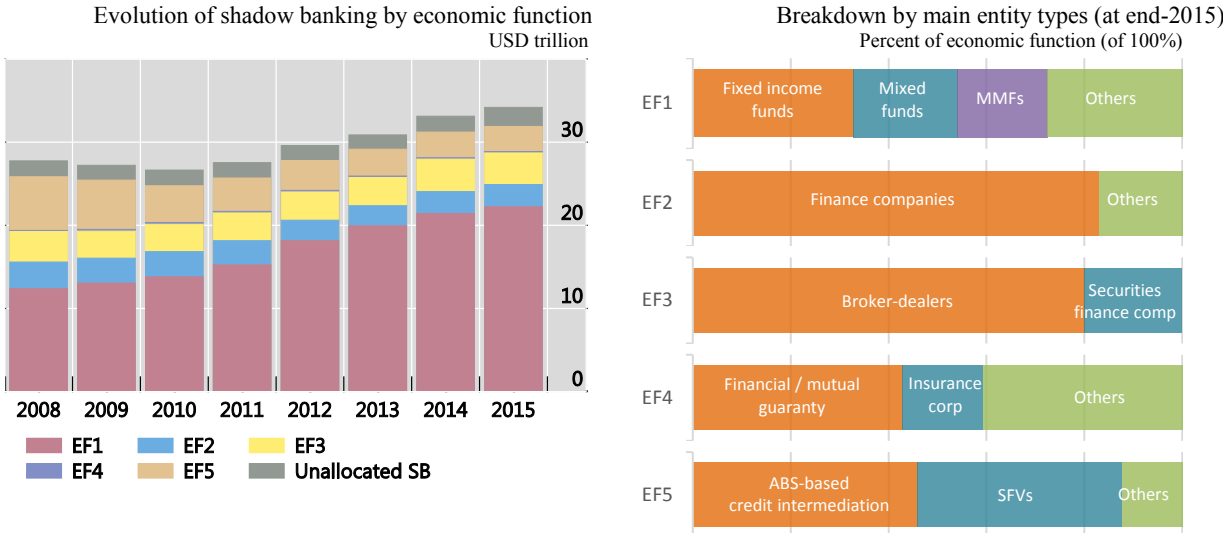
<sup>52</sup> Mixed funds holding a mix of equity and credit assets were classified into EF1 based on their holdings of equities / credit assets. Funds holding 80% or more of their assets under management (AUM) in equities were considered not to be involved in credit intermediation and jurisdictions did not classify such funds into EF1. The remaining mixed funds were classified into EF1. Similarly, fund of funds, real estate funds, ETFs, etc. whose AUMs are invested primarily in equity or equity

The FSB’s annual shadow banking monitoring exercise seeks to capture financial stability risks from shadow banking: maturity transformation, liquidity transformation, imperfect credit risk transfer, and leverage. Some jurisdictions continue to face significant challenges collecting these risk data.<sup>53</sup>

Shadow banking decomposition

27 jurisdictions

Graph 9



Increases in the value of EFs may also reflect improvements in the availability of data over time. Exchange rate effects have been netted out by using a constant exchange rate (from 2015). EF1 = Economic function 1; EF2 = Economic function 2; EF3 = Economic function 3; EF4 = Economic function 4; EF5 = Economic function 5; Unallocated SB = assets of entities that were assessed to be involved in shadow banking activities, but which could not be assigned to a specific economic function.

