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Working Paper

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Working Papers on Global Financial Markets, No. 43

Provided in Cooperation with:
University of Jena and University of Halle-Wittenberg, Foundations of Global Financial Markets - Stability and Change

Suggested Citation: Poschmann, Jenny (2013) : Approaches to Shadow Banking Regulation - Monitoring and Policy Framework, Working Papers on Global Financial Markets, No. 43, Graduiertenkolleg 'Konstitutionelle Grundlagen globalisierter Finanzmärkte - Stabilität und Wandel', Jena und Halle (Saale), https://nbn-resolving.de/urn:nbn:de:gbv:27-20131126-111658-8

This Version is available at:
https://hdl.handle.net/10419/94493

Working Papers on
Global Financial Markets

No. 43

Approaches to Shadow Banking Regulation – Monitoring and Policy Framework

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March 2013

Approaches to Shadow Banking Regulation – Monitoring and Policy Framework[1]

In the recent years the shadow banking system had moved into the focus of regulators. New regulatory approaches affected the overall appearance of financial markets. The G20 detected the shadow banking system as remaining issue for sound and efficient regulation to ensure a stable financial system. The FSB was tasked to develop, in collaboration with other standard setting bodies, a policy framework to monitor and supervise shadow banking activities and entities. This work aims to outline the proposed recommendations of five workstreams and reflect their relevance critically.

Keywords: Non-Bank financial institutions, Shadow Banking, Financial Regulation

JEL classification: G21, G23, G24, K22

I. Introduction

This work aims to outline and critically reflect the current status of proposed regulatory reforms of the shadow banking sector. As the European Commission states in their Greenpaper, the financial crisis of 2008 exposed shortcomings in the financial system, including ineffective supervision, regulatory gaps, opaque markets, and complex products (European Commission, 2012, p. 1). As a consequence, new regulatory approaches, such as the new Basel accords and the Dodd–Frank Act, have already effected the appearance of international financial markets. Nevertheless, the G20 leaders detected the "strengthening regulation and supervision of the shadow banking" system as a remaining issue of regulation (G20, 2010, no. 41). Besides the G20, there has been a persistent number of calls for further regulation by academics, regulatory authorities and others. Nowadays, the shadow banking system is considered as a non-trivial part of a modern financial system. According to estimates by the European Commission, the shadow banking system had a size of about Euro 46 trillion in 2010. The Financial Stability Board (FSB) monitoring report of 2012 even sized the shadow banking system with $ 67 trillion by the end of 2011. This accounts for about 30% of the total financial system. With up to 40% the proportion is even higher in the United States (European Commission, 2012, p. 4). The growing importance highlights the demand for reliable information and enhanced transparency concerning size, composition and regional development of

[1]The author wishes to thank Matthias Bauer, Christian Fahrholz, Thomas Katzschner and Markus Pasche. The author acknowledges financial support by the Graduate School "Global Financial Markets - Stability and Change", which is funded by the Stiftung "Geld und Währung". Corresponding address: Jenny Poschmann jenny.poschmann@uni-jena.de

the shadow banking system. Also, the interaction of banks and non-bank financial institutions (NBFI) poses increased potential risk whereby an analysis is crucial.

McCulley (2007) was first to use the term shadow banking, describing highly leveraged and unregulated financial institutions that do not benefit from a safety net or other official guarantees. However, the term shadow banking can be misleading or inaccurate, even as pejorative connotation. It conveys the impression that activities of these intermediaries lack transparency and entities operate in a grey area. Therefore, a more precise and primarily neutral term such as non–bank financial intermediary (NBFI) or parallel banking system was proposed to be used (Investment Company Institute, 2012, p. 3). So far, there is no commonly-agreed on definition or terminology at regulatory level. Broadly speaking, shadow banking can be characterized as "credit intermediation involving entities and activities outside the regular banking system"[2]. So far, there does not exist comparable, reliable and consolidated data regarding a defined non-bank system. NBFI redound to a complex financial system with various entities and instruments. They can complement and/or supplant traditional banking activities. Their existence constitutes potential risks through various channels that are not fully predicted, yet. The connections between the traditional banking sector and the shadow banking system, through contingent credit lines, provisions of finance and temporary exposure can create additional risks to financial stability. Furthermore, deposit-like instruments (e.g. MMF shares) expose the NBFI system to the risk of modern banks runs. Finally, procyclicality (e.g. marked–to market evaluation of assets) triggers risk of contagion (Financial Stability Board, 2011b). Consequently, dysfunctions and market breakdown of NBFI have an impact on the overall functionality of financial markets. Already in his speech (2010), Paul Tucker recommended, that the "financial stability authorities need to attend to the dynamics of the overall system" and that they can not "sleep safely solely in the basis of their work" .

The G20 recognized that the adoption of new capital requirements can cause the risk of capital to migrate to segments that are not or just partially regulated and new adverse effects. Therefore, the G20 tasked the Financial Stability Board (FSB), in collaboration with other international standard setting bodies, to "develop recommendation on the oversight and regulation" of the shadow banking system (see e.g., G20 (2010); Financial Stability Board (2011b) and Financial Stability Board (2011a)). The FSB has initiated a task force to define and clarify the shadow banking system and analyze the role of NBFI within the financial system. One further objective is to analyze the risks and identify the scope for additional regulatory measures to address both risks and possible regulatory arbitrage (Financial Stability Board, 2011a). Working parallel, the European Commission published the Greenpaper on shadow banking which picks up the FSB objectives (European Commission, 2012). The U.S. Federal Reserve Bank also progresses work concerning shadow banking classification, monitoring and regulation (see therefore, Adrian

[2]This definition follows the FSB definition approach

& Ashcraft (2012)).

The remainder of the paper is organized as follows. To begin with, section 2 discusses the concept of shadow banking and review different approaches of definitions. Section 3 discusses the monitoring approach and results of the monitoring report. Section 4 outlines the findings and recommendations of the workstreams and discuss practicability.

II. Definitions — Concept of Shadow Banking

"The difficulty starts with definition" (Turner, 2012, p. 3). What exactly is shadow banking? Regulatory authorities are challenged by the task to properly define shadow banking, in order to implement efficient regulation. So far, there does not exist a clear and commonly-agreed on definition of what can be understood as shadow banking or how to differentiate the NBFI system. This also results from varying definitions and regulation standards of the traditional financial system in each jurisdiction. Regulatory bodies agree on, that there is a parallel financial sector, but not on what it is exactly, how to define it, and which entities and activities are part of it. As shadow banking markets will continue to emerge, a flexible forward-looking perspective is crucial, to stay ahead of changes, to cover new instruments and entities. As shadow banking constitutes rather a system of multiple entities that cooperate in an intermediation chain than one single entity, an appropriate definition has to capture the whole chain of intermediation. The individual entities of the system are differently shaped by various jurisdictions and therefore, definition and subsequent regulation need to apply to economic substance or activities rather than form or entity. In addition, the definition has to capture a global picture, given that parts of the shadow banking intermediation chain could be located in different jurisdictions (see, Kocjan *et al.* (2012) and Financial Stability Board (2011a)). Here, the first crucial problem of shadow banking regulation becomes apparent. An elaborated definition is fundamental for further regulation.

According to the International Banking Federation, the absence of a common definition should not prevent regulatory and/or supervisory actions. There is no definition needed to encompass regulation. Looking at traditional banking regulation, neither did the global inconsistency over what a bank is and what it does. There do exist tight regulatory standards and supervisory oversight (International Banking Federation, 2012, p. 2). Notwithstanding the above stated view of the International Banking Federation, from the authors point it is essential to agree on a clear definition and distinguish what actually is need to be regulated notably in which way and concentration. It is essential to clearly circumscribe the banking as well as the shadow banking sector. Consequently, different definitions of traditional banking does influence the definition of NBFI.

Various definitions differ in scope that they cover. The FSB defines shadow bank-

ing in a two-dimensional approach as "a **system of credit intermediation** that involves **entities and activities outside the regular banking system**, and raises **i) systemic risk** concerns, in particular by maturity/liquidity transformation, leverage and lawed credit risk transfer, and/or **ii) regulatory arbitrage** concerns" (see therefore, European Commission (2012) and Financial Stability Board (2011a)).

Following the EU Greenpaper on Shadow Banking, which extended the FSB definition approach, entities outside the regulated system can be defined as NBFI if they are involved in either one of the below mentioned activities (see, European Commission, 2012): they (1) perform maturity and/or liquidity transformation, (2) accept funding with deposit-like characteristics, (3) undergo credit risk transfer, and/or (4) use direct oder indirect credit leverage. The definition encompasses entities that perform activities that constitute an important way of funding the shadow banking sector: (1) securitization, (2) securities lending, and (3) repurchase transactions (repos). This enumeration emphasizes the activity based definition approach.

Adrian & Ashcraft (2012) on the other side use a much broader scope and defines shadow banking as "banking intermediation without public liquidity or credit guarantees". Shadow banks in this context "channel funding from savers to investors through a range of securitization and secured funding techniques". Perry Mehrling and others (2012) defines the shadow banking rather short but concise as "money market funding of capital market borrowing" with "no direct public backstop". [3] The definition by Mehrling et al focuses on the funding way of the shadow banking system. The FSB on the other hand emphasizes shadow banking activities and mainly the act of credit intermediation. In this way the FSB covers a wide range of financial activities and map a system that might be bigger than estimates under the definition by Mehrling. The European Commission also defines the system in a functional approach. This definition tries to capture as much potential shadow banking activities and entities as possible. This makes apparent, that the definition influences the perception on how big the system is, which activities and entities are part of the system, and what needs to be regulated. Keeping those issues in mind, regulators and authorities need to decide which definition is efficient to ensure stability of the shadow banking sector and the overall financial system. Also, the question arises, if a definition should cover all possible entities and activities, even though later on they might be declared as not considerable for stability and risk issues. Or should a definition encompass just parts that are explicitly identified as shadow banking entities.

To identify mutations or adoptions as potential concerns and to derive and implement policy options, regulators focus on activities where certain concerns are likely to arise, notably: i) systemic risk through maturity and/or liquidity transformation, as well as leverage, and (2) regulatory arbitrage, used to circumvent and undermine banking regulation (Financial Stability Board, 2011b, p. 3).

[3] For further definitions see appendix.