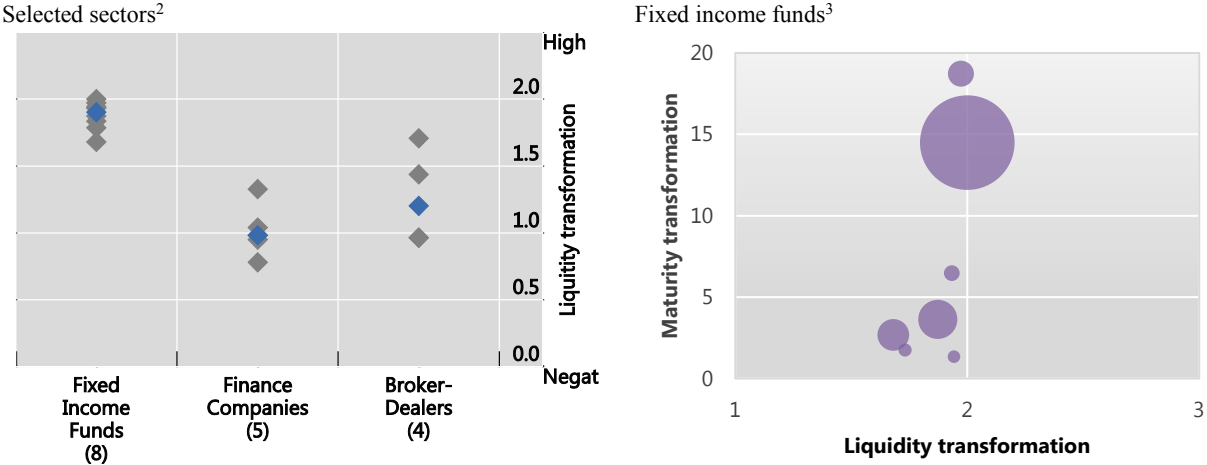
Source: Global Shadow Banking Monitoring Report 2016.

In some circumstances, CIVs engaged in credit intermediation that involves maturity and liquidity transformation and/or leverage may be susceptible to runs. Although the data reported to calculate liquidity transformation was relatively limited, liquidity transformation tends to be high for fixed income funds in some jurisdictions with short-term liabilities and short-term redeemable equity in excess of liquid assets. As can be seen in Graph 10, some jurisdictions’ funds have a combination of high liquidity and maturity transformation.<sup>54</sup> To the extent that the portfolios have higher duration risk, an abrupt rise in rates would impose greater marked-to-market losses and diminish fund returns, which in some circumstances could result in large investor outflows and greater potential for forced asset sales.

related instruments were not classified into EF1. MMFs were classified into EF1 based on their susceptibility to runs. Closed-ended funds were generally not classified into EF1 unless they were leveraged.

<sup>53</sup> Due to these data limitations, some of the results presented below come from a subsample of jurisdictions and may therefore not be extrapolated to describe the entire sample of jurisdictions. Conclusions from the data related to the subsample may not apply to all of the jurisdictions that participated in the monitoring exercise. However, to the extent possible, this assessment discusses broad messages, findings, and trends that can be gleaned from the reported data. For additional information on the assessment using these risk metrics, see <http://www.fsb.org/wp-content/uploads/global-shadow-banking-monitoring-report-2016.pdf>.

<sup>54</sup> There are differences across jurisdictions in the inputs to the maturity transformation risk metrics for some of the entity types classified into EF1. Such potential inconsistencies will need to be addressed in future monitoring exercises to obtain more meaningful cross-jurisdictional comparisons of the risk metrics.



◆ Median 2015

<sup>1</sup> Liquidity transformation = (total financial assets [AUM] – liquid assets + short-term liabilities + redeemable equity) / total financial assets [AUM]. Maturity Transformation = (short-term liabilities + redeemable equity) / short-term assets. <sup>2</sup> Number of submission in parentheses. One jurisdiction’s data submission represents data collected by authorities on individual entities within that jurisdiction, which is a much larger sample set. <sup>3</sup> Size of bubble denotes the sector’s absolute size.

Source: FSB Global Shadow Banking Monitoring Report 2016.

In sum, the considerable growth of EF1, based on fixed income and mixed investment funds, credit hedge funds and MMFs, has been accompanied by a combination of relatively higher credit risk, as well as liquidity and maturity transformation, and, in some jurisdictions that reported hedge funds, relatively high levels of leverage. While policy tools have been created to convert a portion of MMFs into floating NAV products, there is still some concern that they are prone to run risk in the event of unexpected losses. Also, the strong growth of fixed income funds, particularly higher yielding credit funds, is one of the important areas in which elevated risks in times of market stress could contribute to spillovers throughout the financial system, which warrants enhanced risk monitoring. For this reason, in January 2017, the FSB developed policy recommendations to address structural vulnerabilities from asset management activities which are being operationalised by IOSCO for authorities to implement in their respective jurisdictions (see Section 4.1).