Following the FSB approach, maturity and/or liquidity transformation as well as extended leverage raise concerns to create additional systemic risks within the shadow banking system and consequently to the whole financial system through various channels of interconnections. Shadow banks typically use short-term and highly liquid non-deposit instruments (e.g. repos, ABCP) to fund themself via wholesale funds. Risk profiles of these instruments are partly unpredictable as they are not subject to the usual banking supervision and standards, and/or are offered without official sector backstops. There does not exist government insurance for safe return of funds to the investor in the event of market failure (Kocjan *et al.*, 2012, p. 5). The short-term funding can build up additional leverage (through re-hypothecation and securitization) and may lead to "modern bank runs" [4]. Furthermore, distinct leverage in the shadow banking system can amplify procyclicality. Activities within the system promote high leverage particularly when asset prices are buoyant and haircuts as well as margins are low. But here, market participants are exposed to disruptions in the financial system. This might lead to sudden deleveraging and fire sales of assets held by NBFI and the traditional banking sector (see, Financial Stability Board, 2011a, p. 4).

One of the key-characteristics of the shadow banking system is the conduct of bank-like activities with seemingly little or no regulatory constraints. Many parts of the shadow banking system are already indeed subject to regulation (MMF, Banks etc.) and others are unnoticed by financial authorities (OBSE, finance companies). Also, each one by one might not oppose much risk to the financial system. However, the interplay and interconnection within the shadow banking system without guaranteed access to central bank money or similar could create the risk of a systemic failure. Though, this regulation does not cover interactions of institutions and their impact on the financial system and financial stability. Regulation of these entities focused on consumer protections rather than financial stability of a system. Compared to banks, shadow banks might be able to obtain a funding advantage. Banks use these arbitrage effects to undermine regulation. This consequently leads to a build-up of additional risk and leverage and the use of less regulated entities (OBSE) to circumvent these regulatory capital and liquidity requirements.

With regard to already regulated entities of the shadow banking intermediation chain it should be kept in mind that it does not necessarily mean that there is urgent demand for new regulation. Though, authorities should monitor NBFIs and create transparency. Consequently, market participants and authorities are aware of what the specific entities of the intermediation chain do.

Both, bank and non-bank intermediaries are highly connected through different channels. Traditional banks can be part of the shadow banking intermediation chain or may provide liquidity support to non-banks in form of backstop facilities.

[4] As modern bank run is in this context defined as run on run-able deposit-like instruments such as short-dated ABCP, repos and money market fund investments (Financial Stability Board, 2011a, p. 4).

Another boundary point can be the investment in financial products of the shadow banking system by the traditional sector or even investment in the same or similar asset classes. Hence, traditional banks are exposed to a common concentration of risks through asset holdings. The aspects can heighten the risks of asset bubbles and may lead to fire sale situations, especially when entities in both sectors invest in the same assets. Consequently, banks are effected by the development of the shadow banking sector by this issues (see, Financial Stability Board, 2011b).

The FSB set up workstream to survey different shadow banking subjects in detail. They will review existing regulation and supervisory actions, and proof necessity of new policy recommendations to strengthen regulation and supervision (Federal Financial Supervisory Authority (BaFin) (2011)). The Basel Committee of Banking Supervision (BCBS) responsibility encompasses indirect regulation of NBFI within direct regulation approaches (Basel 2.5 and Basel 3) to mitigate spill-over effects between banks and NBFI (WS1). The BCBS will therefore review the following areas: scope of consolidation, large exposure regimes and banks' investments in NBFI funds. The International Organization of Securities Commissions (IOSCO) is mandated with possible MMF regulation to reduce the susceptibility to runs (WS2) and the evaluation of securitization issues, such as transparency and standardization (WS4). The FSB task force itself focuses on evaluation and mitigation of potential risks concerning other shadow banking entities that are not examined in detail yet (WS3) and risk and procyclicality incentives linked to secured finance instruments, such as repos and securities lending (WS5) (Financial Stability Board, 2012e, p. 3). In addition to these five workstreams, the FSB will also monitor other regulatory initiatives: (1) data reporting and transparency[5], (2) underwriting standards[6], and (3) credit rating agencies[7] (Financial Stability Board (2011b)).

III. Monitoring the Shadow Banking System — Monitoring Report Results

Efficient monitoring process

A broad monitoring process is important to receive a comprehensive picture of the market and the future development. It is essential to analyze what the system further consists of and which weak points might exist, and constitutes need for regulation and harmonization. The monitoring should outline sub-segments of the shadow banking system to target single details more precisely. To receive a clear picture of size and development and to estimate possible risks of different shadow banking activities and entities, the FSB applies a monitoring approach. The combination of quantitative and qualitative analysis aims to offer a widespread picture of size and growth of a roughly differentiated sector, as well as detailed data and

[5]FSB Enhance disclosure task force – Report on " Enhance the risk disclosure of Banks"
[6]FSB report on "Principles for Sound Residential Mortgage underwriting Practice
[7]FSB report on "Principles for reducing reliance on CRA ratings"

characteristics about single entities or activities (Financial Stability Board (2011a)). Quantitative information about the shadow banking sector is already given in different essays (Bouveret (2011), Kocjan *et al.* (2012), Bakk-Simon *et al.* (2012) and Poschmann (2012)). Anyhow, these studies are not based on the same data base. The FSB published an overview report in October 2011. Hence, estimates of the shadow banking sector may differ (see therefore, Kocjan *et al.*, 2012, p. 9). Regarding the FBS Report 2011, there does not exist a harmonized and sufficiently tested way to monitor shadow bank activities and entities. The statistical definition of types of financial intermediaries diverge across jurisdiction. Consequential, it is hardly possible to map a consistent global picture and diverse estimates appear. In the authors view the mapping and monitoring process should aim to generate comparable and harmonized data. A harmonized definition will facilitate this. So far flow of funds data and other monetary statistics are used for shadow banking size estimates. However, since this data was issued for a different purpose, estimates calculated on this data have limited validation. Hence, authorities, central banks and the industry need to generate more specific and granular data.

To ensure efficient monitoring the FSB introduces high-level monitoring principals (see therefore, Financial Stability Board, 2011b). (1) The **scope** of authorities should be, to gain a comprehensive picture of the shadow banking system and the risk that have an impact on financial system. (2) The monitoring **process** should be reported on a regular and frequent basis, to ensure the identification and assessment of risks. (2i) Relevant authorities should collect **relevant data and information** and define pursuant parameters for reporting shadow banking data. (4) The monitoring task should be flexible and able to capture **innovations** and the changing nature of activities and entities. Concerning (5) **regulatory arbitrage**, monitoring authorities should keep in mind, that changes of regulation could be an incentive to expand shadow banking activities. (6) Applying monitoring, regulatory authorities should keep the features, characteristics and definition approaches of different **jurisdictions** in mind, to brace up for differences. Meaning, structures of local financial markets and their international interconnection should be taken into consideration. (7) On a regular basis, authorities should **exchange information** within and across specific jurisdictional borders. This might help to identify certain spill-over effectsand contagion risks.

The FSB monitoring approach (2011b) is split up into two-step (see figure 1). Thereby, different types of information and data are gathered and various analytical methods are used. While looking at the shadow banking system from a **macro-mapping prospective** (step 1), authorities focus on quantitative and system-wide data. The first step will start with gathering mainly Flow of Funds and supplementary data, such as monetary statistics, regulatory and supervisory reports, and observations of bank and non-bank subsidiaries. This data will provide an useful overview on shadow banks and their interconnection with the traditional banking system.

Notice, it is difficult to simply aggregate Flow of Funds data across different juris-

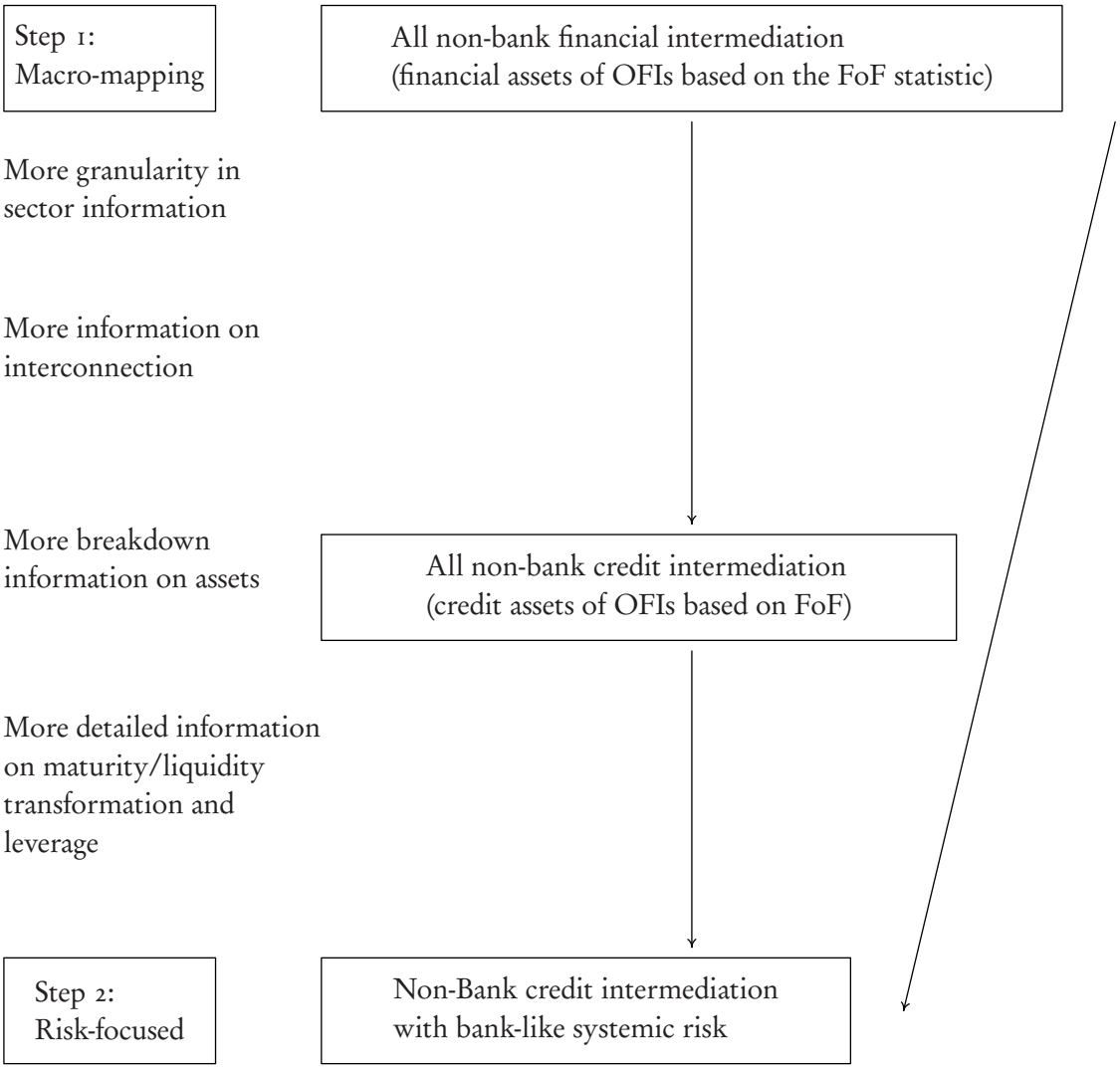

Figure 1: Simplified conceptional image of the Monitoring and Mapping process based on Financial Stability Board (2012a) (OFI - other financial intermediaries, FoF - Flow of Funds).