**3.3 Loan provision dependent on short-term funding (Economic Function 2)**

Entities that are dependent on short-term funding to provide lending engage in a wide range of activities including consumer finance, auto finance, retail mortgage, commercial property finance, and equipment finance. EF2 constituted 8% of total shadow banking assets or \$2.7 trillion. Growth rates for finance companies tended to be slightly higher in jurisdictions where these companies were a larger share of the overall financial system. Of the entity types classified into EF2, finance companies made up the largest share of the economic function at over 80% (Graph 9).

While EF2 assets have declined somewhat since the crisis, it remains large and is growing briskly in some jurisdictions. In at least some jurisdictions, finance companies on average tend to have relatively high leverage and maturity transformation, which makes them relatively more

susceptible to rollover risk during periods of market stress. This suggests that this economic function may merit more scrutiny by some authorities.

### **3.4 Intermediation of market activities dependent on short-term funding (Economic Function 3)**

Intermediation of market activities that are dependent on short-term funding can take various forms, including secured funding of client assets as well as securities borrowing and lending. The size of EF3 dropped from its peak of \$7.4 trillion in 2007 and, net of prudentially-consolidated entities, grew from \$3.2 trillion in 2009 to \$3.8 trillion in 2015 (Graph 9), and now represents 11% of shadow banking assets. EF3 continues to be dominated by entities from several jurisdictions.<sup>55</sup>

Broker-dealers are the most prevalent entity type reported in this economic function. Many of the larger broker-dealers have been consolidated into banking groups (e.g. bank-holding companies) after the financial crisis, and are indirectly subject to prudential regulation.<sup>56</sup> This prudential consolidation caused a significant reduction in the size of EF3 (by about 60%), and accounts, in part, for the large decline in EF3 assets since 2007. The decline may also be attributable to regulatory/supervisory changes leading to the increased use of leverage-based capital requirements at the parent bank or bank holding company that indirectly apply to broker-dealer subsidiaries.

Broker-dealers are generally active in repos and other wholesale funding transactions where they may engage in significant leverage and maturity transformation, and in some cases their level of interconnectedness may be relatively high. The build-up of leverage and maturity transformation<sup>57</sup> within these entities can amplify risks through counterparty exposures. These risks can expose financial institutions and market participants to disruption when confidence evaporates and the value of collateral securities falls and margins/haircuts are increased, leading potentially to abrupt deleveraging and asset fire sales. Graph 11 shows the range of maturity transformation and leverage across jurisdictions, which suggests that business models and risk tolerance varies considerably.<sup>58</sup> While there are a range of policy tools available to address financial stability risks associated with such broker-dealer activities, regulatory regimes vary considerably.

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<sup>55</sup> In 2015, the top four jurisdictions by financial assets captured more than 90% of the total size (US, Japan, Korea, and UK).

<sup>56</sup> Some smaller or regional broker-dealers are also part of prudentially-regulated bank holding companies. All broker-dealers are generally subject to stand-alone regulation, which may include prudential regulation considered similar to Basel regulatory framework for banks or other liquid net capital requirements.

<sup>57</sup> Maturity transformation can lead to runs when short-term funding dependence occurs in the form of material use of short-term liabilities to fund long-term assets.

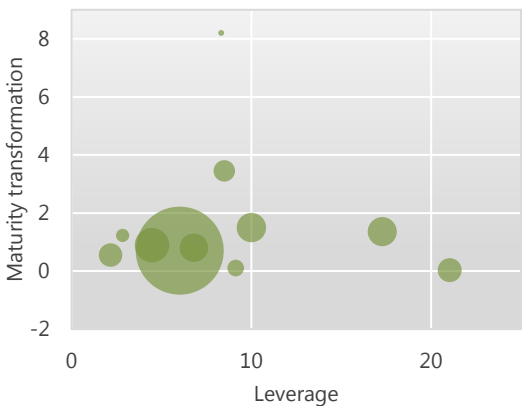
<sup>58</sup> Furthermore, their derivatives activities may lead to additional counterparty and collateral risks.