dictions, as there exist varying definitions and compositions of term financial intermediary. Some data includes non-bank financial intermediaries such as MMF or central banks and some Flow of Funds data does not. Also, the Flow of Funds data might lack granularity in terms of the financial sector. These aspects contribute to a higher complexity of a consistent global picture of the overall system. For the purpose of consistency and assimilable data, the FSB recommends to improve granularity of data. Also, authorities need to obtain breakdown information on different non-bank financial intermediaries such as pension funds, insurances and MMF, and should furthermore gather information on the interlinkages between banks and NBFIs.

The second step of the FSB monitoring approach, the **micro-mapping prospective**, claims to narrow down the focus to specific systemic risk factors and regulatory arbitrage concerns. These factors should be monitored on a regular basis. Furthermore, the monitoring process should be supplemented by taking specific factors of other jurisdictions into account. According to the FSB (2011b), the following key systemic risk factors should be assessed. I) To which extend use financial intermediaries **maturity transformation**. To do so, authorities need to obtain "weighted-average maturity" and classify remaining maturities. (2) Even though it is difficult to measure, authorities should assess the degree of **liquidity transformation**. (3) Regarding **credit risk transfer**, authorities shall monitor and assess off balance sheet exposures and the appropriateness of credit risk mitigation techniques, such as guarantees, commitments, credit derivate, liquidity puts and other implicit liquidity support. (4) Concerning **leverage** it is important to assess the degree of leverage and especially leverage associated with off balance sheet activities.

NBFI (e.g. MMF, broker-dealers and other collective investment schemes) are not subject to the same regulatory and supervisory constraints as traditional banks are. Therefore, banks have an incentive to make use of their possibilities to circumvent regulation. A monitoring should be concerned about the detection of regulatory arbitrage and consequently be sufficiently flexible, forward-looking and adaptable to identify new activities, innovations and mutations within the financial system. Authorities should therefore gather disciplinary expertise from different areas, such as legal, economic, accounting and policy research. Here, authorities need to combine quantitative data (performance indicators) and qualitative information (regular supervisory dialog). Cooperation and information exchange between supervisory agencies and regulatory authorities is necessary on a national and international basis.

While conduction a detailed assessment, authorities need to pay particular attention to factors, which may have potential negative impact on the financial system. The monitoring framework should provide informations about the degree of interconnection, as there are strong interconnections between traditional banks and NBFI through asset holdings, derivate positions and funding interdependencies. Additionally, authorities should pay attention to the size of the shadow banking

sector and collect data of total assets and liabilities on a regular basis. Last, earnings performance indicators (e.g. ROE, ROA) should also be monitored in order to assess the sustainability of loss absorption capacity of shadow banking entities and activities.

Monitoring Report results

The monitoring report of 2012 pictures the results of the monitoring process. To conduct a detailed macro mapping, data and informations including Flow of Funds data (by the end of 2011), analysis of national shadow banking development and additional information based on questionnaires (e.g. finance companies) from 25 jurisdictions and the Euro Area was collected (Financial Stability Board (2012a)). By the end of 2011, the shadow banking system is estimated to have a size of about $67 trillion (proxied by the assets of OFI). This is equivalent to a share of around 25% of the total financial assets and to 111% of the GDP (aggregated for 20 jurisdictions and the Euro Area[8]). There is divergence of the NBFI among jurisdictions, affected by their overall importance, the size relative to the GDP and growth trends (Financial Stability Board, 2012a, p. 8). Policy recommendations and future regulation will influence the individual jurisdictions differently.

High growth rates had been registered in all jurisdictions before the crisis. Post-crisis, growth decelerated in almost all jurisdictions. In some, growth of the NBFI sector declined (e.g. France, Canada, Italy, USA). An intense growth could be observed in emerging economies such as India and Indonesia. However, the shadow banking system remains small relative to their overall national financial system. In some advanced economies there are still robust growth rates observable (e.g. UK and Switzerland). With $23 Trillion the US has the largest shadow banking sector, followed by the Euro Area ($22 trillion) and the UK ($9 trillion). The US share of the total shadow banking system amounts 35%. A decline of US shadow banking assets is compensated by increasing asset volume in the Euro Area, the UK, and other jurisdictions such as Brazil, China and Hong Kong (Financial Stability Board, 2012a, p.14).

The NBFI sector can be divided into sub-segments. With $19 trillion and hence a share of 35% "other investment funds" constitute the largest sub-sector. This comprises others than MMF, such as equity funds, bond funds, mixed funds as well as ETFs, and in some jurisdictions hedge funds[9]. Securitization vehicles (SPV) are identified as sub-sector with a size of $5 trillion corresponding to 10% of the shadow banking sector. Finance companies, broker-dealer, finance holding companies and MMF are about the same size of $4 trillion assets, representing each

[8] Argentina, Australia, Brazil, Canada, Chile, China, Hong Kong, India, Indonesia, Japan, Korea, Mexico, Russia, Saudi Arabia, Singapore, South Africa, Switzerland, Turkey, UK and the US as well as the Euro Area)

[9] In some jurisdictions hedge funds data can not be separated

7% of the total NBFI. There individual size differs in each jurisdiction. MMF e.g. are mainly located in the US and Euro Area, representing 90% of the MMF industry globally. The size of the broker-dealer sub-sector for instance amounts 52% in the US. Finance companies are also largely concentrated in the US (43%) or japan (18%). Jurisdictions-specific entities represent the last sub-sector of the shadow banking system. US funding corporations (4-5%), Dutch Special Financial Institutions (4-5%), and hedge funds (0.4%).

Furthermore, the monitoring report (2012a) makes a statement regarding interconnection of banks and NBFI. To measure potential risk stemming from interconnections between banks and shadow banks direct credit exposures and funding dependency is used. Intermediaries pose credit and funding risk to each other via credit contracts, dependent on size and maturity structure of assets and liabilities. This analysis can be briefly summarized: there does exist high interconnection between banks and shadow banking entities, as already assumed intuitionally. In some jurisdictions, where there is a large dependency of NBFI on bank funding, there might also exist a dependency of banks on NBFI funding vice versa. This shows interdependencies via which stress could be transmitted in both sectors. Funding obtained by banks even increased in some jurisdictions in the period 2002 – 2011 (e.g. Australia, the Netherlands). For further evidence on this matter it is useful to analyze such changes to understand why the occurred and to identify the risks they might pose (Financial Stability Board, 2012a, p. 22ff).

As mentioned above, banks and NBFI are highly interconnected, whereby risks can arise. The monitoring report introduced a number of measures that are able to capture the risks descending through interconnection channels, notably: (1) Sector-to-sector exposures information measuring direct exposures between banks and non-banks using Flow of Funds data. This measure is useful for interconnections information between two sectors. Yet, data is only available in Japan and the Euro Area. In other jurisdictions it might be difficult to find data for detailed analysis. (2) The analysis of equity investment by financial institutions in other entities of the financial sector may also bolster the comprehension of interconnection an the risks associated. (3) Useful for an additional insight on interconnection is the gathering of data on funding instruments such as repos, as financial institutions are effect by changes in those markets (Financial Stability Board, 2012a, Annex 4).

The monitoring report 2012 also reveals shortcomings in the data availability and information gathering. In some jurisdictions, even those with a large NBSF sector, there does not exist a breakdown of assets and liabilities of banks and NBFI. Furthermore, there do persist domestic consolidation issues of data in different jurisdictions. As there are differences in Flow of Funds data and figures by prudential authorities. This might pertain problems of NBFI operating cross border as it hinders the accountability of activities to a specific domestic monetary statistics or Flow of Funds.

IV. Policy Framework

IV.1. Principals of future regulation

Concerning the regulation of NBFI, the FSB makes clear that one single approach will not fit all components, entities and activities of the shadow banking system and will cover all risks and problems associated with the various forms of NBFI. It needs to be differentiated according to necessities and capabilities. Therefore, general principals have been derived to assure efficient and striking regulation (see, Financial Stability Board (2011b): (1) Regulatory measures should be carefully designed and focused to **target** specific risks and externalities. Furthermore, regulators should keep in mind that regulation does have an impact and further consequences that may not be initially intended. For instance, impact on competition, moral hazard or other disruptive effects. (2) Secondly, policy recommendations and future regulation should be set up **proportionally**. Small and less interconnected entities should not be burdened with disproportional regulation and thereout arising costs. (3) To account for future development and emerging risks, regulation should be **forward-looking and adaptable**. New measures should not only cover the risks that became apparent but also address the potential evolving risks, the development and growth of entities and activities, as well as the changes of the structure of the NBFI system. (4) Another goal of potential regulation should be that measures are designed and implemented in an effective manner and should also consider international activities to avoid **cross-boarder arbitrage**. (5) Regulatory measures should be subject to **regular assessment** and review to adjust and improve efficiency if needed. Policy options could be used isolated or in combination with other. Hence, it should be kept in mind, that the combination of regulatory measures could mitigate disadvantages and unintended impact of some policy options.