# Maturity transformation and leverage<sup>1</sup>

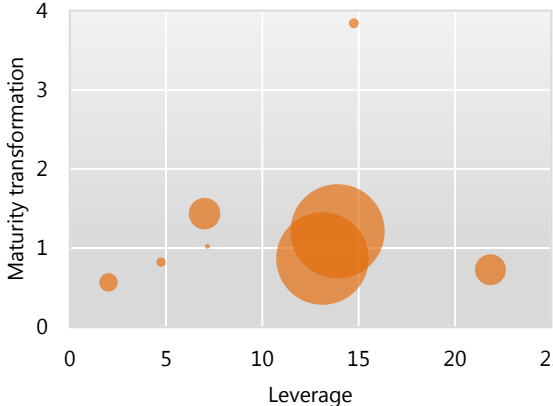
Size of bubble denotes the sector's absolute size; at end-2015

Graph 11

Finance companies



Broker-Dealers



<sup>1</sup> Maturity Transformation = short-term liabilities / short-term assets. Leverage = total financial assets / equity. In some cases, these estimates include assets of entities consolidated into banking groups because some countries' granular data do not distinguish between consolidated and non-consolidated entities. Size of bubble denotes the sector's absolute size.

Source: FSB Global Shadow Banking Monitoring Report 2016.

### 3.5 Facilitation of credit creation (Economic Function 4)

This economic function captures entities associated with facilitation of credit creation, which occurs when financial guarantors or monoline insurers extend various forms of guarantees. Credit insurance providers and holders of credit derivatives facilitate credit creation through engagement in markets that offer insurance for credit instruments, thereby enhancing their marketability. Balance sheet assets of credit insurers are often modest, while they can facilitate substantial volumes of credit supplied by bank or non-bank financial institutions. Facilitation of credit creation was relatively small at end-2015, with assets totalling just over \$140 billion and representing only 0.4% of total shadow banking assets, although further improvement in data is needed.

### 3.6 Securitisation-based credit intermediation (Economic Function 5)

Financial stability risks from shadow banking within securitisation-based credit intermediation and funding of financial entities may arise from their linkages to the banking sector. Securitisation-based credit intermediation and funding of financial entities, net of entities prudentially-consolidated in banking groups, was about \$3.0 trillion at end-2015, or 9% of the aggregate narrow measure of shadow banking. The securitisation market has decreased notably since the financial crisis, in part due to the decline of subprime mortgages, CDOs and much of ABCPs. Nevertheless, commercial mortgage-backed securities (CMBS), collateralised loan obligations (CLOs), auto loan ABS and student loan ABS have risen significantly over the past several years, and may experience much higher loss rates should credit quality of their underlying high-yield assets deteriorate.

### **3.7 Statistical residuals and unallocated activities**

Statistical residuals, which are generated in some jurisdictions' financial accounts, result from the difference between total assets of OFIs, as they are published in sector balance sheet statistics, and the sum of all known subsectors therein. This may be the consequence of inconsistencies between “top-down” national accounts calculations and “bottom-up” coverage of OFI subsectors, as well as challenges in aligning these two layers and differences in data granularity. Further granularity of data collection is needed to assess and reduce the global residual of \$5.3 trillion.

In addition to the five economic functions, the narrow measure also includes about \$2.3 trillion of assets which capture “unallocated” shadow banking. In some jurisdictions, authorities were unable to clearly assign shadow banking entities to a specific economic function, but assessed them to be involved in credit intermediation or did not provide sufficient evidence to warrant their exclusion from the narrow measure. Over time these unallocated shadow banking category and statistical residuals should be reduced by authorities through better data and analysis.

## **4. Recommendations to address residual risks from shadow banking**

### **4.1 Identifying gaps and residual risks**

#### ***4.1.1 Policy responses to new risks***

As the analysis of shadow banking activities and associated financial stability risks through FSB's system-wide oversight framework (in Section 3) shows, much of the most vulnerable parts of shadow banking activities that contributed to the crisis and greatly accentuated its impact have since significantly declined. This reduction reflects a series of post-crisis policy measures (as described in Section 2) that have changed the economics of those activities, as well as a mixture of lessons learnt by investors and financial intermediaries (see Graph 12).