IV.2. Banking regulation and indirect shadow banking regulation

Basel regulatory framework

The G20 leaders decided on Basel III regulatory framework endorsement in 2010 to contribute to a more resilient "global banking system by raising the quality, quantity and international consistency of bank capital and liquidity, constrains [concerning] the build-up of leverage and maturity mismatches, and introducing capital buffers above the minimum requirements that can be drawn upon in bad times" (Pillar 1) as well as internationally harmonized risk management and supervisory oversight (Pillar 2), public disclosure and market discipline (Pillar 3) (BCBS, 2012c, p. 1). Also, the new regulatory standards on banking supervision addresses consolidation and accounting issues, large exposure regimes and risk-based capital rules This regulatory approach was emphasized by the G20 in November 2011 (in Cannes) (G20 (2011)).

The BCBS introduced a framework to future banking regulation in 2010 [10]. The BCBS aims to raise and strengthen the quality, consistency and transparency of the regulatory capital in order to enhance the resilience of banks and hence of the overall financial system. Furthermore, regulators want to achieve a consistent definition as well as an understandable and harmonized terminology of capital across various jurisdictions in order to promote comparability and market assessment. This appears, referring to shadow banking regulations as necessary. The shadow banking definition can be considered to follow from a clear banking definition and in order to set up a clear and consistent definition it is crucial to define financial markets and banking exactly. The regulatory framework of traditional banks constitutes source for further shadow banking regulation and outstanding regulatory shadow banking needs may emerge as a residual. Hence, it is important for banking regulators to develop clear and globally consistent terminology of what the financial system and banking is and consequently consistent regulatory approaches to prevent regulatory arbitrage.

Also, the question arises if regulators can enunciate and implement regulatory approaches without the existence of a clear theoretical and model-based analysis of the system and economic effects of the interconnection between banks and NBFI. Procyclicality of the financial system was amplified by a variety of channels, e.g. account standards or asset valuation. Within the Basel framework regulator introduce measures (Capital Conservation Buffers and Countercyclical Capital Buffers) to counteract procyclicality.

Further proposed is the enhanced risk coverage, through stronger capital requirements to capture on and off balance sheet credit risks. Regulators turn attention to capital treatment of securitization and the trading book. The Basel framework aims the strengthen supervision of counterparty risks and exposures to the central counterparty. The introduction of a leverage ratio serves the purpose to supplement capital requirements and constraint banking sector leverage.

Risks need to be addressed in order to mitigate the destabilization of the overall system. Concerning liquidity, the BCBS introduces measures in form of the Liquidity Coverage Ration (LCR) and the Net Stable Funding Ratio (NSFR). Furthermore, supervisory monitoring, such as liquidity risk analysis, and principles for “"Sound Liquidity Risk Management” have been emphasized.

Addressing systemic risks and interconnection of market participants is another important issue, as shocks are transmitted through interconnection across the financial system and the economy. The regulation of systemically important institutions and the interconnections of financial market participants can be considered as a crucial issue for shadow banking regulation. Via interconnections, the traditional

[10] “Basel III: A global regulatory framework for more resilient banks and banking systems" (BCBS (2010/2011)) and “Basel III: International framework for liquidity risk measurements, standards and monitoring" (BCBS (2010))

as well as the shadow banking sector do exchange potential risks. A direct regulation of the traditional banks does influence the development of shadow banks in form of indirect regulation. The BCBS and the FSB in collaboration design quantitative and qualitative indicators to capture the systemic importance of specific financial institutions and develop specifical requirements concerning exposures amongst each other. The BCBS framework introduces requirements for liquidity provisions, as the suggested capital requirements as standalone demands are not sufficient (see therefore in detail BCBS (2010)).[11]

Basel III Implementation

The Basel III implementation review program is designed as a three level review. Focus on the ensurance of (1) the timely adoption of the Basel III accords, (2) the consistency of the Basel III, and (3) the consistency and harmonization of the outcome (here, initially focusing on risk-weighted assets). Perceptions regarding level 1 is frequently released as "Progress Report on Basel III implementation". So far, the following can be outlined. By May 2012, 21 of the 27 member states implemented the Basel II regulation. The USA, Argentina, China and Turkey are still implementing the Basel II rules. In the US Basel II mandatory institutions implement approaches to credit and operational risk. They are therefore called 'in parallel' run and report to supervisors. Institutions in parallel run are subject to Basel I regulation (BCBS, 2012a, p. 3). The preliminarily regulation Basel 2.5 is fully implemented by 20 member states. Russia and the USA have draft regulation but no final regulation to date. US authorities tend to finalize regulation after consideration of a public consultation process (BCBS, 2012a, p. 5). According to the BCBS there might occur challenges meeting the final deadline for Basel III implementation. There is not yet one single member state that has implemented a final regulation.

Basel III consistency assessment

A Basel II consistency assessment[12] was conducted in the Euro Area, the US and Japan. Since the implementation process is performed all findings are preliminary. In the Euro Area, Basel (I, II and II.5) is adopted by the Capital Requirements Directive (CRD). Basel III is going to be implemented in EU regulation through the CRD IV[13]. In addition to the CRD, which are transpositioned into national legislation

[11] For further detailed information on banking regulation and the Basel III accords, see Deutsche Bundsbank (2011), BCBS (2010), BCBS (2010/2011) and Basel III summary `http://www.bis.org/bcbs/basel3/b3summarytable.pdf`

[12] Basel III regulatory consistency assessment (Level 2) Preliminary report: Euro Area, United States of America and Japan. October 2012

[13] Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the access to the activity of credit institutions and the prudential supervision of credit institu-

by each state individually, Capital Requirements Regulation (CRR) is proposed too. This regulation (including references on technical standards and guidance) is not required to be adopted into national legislation, but to ensure common application across EU Member States. The EU Parliament, Council and the European Commission are still in discussion to agree an the final text of CRD IV and CRR. The assessment process in the Euro Area revealed that most of the key components are compliant or largely compliant with the Basel III framework. Substantial gaps do exist in the areas of a clear definition of capital and the Internal Ratings-based (IRB) approach. Furthermore, the assessment points out, that the EU approach of maximum harmonization may be at odds with the minimum harmonization concept proposed in the Basel rules. It is not inconsistent, but rather reflects the supra-national and complex structure of the Euro Area. Overall, the EU framework is geared to maximum harmonization, meaning harmonized banking rules and limited gaps between the approaches be on hand to national authorities (BCBS, 2012b, p. 8). Law adopted at EU level is agreed on by and applies to all member states. The Basel III rules apply to all banks in the Euro Area. The proposal for implementation of Basel II was released July 2012 as integrated capital framework (ICF) consisting of Basel III Notices of Proposed Rule making (NPR) and the Market Risk Final Rule. The ICF will adopt consistency within the constraints of the implementation of the Dodd-Frank Act[14]. The Dodd-Frank framework exists additionally to the Basel III framework and addresses capital requirements for banks (for further details on the Dodd-Frank Act framework see, Senate and House of Representatives of the United States of America (2010)).

IV.3. Regulatory reform of Money Market Funds

IOSCO mandate

The FSB already emphasized the need for regulation reforms of MMFs. A range of aspects concerning MMFs need to be raised in order to implement further regulation. This pertains, their role in funding markets (especially short-term funding markets) and contribution to the crisis of 2007 – 2009. It is important to research the overall role of MMF and their interconnection with other financial institutions and market participants. In order to adapt regulation, differences concerning cate-

tions and investment firms and amending Directive 2002/87/EC of the European Parliament and of the Council on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate (Text with EEA relevance) (SEC(2011) 952 final) (SEC(2011) 953 final). http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0453:FIN:EN:PDF

[14]Dodd–Frank Wall Street Reform and Consumer Protection Act – To promote the financial stability of the United States by improving accountability and transparency in the financial system, to end "too big to fail", to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes. http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf

gories, characteristics and systemic risk posed by the funds in different jurisdictions need to be analyzed. The significant size and role of MMFs within the financial system accents the need for monitoring and implementation of potential regulation. Due to the characteristics of deposit like instruments are MMF shares exposed to risk of the modern type bank run. Already existing regulatory initiatives and standards also need to be taken into consideration (Financial Stability Board, 2011b, p. 20).

The workstream on MMF risk analysis and reform options is executed and supervised by the Technical Committee of the IOSCO. The Consultation report "Money Market Fund Systemic Risk Analysis and Reform Options" (IOSCO (2012d)) was published in April 2012 with the objective to share the analysis regarding possible risks emanate from MMF and to map out possible policy options. A consultation period provided the possibility for authorities, governments, academics and the industry to comment regulatory approaches. The final report on regulatory possibilities was issued in November 2012. The report published in April 2011 mainly analyzed the features and characteristics that make MMF vulnerable to risks and consequentially possible regulatory measures. The aim of the MMF working stream is to implement common standards for management and regulation across various jurisdictions. The realization of regulatory standards may vary depending on local economic conditions as well as regional regulatory and legal structure (IOSCO, 2012e, p. 8).

Characteristics and development

The role of MMFs within the financial system can be elucidated by quantitative market data. The volume of assets under management amounts up to $ 4.7 billion worldwide in the third quarter of 2011. MMFs as a subcategory of the CIS comprises about 20% of the total mutual fund assets. The share of US and European MMF assets represent 90% of the global industry (see therefore, Poschmann, 2012, p. 13 and (IOSCO, 2012d, p. 1))[15]. 60% of MMF assets ($2.7 billion) are allocated in the US. To ensure that entities and schemes with similar objectives are captures by an appropriate regulation, the term MMF should be explicitly defined. Also, existing limitations concerning assets in which money market funds may invest, containing average weighted terms to maturity and weighted average life of the portfolio. In order to trace development and the impact of regulatory measures, authorities should regularly monitor MMFs development and vehicle similar to MMFs.

The run on several funds in 2008 alerted regulators that MMFs potentially raise systemic risk. It is agreed on, that they did not cause the crisis in the beginning. The run on different MMFs was just an indication of an overall unstable system and that MMFs played a significant role in spreading risk and amplifying the crisis

[15] http://www.ici.org/research/stats/worldwide/ww_10_12

(IOSCO, 2012d, p. 5). MMFs have different features and keep vulnerabilities which makes them systemically important and puts them into the focus of regulators.

Within the financial system, MMFs are important providers of short-term funding and diversified alternative to banks. As institutional investors, they provide funding to a variety of businesses, other financial institutions and even governments. A confidence shock of money market funds and the following redemption of shares can have a crucial impact on the funding market and broader economic circumstances (IOSCO (2012c)). Shareholders have an incentive for sudden redemption of shares before others do. They do so in the expectations that they might suffer a loss. MMFs are not equipped with a capital buffer of some kind of insurance to cover up those liabilities to pay. In order to meet redemption requests by investors, funds rather retain liquid resources than investing in commercial papers or other short-term instruments. This leads to funding problems for those relying on money market funds investments. It also made apparent the reliance of traditional banks to short-term funding and the significant role of MMFs in funding markets (IOSCO, 2012d, p. 7).

Another characteristic of MMFs is the connection with their traditional banking sector through investment of banks in money market fund shares. This creates further vulnerabilities. Hence, in stress periods fund may be confronted with large and simultaneous redemptions by banks.

In comparison with banks, MMFs can be considered as safe and diversified alternative to bank deposits. As collective investment schemes, they provide diversified and high class investment opportunities and enable investors to participate in favorable markets. MMFs also constitute an efficient cash management tools for different sophisticated investors and institutions (IOSCO (2012c)).

The reliance on capital support by MMFs might create risks for the capital sponsor. As the sponsor must cover for potential losses. This support and coverage might lead to contagion effects. This is another interconnection with the banking sector, as they can behave as MMFs sponsor (IOSCO, 2012d, p. 8). It has to be taken into consideration, that the support by the sponsor is implicit. Meaning, expected by the fund is not guaranteed. This uncertain expectations of liquid resources can enhance the likelihood of runs. Investors should explicitly be aware, that sponsors are not always able and willing to offer support. The IOSCO recommends that these warning should be included in the fund financial documentation (IOSCO, 2012e, p. 24).

Policy recommendations

To implement adequate MMFs regulation, recent trends and current regulation need to be contemplated. In the US, MMFs are regulated under Rule 2a-7[16]. Adopted pursuant to the Investment Company Act of 1940 all MMFs must be registered with the SEC. In the Euro Area, they comply with the Undertakings Collective Investment in Transferable Assets Directive (UCITS)[17] (Poschmann (2012)). To harmonize CISs, the Committee of European Securities Regulators (CERS) issued guidelines for CIS, now replaced by the European Securities Markets Association (ESMA)[18]. Embodiment of the UCITS directive varies across jurisdictions in the Euro Area. Implementation is, accompained by the simultaneous enforcement of the eligible assets directive [19]. Regulation arising from the crisis, are notably the harmonization of funds through CERS and now ESMA in the Euro Area, as well as an Amendment to rule 2a-7 in the US.

It is essential, that funds comply with strict criteria concerning credit quality and liquidity management. The interconnectedness with banks and other financial institutions and their role within the financial system makes their safety surpassing. The IOSCO report emphasizes, that policy options should reinforce the safety and robustness of MMFs (IOSCO, 2012d, p. 14). Authorities should be able to explain rational behind policy measures and regulatory changes, also in order to prevent unasked-for reactions.

The consultation report of April 2012 emphasizes the need for regulation for the following issues: **(1) mandatory move to variable Net Asset Value (vNAV)** and structural alternatives **(2) valuation and pricing framework**, **(3) liquidity management**, and **(4) reliance on ratings**. In the following, these aspects will be discussed. The use of constant NAV (cNAV) funds raise the expectations, that MMF shares are a risk-free cash element. It is expected, that a **move to vNAV** funds would counteract to this expectation and point out that MMFs are sensitive to losses and carry the potential risk of a run. Evidence suggests, that a vNAV reduces shareholders incentive to run through price transparency. A change to vNAV could reduce the risks associated with cNAC pricing. Variable NAV funds reduce the likelihood

[16]Investment and Company Act of 1940, Rule 2a-7 amended 2010 by the Securities and Exchange Commission (SEC) (http://www.sec.gov/rules/final/2010/ic-29132.pdf)

[17]Council Directive of 20 December 1985 85/611/EEC (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1985:375:0003:0018:EN:PDF) amended by directive 2009/65/EU (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:302:0032:0096:en:PDF), and for further execution 2010/ 43/EU (http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:176:0042:01:EN:HTML) and 2010/44/EU (http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:176:0028:01:EN:HTML).

[18]Defined in CESR/10-049 (http://www.esma.europa.eu/system/files/10_049.pdf)

[19]Eligible Assets Directive 2007/16/EU (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:079:0011:0019:EN:PDF) and CESR/07-044b (http://www.esma.europa.eu/system/files/07_044.pdf)

of a run as it allows for price fluctuation. Furthermore it improves the investors understanding of risk associated with the fund and makes a clear distinction between MMF shares and bank deposits. The move to vNAV will be challenging in certain jurisdictions and might require a transition period. A mandatory move to vNAV funds would at the same time mean to prohibit the use of amortized cost valuation. However, full immunity against MMF runs is not ensured even for vNAV funds. Within the consultation process respondents do not consider the risk of a run as sufficient reason to ban the use of cNAV ((IOSCO, 2012e, p. 23), (IOSCO, 2012d, p. 14), see also (EFAMA, 2012, p. 18)). The question arises, if a change in valuation, and thus higher cost and complexity reduces the expected risks adequately.

There is a number of other structural alternatives: implementation of buffers, insurance possibilities, Special Purpose Banks and a two-tier system. The **use of buffers** creates a capital reserve base (or backstop) by retaining a part of the income in order to meet potential losses. This liquidity backstop aims to incentive to lessen market freeze and keeps up the capacity of short-term funding. It enables flexible response to shocks and hence, sudden liquidity needs. Yet, the implementation of buffers might force MMFs to cope with accounting or tax challenges. The installation is affiliated with barriers and structural questions respectively optimal size and period to save up the liquidity buffer. The IOSCO is discussing three different types of buffers: (1) the issuance of subordinates equity shares, as a from of market funding, (2) shareholder-funded buffers, and (3) sponsor-funded buffers.

Furthermore, the IOSCO report (2012) suggests **insurances** as liquidity backstop. Insurances would, in case of capital loss and sudden redemptions, reduce or even eliminate the shareholders personal loss. Also possible is a government insurance backstop responsibility for catastrophic losses. This insurance possibility carries risks, as the high correlation of the insurance industry with the banking and funds sector.

The conversion of MMFs into a **Special Purpose Bank**, that is subject to regulation and oversight, might reduce the risk of runs. Hereby, MMFs receive access to government insurances and further lender of last resort facilities. On the other hand they will be subject to strict bank-like regulation requirements and supervision. In the context of monetary policy, central banks will be burdened with the enlargement of the discount lending facility. They have to meet the requested capital requirements, MMFS need to gather large amounts of equity in order to capitalize the small equity base. As a consequence, funds might reduce their amount of assets under management and hence the capacity to meet funding needs. For the overall financial market this leads up to a loss of relevant investment opportunities and limited availability of types of "deposit" (IOSCO, 2012d, p. 20). Overall, MMFs do not fully comply with the role of safe and alternative investment opportunity.

Also possible, is the introduction of a **two-tier system** rather than the mandatory change to vNAV funds. The FBS approaches two ways in implementing the two-tier proposal. Therefore, authorities permit both, cNAV and vNAV funds but limit

the conditions concerning risks. Here, investors can choose funds that meet their own needs. They choose between cNAV funds to enhance protection through participation in private liquidity facilities and other regulatory requirements and vNAV that are subject to certain regulatory requirements but are not obliged to have external liquidity access or other types of insurance. In times of stress the approach might prevent the shift out of MMFs and cause an internal shift from vNAV to cNAV. Also, the effectiveness depends on the investors' understanding of risk and their individual information needs. The second approach concerning two-tier systems on the other side claims a reservation of cNAV funds either for retail or institutional investors (IOSCO, 2012d, p. 22).

Another regulatory issue is the **valuation and pricing** of money market funds. A marked-to market accounting, carried out by vNAV funds, comes to greater transparency in terms of price development. Marked-to market accounting is able to picture a reliable, up-to-date market price and might lead to the reduction of the first mover advantage. Amortized cost valuation should only be used in limited cases. As the prohibition of amortized cost valuation does not fully address all systemic risk is issues. Marked-to market evaluation is costly and complex and will just be an estimate of the current value. The IOSCO also suggests, that the adopted cost valuation practice and the process of calculation should be reviewed on a regular basis (IOSCO, 2012d, p. 13). The disclosure process should be accompanied by further disclosure recommendations to inform investors about funds' practices regarding valuation procedures. This should make the difference between bank deposits and money market fund shares clear (IOSCO, 2012e, p. 18). The majority of respondents in the consultation process stressed the need of transparency about the risk associated with investment in fund shares in comparison with banks. It is important to set forth and outline the differences regarding liquidity, portfolio, transparency, risk, composition, and return as well as the absence of guarantees and the possibility of the potential loss (IOSCO, 2012e, p. 25).

Liquidity management of funds is also addressed by the IOSCO report. The aim is the reduction of redemption pressure at any time e.g. through liquidity requirements for funds or redemption restrictions (IOSCO, 2012d, p. 26). There do exist portfolio requirements regarding liquidity in the US and Canada, not so in the Euro Area. The fundamental objective could be to obtain international harmonization to create minimum liquidity requirements. This is mainly hampered by diverse classifications of liquid and illiquid asset in different jurisdictions. Alongside liquidity backstop there could also be requirements like redemption restrictions (e.g. the amount of shares for sale) or liquid fees for premature redemption of shares (for further information concerning the liquidity management of CIS see; IOSCO (2012f)).

Another way to create awareness of sudden redemptions are policies and procedures to evaluate the investor base regarding future cash needs, their approach to risk and sophistication. Regarding investor valuations, the question yet arises, to

which extend it is possible to evaluate the investor base and the individual sophistication without opposing the funds to unbearable costs. Furthermore, which criteria should investors formulate to describe a sufficient investor base. The IOSCO also recommends certain safeguards to enhance stability in the overall system, notably: limits on further purchases by one single investor, minimum holding period and longer notice period for redemption. Also, MMFs should conduct a regular stress testing based on historical and/or hypothetical events (IOSCO, 2012e, p. 14). Funds should also be able to react to exceptional market conditions and redemptions pressure with different tools.