However, the analysis of shadow banking activities and risks since the crisis has identified potential new financial stability risks that could materialise in the future and that may warrant policy response by authorities. One notable example is the considerable growth of certain investment funds combined with a relatively high degree of credit risk, as well as liquidity and maturity transformation, and, in the case of jurisdictions that reported hedge funds, relatively high levels of leverage (see Graph 12 upper left panel). Since such funds may be vulnerable to runs by investors during periods of market stress and may pose risks to the financial system, in January 2017, the FSB published 14 policy recommendations<sup>59</sup> to address four structural vulnerabilities from asset management activities that pose potential financial stability risks:

- a. liquidity mismatch between fund investments and redemption terms and conditions for open-ended fund units;
- b. leverage within investment funds;
- c. operational risk and challenges at asset managers in stressed conditions; and

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<sup>59</sup> <http://www.fsb.org/wp-content/uploads/FSB-Policy-Recommendations-on-Asset-Management-Structural-Vulnerabilities.pdf>

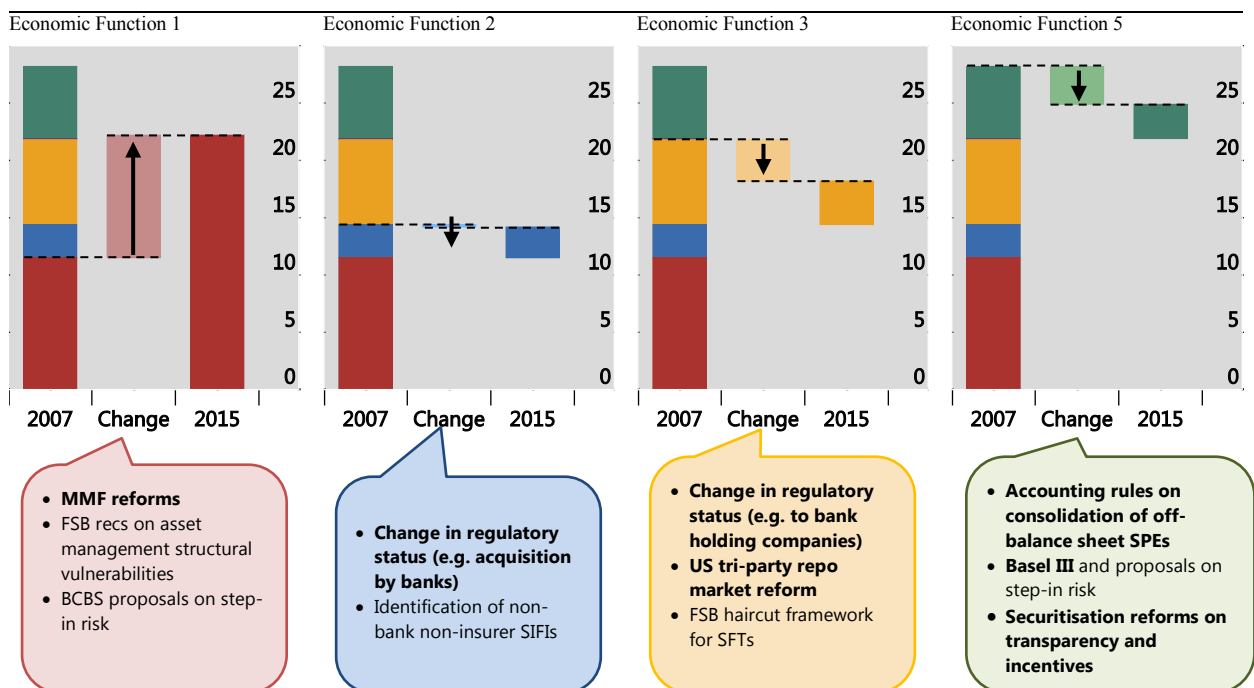
d. securities lending activities of asset managers and funds.

Most of the 14 recommendations focused on addressing liquidity mismatch in open-ended funds through: improving reporting and disclosures; addressing gaps in liquidity management throughout the life cycle of funds, including in the design phase and on an ongoing basis; improving the adequacy of open-ended funds' liquidity risk management tools to deal with exceptional circumstances; and addressing additional market liquidity considerations. Based on the FSB recommendations, IOSCO is currently working to operationalise the FSB recommendations on addressing liquidity mismatch in open-ended funds by the end of 2017, and will be issuing public consultative documents in June 2017. It is also working to identify and/or develop consistent leverage measures by the end of 2018.<sup>60</sup>

## Regulating the evolving system of market-based finance

In USD trillions

Graph 12



Bubbles show examples of policy measures applied to the relevant economic functions since the financial crisis. Additional policy measures may have been introduced at national/regional and international levels. Measures in bold are in force. EF4 was not represented in this graph as it is only 0.4% of total shadow banking assets.

- **Securitisation-based credit intermediation (EF5)**
- **Facilitation of credit intermediation (EF4)**
- **Market intermediation dependent on short-term funding (EF3)**
- **Lending dependent on short-term funding (EF2)**
- **Management of collective investment schemes that are susceptible to runs (EF1)**

Source: Adapted from [FSB Shadow Banking Monitoring Report 2016](#).

<sup>60</sup> Based on the consistent measures it develops, IOSCO, in coordination with the FSB, is expected to collect national/regional aggregated data on fund leverage across its member jurisdictions from the end of 2019. The development of leverage measures and associated data collection at the global level is designed to enhance authorities' ability to monitor the risks that leverage in funds may pose to the financial system and, where needed, help authorities take appropriate policy responses to address such risks.

### ***4.1.2 Gaps in data and analysis***

While significant progress has been made in establishing a system-wide oversight framework, considerable challenges remain.

Sizeable data gaps remain due to inconsistencies in some jurisdictions' sector balance sheet statistics. For example, a number of jurisdictions do not have sufficient balance sheet breakdowns of OFIs to allow for the compilation of metrics by which to assess various financial stability risks from shadow banking. As a result, the sample of jurisdictions on which inferences about risks are drawn in the monitoring is relatively small for some entity types.

Moreover, because individual entity-level data is not collected to generate sector-level averages, the monitoring is not able to assess the range of risks across individual entities within jurisdictions. Assessing risks within sectors based on sector balance sheet statistics has a significant drawback in that it only shows sector averages, and not the variation or concentration of risks within sectors. In this regard, the FSB's annual monitoring exercise currently provides little insight into the extent to which very large, interconnected and internationally-active entities are engaged in significant activity that may give rise to financial stability concerns.

As well, the interconnectedness assessment has provided a useful starting point to understand the intertwined exposure between banking and OFI sectors, on average, which helps identify the avenues by which shocks may propagate across financial intermediaries. However, it does not provide direct insight into the possible risks that underlie these exposures, and thus it is not possible to anticipate the possible velocity or severity of the amplification of shocks. Furthermore, the current assessment is limited in its ability to illustrate concentrations of interlinkages, such as credit intermediation chains that are concentrated in particular types of entities that engage in the highest levels of activity that may have financial stability risks from shadow banking. Moreover, the interconnectedness data does not provide sufficient insight into the nature of cross-border exposures by financial sector, or entity type. The prevailing opacity in this area represents a concern that, under some circumstances, could be a critical transmission channel of stress to other parts of the system.

## **4.2 Recommendations to address residual risks from shadow banking**

Based on this assessment, to address the identified gaps and residual risks from shadow banking as described above, the FSB members agreed on the following set of recommendations going forward.

### ***4.2.1 Overarching recommendations to establish system-wide oversight of shadow banking and make policy responses to address the identified risks***

The FSB's assessment of shadow banking activities and risks has not identified new risks to financial stability that would warrant additional policy action at the global level. However, since shadow banking evolves over time, authorities should continue to vigilantly monitor and address emerging financial stability risks, and keep up to date the regulatory perimeter.