The last issue addressed by the IOSCO is the **reliance of MMFs to credit ratings**, including quality assessment of money market instruments and improve meaning of AAA ratings, in order to avoid fire sales and herding behavior. The IOSCO published a report on principles regarding the reliance of ratings (IOSCO, 2012e, p. 17, see also Financial Stability Board (2010)). The internal risk assessment concerning credit worthiness should lie within the funds area of activities. External ratings should concern only the credit quality of instruments. Generally, credit rating agencies (CRA) should rather make an effort to educate investors about the risks associated with funds investment and the CRA rating methodology and mechanisms as well as differences. In this way they are able to evaluate the meaning of CRA ratings and potential effects of downgrades and reenact those downgrades. Furthermore, the enhancement of transparency in CRA rating mechanisms and methodologies could enable funds to react to downgrades and address potential adverse effects.

IV.4. Addressing other shadow bank entities

General framework

The workstream “other shadow banking entities" developed a policy framework consisting of three elements (see figure 2): (1) the first element comprises the assessment of entities and risk other shadow banking entities might oppose based on **economic functions**. Authorities should be able to identify sources of systemic risks stemming from those entities. It is important to link the possibility of systemic risk to economic functions and not to entities. (2) The adoption of **policy tools (toolkit)** that should apply to all economic functions and specific risks associated with individual functions.Therefore a toolkit to mitigate systemic risk should be developed. All tools should be proportionate to the degree of systemic risk. (3) The last element of this policy framework is the **information-sharing** among the authorities involved, to minimize gaps or possibilities of regulatory arbitrage and enhance adaptations and further developments of the policy rules (Financial Stability Board, 2012c, p. 5).

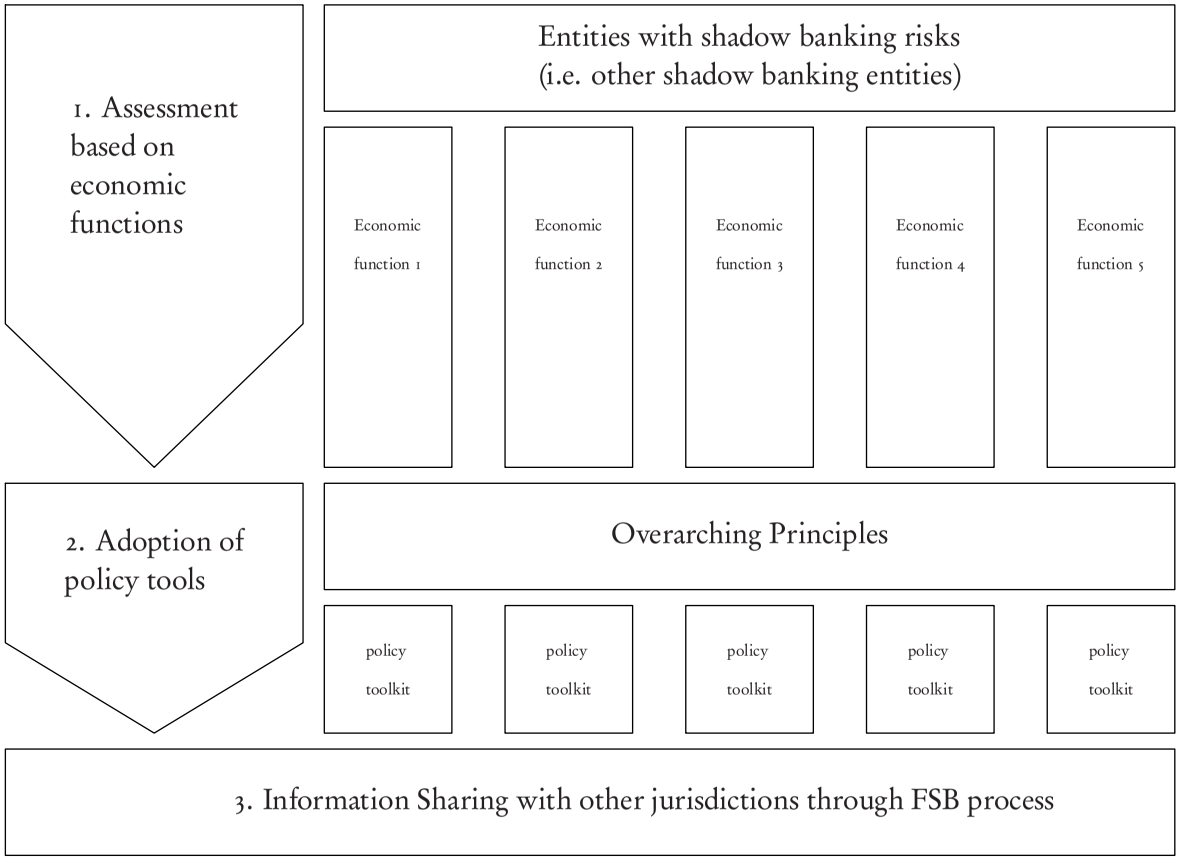

Figure 2: Overview of policy framework for other shadow banking entities based on Financial Stability Board (2012c).

According to the workstream (Financial Stability Board (2012c)) other shadow banking entities can be classified into five economic functions they can perform. This classification should be an internationally consistent, economic-based function and activities framework and needs to be taken into regulatory consideration. A policy toolkit was developed to address the risks posed through the involvement in those specific economic functions. The FSB implemented overarching principles. In order to apply the suggested regulatory measures, authorities need to define regulatory perimeters and bring entities in supervisory and regulatory oversight. It is considered to be important to collect and analyze all assessable information concerning liquidity and maturity transformation as well as leverage on a regular basis. The enhancement of disclosure and transparency regarding risk exposure, interconnection, and funding concentration in order to make informed decisions is considered important. The corresponding authorities should share information among each other to minimize potential regulatory gaps and new arbitrage effects. Thereby, new adaptations of the system and innovations should be detected. All actions taken need to be proportional. Therefore, costs and benefits need to be kept in mind

Economic functions

Management of client pool with features that make them prone to runs, might create the expectations, that certain investments will not lose value. However, investors need to be aware that they might face the risk of a run and experience a loss in value. Funds with external financing and substantial counterpart exposure invest in long-term assets. It is therefore costly and/or difficult to liquidate those assets in case of a run. (e.g. hedge funds). Funds with significant holdings in credit markets also fall under this economic function. They might be able to easily liquidate assets and not cause a run or other contagion effects, but it could impair the overall market conditions. In all cases it has to be made sure that client cash pool managers are indeed risky investments and not fully equivalent to bank deposits (see here MMFs workstream on emphasizing the difference of banking deposits and funds investment by investors). Those investments carry risks and investors need to be assure of this. The policy toolkit comprises restrictions on maturity of portfolio assets (duration and weighted average maturity) and consequently limits on desired risk-return profiles and mitigates risks that arise from maturity transformation. Also, the toolkit provides that regulators set limits on leverage that is created to enhance return. It should be required that sufficient liquidity buffers back up potential financial pressure. This prudent risk management is to be individually tailored to the entity type. Another proposed policy option is the management of liquidity risk through limited asset concentration, limited investment in illiquid assets and liquidity buffers. Illiquid and high concentrated asset classes are in case of a sudden redemption difficult and costly to be liquidated. Liquidity buffers are supposed to satisfy cash needs. However, these policy options have influence on

performance and capacity to invest. restrictions on the portfolio composition and use of liquidity backstops limit the funds investment ability. Cash pool managers should furthermore be able to install instruments to manage redemption pressure. This could include separation of impaired portfolio portions, redemptions gates, redemption fees, and the suspension of redemption (see also recommendations on MMFs).

Loan provisions dependent on short-term funding entities specialized on credit provision in certain sectors due to expertise and know how. This includes deposit-taking institutions not subject to regulation as banks are finance companies that either rely on bank short-term commitment lines or a parent company (e.g. auto mobile companies). Some institutions might have been created to circumvent regulation, internal risk management policies, or due to a good credit rating of the parent company, are able to lend at low costs. The FSB task force suggests equal prudential regulation to deposit-taking NBFI or prohibit the deposit-taking. Hence, competitive advantages compared to banks will be attenuated if NBFI are subject to the same prudent regulation. They are not able to offer funding and products with the same conditions. Another issue is to encourage entities to manage there credit risks to not build-up excessive leverage and to hold capital to cover up losses. Similar to client cash pool managing entities, regulator suggest here liquidity buffers, leverage limits as well as asset concentration limits. Entities should be restricted on particular types of assets regarding lender, sector or particular instrument, in order to reduce risks that are associated with those assets. Here, too, regulators should conduct a detailed monitoring of credit intermediation and interconnection with other entities.

Intermediation of market activities that is dependent on short-term and/or secured funding includes brokering services as well as brokerage to hedge funds. These institutions are exposed to vast liquidity risks (e.g. securities broker-dealers). Those entities should be regulated under regimes equivalent to banking regulation. Further policy options are similar to those already mentioned in prior paragraphs, liquidity requirements and capital requirements. Additionally, these entities should be restricted concerning the use of clients assets for instance for re-hypothecation purposes.

Another economic function encompasses the **facilitation of credit creation**. This creates additional risk of imperfect credit risk transfer and amplifies the creation of excessive leverage within the system and therefore leads to systemic instability. Entities that perform the facilitation of credit creation should, in order to cover up losses, provide financial guarantees and credit insurance. Regulatory authorities should enforce restrictions regarding scope and scale of their business. Guidelines and procedures must be established to ensure appropriate risk profiles. Also mandatory should be the enhancement of risk management containing loss modeling, and stress testing involving all relevant stress factors that could possibly occur in order to understand and value potential risks.

Securitization and funding of financial entities is to be considered as another economic function performed by other shadow banking entities. The transfer of assets and risk from banks and other non-bank entities constitutes massive maturity and liquidity transformation, leverage build-up and regulatory arbitrage, and consequently leads to systemic instability. Securitization entities or off-balance sheet entities (OBSE) fund long-term illiquid assets by short-term funds. Through securitization the NBFI sector is connected with the tradition banking through: (1) the asset sale and transfer, and (2) liquidity facilities provided by the banks as sponsor to the OBSE. Regulators should enact restrictions pertaining liquidity and maturity transformation, eligible collaterals and exposures. Further workout on the issue securitization will be discussed and investigated by the workstream on securitization by the IOCSO (see also workstream on securitization).