**Recommendation 1: All FSB member authorities should implement the recommendations of the 2015-16 Peer Review, including (i) establishing a systematic process for assessing shadow banking risks, and ensuring that any entities or activities that could pose material financial stability risks are brought within the regulatory perimeter in a timely manner; (ii) addressing identified gaps in the availability of risk-related data, including by having sufficient information-collection powers, to assess financial stability risks; and (iii) removing impediments to cooperation and information-sharing between authorities, including on a cross-border basis.**

In taking forward the Peer Review<sup>61</sup> recommendations, specifically, authorities should:

- enhance risk data collection and analysis, particularly with respect to liquidity and maturity transformation, and leverage, so as to improve their ability to assess non-banks' involvement in shadow banking;
- monitor and share information on emerging financial stability risks that are growing quickly and may become concerning through the FSB's annual monitoring exercise; and
- address any identified financial stability risks from shadow banking through appropriate policy measures and share their approach with other authorities through the annual monitoring exercise.

Through the annual monitoring exercise, FSB Shadow Banking Experts Group (SBEG) will regularly report to the Standing Committee on Assessment of Vulnerabilities (SCAV) and the Standing Committee on Standards Implementation (SCSI) on the status of FSB member jurisdictions' risk analysis, data gaps, and sharing of information. For the 2017 exercise, it will provide status updates in September and November/December. Based on the information collected on policy tools through the annual monitoring exercise, authorities will share their approaches to addressing identified financial stability risks at the FSB Standing Committee on Supervisory and Regulatory Cooperation (SRC). SCSI will conduct a follow-up peer review on the FSB's Policy Framework in 2020 (i.e. 5 years from the 2015-16 Peer Review).

#### ***4.2.2 Recommendations to strengthen the monitoring of shadow banking activity and the data collection framework***

The assessment of the data collection related to shadow banking activities and risks showed that, **while improvements have been made, continued data gaps and lack of risk granularity hampers a more forward-looking identification of potential financial stability risks.**

These challenges can be addressed by the following recommendations:

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<sup>61</sup> <http://www.fsb.org/wp-content/uploads/Shadow-banking-peer-review.pdf>

**Recommendation 2: Where sector balance-sheet statistics (flow of funds) do not include granular data on short- and long-term assets and liabilities, authorities are encouraged to define and improve these data by creating more granular statistical categories.** Overall, while progress has been made, greater attention is needed on collecting liabilities data to better assess funding vulnerabilities. Also, **authorities are encouraged to seek further granularity on cross-border interconnectedness between banks and non-banks as well as among non-bank sectors.**

In taking forward this recommendation, the following actions will be taken in the 2017 monitoring exercise:

- SBEG will seek to improve the granularity of data collection for the annual monitoring exercise (which will facilitate authorities' efforts in improving the data granularity), in particular with respect to short- and long-term assets and liabilities. The group will assess which data are most consistently and widely available across jurisdictions, and the extent to which the reporting should be supplemented with other sources of data to provide a more complete picture of risks, so as to reduce unnecessary reporting burden. It will report the proposed improvements to SCAV by March 2018 so that they can be incorporated in the 2018 monitoring exercise.
- SBEG will assess data availability of interconnectedness between banks and non-banks, and review how some jurisdictions collect cross-border interconnectedness data. In particular, it will seek to better understand and improve the granularity of the cross border "Rest of World" category to understand the interconnectedness of banks and non-bank sectors across jurisdictions. SBEG will report its findings and proposed improvements to SCAV by March 2018.
- SBEG will improve its approach to assessing the risks associated with interconnectedness, which will necessitate further breakdowns, possibly by economic function, of shadow banking interconnectedness with banks and other non-bank entities. This is designed to help better assess the transmission and amplification of risks to other parts of the financial system.
- The FSB will continue to coordinate with the Organisation for Economic Co-operation and Development (OECD) in investigating the possibility of including further breakdowns of the financial corporations' sector in SNA-based sectoral accounts in order to approximate shadow banking from a macro-perspective (for Recommendation II.5 of the second phase of the G20 Data Gaps Initiative<sup>62</sup>).