IV.5. Securitization issues

Securitization in general

Concerning securitization, the IOSCO in coordination with the BCBS was tasked to find regulatory approaches. Following a consultation report in April 2012, IOSCO issued the final report on "Global development in Securitization" in November 2012. The IOSCO addressed an overall analysis of global initiatives on securitization regulation (risk retention, transparency and standardization). For an analysis, the US and EU are named as the largest markets globally and of particular interest for regulators and capital market authorities. Both are similar, but independent regulatory regimes. Attempts and policy options undertaken need to support the recoverage of securitization markets globally and restore trust and confidence, and should prevent the creation of excessive leverage. To achieve those aims, the IOSCO and the BCBS want the following issues to be addressed: (1) risk retention by investor and originators, (2) improved and standardized disclosure, as well as (3) the assistance of investors to understand complex securitization products.[20]

Generally, securitization markets are crucial as they constitute a valuable and alternative funding market. It enables to raise funds from alternative and diversified sources. Through securitization the US housing in the 1980s was almost completely financed, even though, the full diversification benefits could not fully unfold. Furthermore, banks also rely on the funding through securitization markets and therefore depend on sound and reliable markets. With hindsight to the global financial crisis 2007/2008, financial markets and securitization markets were adversely effected by an overreliance on ratings, lack of investors due diligence and inadequate pricing of risk. Securitization markets are not purely domestic and cross border issuance as well as investment are crucial features. Cross border activities enable to

[20]IOSCO (2012a) and IOSCO (2012b)

diversify risks that arise locally and also entail broad and deep markets. Securitization markets vary in terms of terminology, underlying asses, forms and structure of issuance across jurisdictions. Those differences reflect divers regulatory regimes and can impose additional costs to market participants that interact cross border. It is desirable for all market actors to acquire consistency and integration in order to prevent additional costs (IOSCO (2012b)).

Data shows, that the securitization market in the US seems to be recovering. However, the european market is still weakened. To get a approximate picture about of securitization markets, several data can be consulted. A Securities Industry and Markets Association (SIFMA) statistic of 2011 used in the final report of IOSCO sets the size of the US non-agency issuance to $ 124 billion in 2011. Most of securitized underlyings in the US are auto and student loans. The european marked has peaked in 2008 with Euro 700 billion (whereat Euro 25 billion have officially been placed at the market, the majority was retained) and has now reached a level of Euro 207 billion (Euro 88 billion placed). In the following, observations and recommendations regarding risk retention, disclosure, standardization and other issues, as terminology, securitization process and CRA will be discussed and analyzed.

Risk retention

Already in 2009 the G20 pointed out, that originators and sponsors should be obliged to retain part of the risks connected with the underlying.[21] Risk retentions suppose to encourage certain actions. As sponsors and originators retain a proportion of the issued portfolio or underlying assets this might reduce adverse selection and other agency problems[22]. EU and US regulators attempt risk retention issue in different regulatory ways, comprising the overall approach, forms of retention and exemptions. Differences in regulation could impose frictions as access barriers, compliance costs and limited flexibility (IOSCO, 2012b, p. 16). In the Euro Area, retention is set out in the CRD II framework[23] and guidelines by the EBA. In accordance with CRD II, credit institutions in the Euro Area are prohibited from investing in securitized products, unless the originator or sponsor of the securitization process retains no less than five percent. Sponsors and originations are therefore constrained to issue issue appropriate quality and are forced to analyze and evaluate the corresponding risks of the underlying portfolio as they retain a proportion. By doing so, they signal applicable quality of the portfolio, overall transaction and are able to place their products at the market. In the US, regulation

[21] The G20 Pittsburgh Summit Leaders' Statement (http://www.g20.org/load/780988012Pitts).

[22] Agency problems and signaling, see Leland & Pyle (1977) and Gorton & Pennacchi (1995)

[23] CRD 2 DIRECTIVE 2009/111/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:302:0097:0119:EN:PDF).

under the Exchange Act[24] provides that a sponsor is required to retain an interest equal to no less than 5 percent of the credit risk connected with the underlying asset. Here, originators and sponsors are obliged to implement suitable due diligence as they keep a proportion of the risky exposure. The EU approach in contrast tend to protect investors. However, in this more indirect regulatory way, investors are uncertain about whether the originating parties do comply with the required risk retention demands and creates additionalcomplexity. Consequently, there are more disclosure requirements needed here. These global differences in regulation create overall tension and need to be addressed (IOSCO, 2012b, p. 18). The direct risk retention approach of the US conditions a more stringent due diligence process of the portfolio, as the issuer retains a proportion of the pure and undiversified risks associated with the underlying portfolio. In the Euro Area, retention requirements are attached to the investor side. Issuers are forced to provide stringent and precise due diligence in an appropriate manner in order to animate investors to invest. Issuers are therefore indirectly encouraged to retain risks. Furthermore, issuers are compelled to retain the required proportion on an ongoing basis. Meaning, that exposures and interests cannot be sold or hedged in any way and need to be hold on to.

The EU directive CRD II introduces risk retention with Article 122a and will apply to credit institutions that are subject to State Member authorization. For regulated credit institutions, in order to invest in credit risk of securitized positions, related sponsors and originators are required to retain, ongoing, a net economic interest of at least 5 percent. This retention can be structured in different ways. The issuer is obliged to retain at least 5 percent of the nominal value of each tranche sold or transferred (vertical slice). In the case of revolving securitization, issuers retain a pari passu share of no less than 5 percent of the nominal exposure value. Furthermore, issuers can retain a share of at least 5 percent of randomly selected exposures. Finally, it is possible to retain the first-loss piece of the transaction, and other tranches, so that the retention in total equals no less than 5 percent (European Parliament and Counsil, 2009, p. L302/110, CEBS (2010)).

The Exchange Act requires general risk retention of 5 percent. Acceptable forms are similar to those under CRD II. Under the vertical slice option, issuers are obliged to retain no less than 5 percent of each class in a securitization transaction. The horizontal retention option demands the retention of at least 5 percent of the pay last (first loss) residual of the credit risk of the entire securitized asset pool. An hybrid option constitutes the L-shaped retention option where a sponsor is obliged to retain at least 50 percent in form of a vertical slice and 50 percent in form of horizontal form. Furthermore, sponsors are free to use the representative sample option, whereas no less than 5 percent of an randomly selected representative sample of the securitized assets is being retained. Finally, in securitization

[24]Securities and Exchange Act of 1934 Section 15G amended by Dodd–Frank Act Section 941 (`http://www.sec.gov/about/laws/sea34.pdf`)

transactions in form of a revolving asset master trust, the sponsor typically retains at least 5 percent of the unpaid principal balance if all assets held (seller's interest) (Senate and House of Representatives of the United States of America, 2012, Section 15G p. 253ff amended through Senate and House of Representatives of the United States of America, 2010, Section 941 p. 515).

Both EU and US regulation comprises exceptions and safe harbor provisions. Here, too, regulations differs in significant manner across jurisdictions. US sponsors or originators do not need to retain any portion if ABS are collateralized by certain high quality assets. The definition covers high quality commercial loans, commercial real estate loans, automobile loans and residential loans, and also other loans that are backed by government insurance or guaranteed assets. Concerning the EU, retention is does not apply, if exposures are guaranteed by central governments or central banks, regional governments, local authorities and public sector entities of Member States; institutions to which a 50 % risk weight or less is assigned; or multilateral development banks (European Parliament and Counsil, 2009, Paragraph 3 p. L302/111). Authorities should be aware, that exemptions to risk retention should be limited and warranted (IOSCO, 2012b, p. 48). Authorities should seek an harmonized approach, as it facilitates cross border issuance tremendously.

In order to conduct proper cross border issuance, issuers of asset backed securities are expected to comply with retention requirements of those jurisdictions. Indeed some structures are able too meet all requirements. However, this also entails loss of flexibility, as complying to both requirements precludes certain securitization structures. Furthermore, it imposes costs of adoption (IOSCO, 2012b, p. 21). Exceptions impede cross border issuance and could bring out unindented consequences and incentive alignment. Competitive distortion might occur if foreign issuers want to comply with different requirements and use exemptions. Here, national issuers do have competitive advantages. Those aspects need to be taken into consideration while achieving global harmonization. Jurisdictions are at different levels concerning risk retention requirements. Authorities are compelled to develop clear and consistent approaches that explain requirements and the use of possible exemptions. Also in order to avoid competitive distortion and to revitalize international securitization markets.

Transparency and disclosure

To support the enhancement of transparency and hence more confidence in securitization markets it is essential to implement strong disclosure requirements. The aim is to well developed and harmonized minimum disclosure requirements for a number of jurisdictions. The analysis of US and EU markets points out, that there is existing regulation on upfront and ongoing disclosure. Upfront disclosure regulations varies in terms of public or private way of offering ABS. Public Placement: as yet, US regulation requires the disclosure of comprehensive data

about payment allocation, credit enhancements, fees and expenses payable (Senate and House of Representatives of the United States of America, 2010, Section 943). Defined in the Prospectus Directive, european regulations requires informations about credit enhancements, subordinates debt facilities and payment allocation and priorities[25](IOSCO, 2012b, p. 29). Private offering: according to CDR II and Alternative Investment Fund Managers Directive (AIFMD)[26], originators and sponsors need to supply more sufficient upfront information that are necessary for a comprehensive assessment including: credit quality and performance of the underlying, structure, cash flow, collateral support as well as stress testing, in order to satisfy information need of regulated investors (IOSCO, 2012b, p. 30).

Concerning ongoing disclosure, the content and form vary across jurisdictions. The EU Prospectus directive does not include specific requirements, meaning no required updates if significant changes occur. Institutions are solely obliged to inform if they do or do not supply investors with permanent and ongoing disclosure informations. Under the CDR II, issuers are obliged to supply investors with relevant information therewith those are enabled to comply with their due diligence obligations. US issuers are bound by Exchange Act 15(d) to disclose informations for the life of the security.

The disclosure of stress testing information and the outcomes of scenario analysis is one remaining issue and of special interest for investors to conduct own due diligence. The consultation of respondents shows that regulatory authorities should support the need for robust and timely information. This is imperative to facilitate investors to conduct detailed analysis and due diligence and thereafter make informed investment decisions and avoid CRA overreliance. In this process it is important provide tools and indicators to investors for them to conduct own stress testing which is geared to their own information needs and provide guidance (IOSCO, 2012b, p. 34). However, regulators should be aware of personal need for information that is dependent of the investors sophistication. Hence, the question arises, what kind and level concerning sophistication regulators want to address. It might appear ambitious to cover a wide range of heterogeneous investors. Regulators have to keep in mind costs and benefits. As it might be unusual and unbearable for the originator to meet all investors needs.