**Recommendation 3: Authorities should supplement flow of funds data, where needed, with supervisory and/or commercially available firm-specific data to assess activities and risks.**

More granular data is needed to capture the range of risk-taking and concentrations within particular economic functions. In this regard, for the FSB's annual monitoring exercise in 2017 and thereafter, authorities should assess data availability, improve the granularity of data for risk analysis by supplementing flow of funds data with supervisory and/or commercially

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<sup>62</sup> <https://www.imf.org/external/np/g20/pdf/2016/090216.pdf>

available firm-specific data to assess activities and risks, including concentration risks, as needed. For example, to assess the concentration risks, authorities will provide publicly or commercially available balance-sheet and risk data for the sample pool of the largest five entities in the largest three economic functions they report. From these submissions, SBEG shall assess different types of business models within each economic function and relevant entity types, to better understand the range and evolution of risk taking that occurs.

**Recommendation 4: Authorities should closely monitor and share information and, where possible, data on emerging financial stability risks that are growing quickly and may become concerning.**

Through the FSB annual monitoring exercise, authorities should continue to closely monitor and share information and, where possible, data on emerging risks that are growing quickly and may raise financial stability concerns. This effort may help authorities address such risks in a proactive manner.

SBEG will also continue to improve its forward-looking monitoring of emerging financial stability risks, including through structured case studies of such risks, and will document the range of jurisdictions that are also identifying similar emerging risks, together with the level of concern. The findings will be reported to SCAV and, as appropriate, included in the Global Shadow Banking Monitoring Report.

**4.2.3 Recommendations to address potential residual risks from shadow banking that may need policy attention**

As the assessment of policy measures shows, **at the international level, policy development targeted to the financial stability risks from shadow banking that have materialised to date has now been mostly completed. However, authorities should complete the remaining policy development and to implement the agreed policy recommendations** to reduce potential financial stability risks and arbitrage opportunities across jurisdictions and sectors.

**Recommendation 5: Remaining international policy development should be completed. In this regard, it is important for the BCBS to complete its guidance on step-in risk.**

The BCBS will finalise its guidance on step-in-risk by the end of 2017. The FSB-SRC will review the BCBS' progress in September.

**Recommendation 6: The operationalisation of the FSB's January 2017 policy recommendations to address structural vulnerabilities from asset management activities are designed to address financial stability risks that could materialise in the future. In this regard, IOSCO is expected to complete its work on liquidity mismatches in open-ended funds by the end of 2017 and the identification and/or development of consistent leverage measures by the end of 2018.**

To operationalise the FSB's policy recommendations to address structural vulnerabilities from asset management activities, IOSCO is currently (i) reviewing its existing guidance to address liquidity mismatches in open-ended funds and, as appropriate, enhance them, as well as (ii) identifying and/or developing consistent leverage measures. IOSCO will report on its progress to the FSB-SRC.

**Recommendation 7:** Since shadow banking may use regulatory differences including across borders, **national/regional authorities should implement agreed policy recommendations in a timely and consistent manner.**

Findings from the monitoring of implementation status by the FSB and SSBs suggest variances in progress across jurisdictions and across recommendations. Such variances may be used by shadow banking entities and become sources of risks to the financial system. Therefore authorities should implement agreed policy recommendations in a timely and consistent manner.

FSB member authorities should therefore continue to share information on progress and approaches in implementing recommendations and challenges through the FSB's annual monitoring exercise and peer reviews.

The FSB and SSBs will also support timely and consistent implementation of agreed recommendations through the following actions:

- **FSB-SCSI will establish a comprehensive framework to monitor the implementation of all shadow banking policy recommendations on a regular basis** (as is the case with other priority areas for implementation monitoring under the FSB's Coordination Framework for Implementation Monitoring).<sup>63</sup>
- IOSCO will conduct follow-up level-one and level-two peer reviews of national implementation status with regard to its recommendations on MMFs and securitisation incentives after relevant regulations are adopted in remaining major jurisdictions, and will report its findings to the FSB.
- SCSi, through SRC's Workstream 5 or other relevant experts group, to regularly review the national and SSB implementation status in relation to the FSB's policy recommendations to address financial stability risks in SFTs.

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<sup>63</sup> Such implementation monitoring will not duplicate the monitoring work conducted by SCAV-SBEG.