Associated with disclosure requirements is the question of disclosure standardization. Most jurisdictions do not require a standard format (presentation and documentation) for information disclosure in terms of nature, content and verification.

[25]DIRECTIVE 2010/73/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 amending Directives 2003/71/EC on the prospectus to be published when securities are offered to the public or admitted to trading and 2004/109/EC on the harmonization of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market (Text with EEA relevance). (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:327:0001:0012:EN:PDF)

[26]http://ec.europa.eu/internal_market/investment/docs/alternative_investments/fund_managers_proposal_en.pdf

The IOSCO sees standardization as useful in order to support transparency attempts and facilitates disclosure. There does exist asset-level disclosure in several jurisdictions. The IOSCO endeavor is to strengthen the existing framework rather than build a new. Important is the enhancement of harmonization in some way, to enable cross border issuance. Standardization of information and data enables investors to compare and analyze in order to make investment decisions (IOSCO, 2012b, p. 29). To achieve this, it might be useful to perform minimum harmonized information regarding risk and reward profiles, fees and expenses, possible scenarios and the securitization structure as well as performance information of the underlying portfolio. Equal access to data and informations without the intermediation of CRA. For this purpose, the pooling of information and installation of a comprehensive data base to support the approach of equal data and information access without overreliance on CRA. Hence, Investors are able to conduct investment analysis and make informed investment decisions.

Remaining issues

Further remaining issues as terminology, CRA and the securitization process are also addressed in the final report. Across jurisdictions, similar terms with different meaning have evolved over time. The development of standardized terms and definitions might enhance global comparability and transparency. However it might be challenging to implement standardized terms in certain areas with unique concepts of securitization products (IOSCO, 2012b, p. 44/45).

CRA do have a unique and privileged position within the financial system. However, it is an attempt of the IOSCO and other authorities to reduce the reliance on CRA ratings and help investors to conduct own due diligence. CRAs should beyond be obliged to published detailed informations about the breach of triggers (IOSCO, 2012b, p. 43).

Accounting authorities also address consolidation issues and securitization. Here, a collaboration of accounting standards and regulation is in demand. The International Accounting Standards Board (IASB) and the International Financial Reporting Standards Foundation (IFRS Foundation) for instance replaced the SIC 12 and IAS 27 by the new IFRS 10 (Consolidated Financial Statements) and IFRS 12 (Disclosure of Interests in other Entities). This approach by the IASB brings the treatment of OBSE into alignment with the US generally accepted accounting principles (GAAP). However the implementation and use of accounting standards differ globally (IASB (2011)).

Furthermore, issuers are encouraged to offer more standardized and less complex products to create sustainable securitization markets. Regarding liquidity investors of securitized products should be in times of market eruptions be able to liquidate in an appropriate time and without excessive discount. Here, regulators should focus on simplicity and standardization of securitized products and processes. Many

jurisdictions favor greater harmonization. It seems important to form global minimum harmonization to create greater comparability and transparency. This comprises harmonized standards for disclosure and standardization of processes as well as simplified access and pooling of information.

IV.6. Regulation of Repos and Securities Lending

FSB workstream

The workstream on Securities Lending and Repos developed policy options and recommendations to enhance regulations. Therefore, the FSB task force issued a consultation paper in April 2012 and a following Consultative Document in November 2012. Repo and securities lending constitute a significant refinancing option globally. They are important for price discovery and secondary market liquidity. Besides these benefits, the use of repo instruments can create additional leverage, leads to bank-like activities such as maturity and liquidity transformation and enhance the risk of becoming illiquid in case of failed follow-up financing (Financial Stability Board, 2012d, p. 2). Therefore, it is crucial to investigate the special characteristics, risks and possible approaches to mitigate the possibility of market failure. A majority of participating institutions in repo transactions are regulated entities. Banks for instance play a significant role and need to be taken into account while creating a new policy framework. To date, regulation focused on consumer protection rather than financial stability issues. Policy goal regarding the repo and securities lending market is to ensure transparency and limit risks emanating from those transaction to guarantee overall stability.

Repos and securities lending markets

In the beginning, the securities lending and repo market can divided into different market segments, as (1) securities lending segment, (2) leveraged investment fund financing and securities borrowing segment, (3) inter-dealer-repo segment and (4) repo financing segment (see Financial Stability Board (2012b)). The securities lending segment provides lending of securities to banks and broker-dealers by institutional or other sophisticated investors against a collateral, such as cash or other securities. This type of lending is typical for the US and Japanese market. The second segment assists financing of leveraged investments funds' long positions using revere repo transactions or margin lending. It comprises also the lending of securities by prime brokers to cover short positions of a hedge fund. The inter-dealer repo segment covers repo transactions of government bonds among broker-dealers and banks with an overnight maturity. The last segment constitutes the repo financing segment. Here, banks and broker-dealer borrow from cash-rich and sophisticated entities as funds (comprising MMF and others). Their key motivation is to finance

short-term liquidity needs. ABS are regularly used as collateral, which can be considered as a key driver of growing ABS issuance (see Gorton & Metrick (2010b), Poschmann (2012)). Those repo transactions can be conduct a bilateral or tri-party transactions.

The FSB workstream describes different drivers of the growth of the market (see, Financial Stability Board, 2012d, p. 5). The need of institution with a certain risk aversion for “money-like" instruments, triggered the widening of repo transactions in order to retain a required amount of liquidity. Those entities usually do not have regular or guaranteed access to central bank liquidity or similar guarantees. Market participants as MMFs, reserve managers, insurances and pension funds and others are normally excluded from deposit insurance or the invested cash holdings exceed the regular amount covered by deposit insurance. Through repo transactions, those entities are able to cover up short-term lending with collaterals and to store cash surplus safely and with interest. The amount of repo transaction grew significantly accompanied by the growth of institutional investors (see Gorton & Metrick, 2010a, p. 12). The growth of the repo segment is also driven by financing need of commercial banks and broker-dealers. Those entities use the collateralizes short-term funding as part of their own wholesale funding or securities dealing. Furthermore, high leveraged and insufficient creditworthy funds use repo and securities lending transactions to cover up short-term liquidity needs. The increased need of accessible securities for optimization of collateralization enhanced growth of repo markets. The acquisition of collaterals can be referred to as collateral mining. In doing so, banks and broker-dealers ensure the smooth conduct of repo and security lending transactions. Another driver that enhanced growth of the repo market has been lending of securities by institutional investors to generate additional income.

The FSB (2012d) differentiates between pure shadow banking risks and risks that span traditional as well as shadow banking. Pure shadow banking risks constitute risks caused by direct use of repos as money-like, short-term liabilities and securities lending as collateral reinvestment instrument enhance the use of maturity and liquidity transformation outside the banking system and hence, poses risks to the overall stability of the financial system. Regulators and authorities could counteract those activities by enhancing transparency, limitation of risks arising through build-up of leverage and also the limitation of reinvestment of cash collaterals. Risks that arise from the interconnection of banks and shadow banks are referred to a risks that span banking and shadow banking. Those risks include the variation in asset values that have tendency to increase procyclicality of leverage, risks of fire sales as cause of a counterparty default and sudden redemption, and inadequate valuation of assets. Furthermore, the re-use and re-hypothecation of collaterals may rise risks and associated problems. Investors may be uncertain about the source, use and treatment of collaterals. Policy goals encompass mainly the standardization and transparency of valuation as well as documented use of collaterals.

Policy recommendations

Various approaches to enhance the stability of repo markets and the overall stability of the financial system are proposed. The issues are related to transparency improvement, specific regulatory issues as well as recommendations concerning structural aspects. To enhance transparency within the repo and securities lending market the provision of valuable information needs to be expanded.

To date, banks and other major counterparties in repo transactions were regulated and have been required to enhance consumer protection and risk management of lenders and borrowers. As Basel regulation is not harmonized across jurisdictions and not fully implemented, regulation of repo transactions varies. Next to banks, as regulated parties in an repo transaction, also investment funds and insurance companies are restricted and regulated by different requirements. This comprises the management of counterparty credit risks, liquidity risks and collateral guidelines (See for more details Financial Stability Board (2012b)).

The FSB approaches focus on borrowing via the repo market, enhanced maturity and liquidity transformation, investment of safe cash collaterals in risky investments and collaterals swaps. To address the stability of financial markets regulation should focus on the enhancement of transparency in complex and rapidly developing markets and mitigation of procyclical leverage build-up. Furthermore, reuse and re-hypothecation of collaterals as well as re-investment of cash collaterals should be addressed. In order to avoid fire sales and other risks regulators need to develop sufficient valuation and management practices.

The consultative document on repos and securities lending (2012) publishes policy recommendations addressing transparency, disclosure and reporting, general regulation and structural aspects of the repo and securities lending segment. The repo and securities lending market is considered to be complex. The FSB recommends to improve transparency in order to detect and monitor risks stemming from lending activities appropriately. Different types of data are useful to improve regulatory reporting and enhance market transparency and standardization. Data collection is conceivable through regular reporting, trade repositories and market surveys coordinated by the FSB. The FSB Data Gaps Group developed a comprehensive overview and consistent framework to pool and share relevant data.

To improve corporate disclosure, institutions should frequently disclose comprehensive information about exposures and activities in order to improve investors' and authorities' visibility into their activities. So far, disclosure practice is in comparison with transactions and activities poorly. Enhanced disclosure should comprise sources and use of collaterals. This could be arranged as additional footnote information, templates for firms on basis of Basel Pillar 3 or more quantitative information. The FSB focuses also on improved reporting to end-investors. Reports of institutions involved in repo and securities lending must deliver appropriate information to investors in order to make informed investment decisions. This

should include for instance global data, such as securities on loan relative to assets under management and also absolute data, counterparty information and concentration, and specific data breakdown (repo, revese repo, re-use, re-hypothecation).

Further recommendations relate to investment of cash collaterals, re-hypothecation, haircuts and standards for valuation and management. Minimum haircuts and minimum standards to calculate haircuts may limit the build-up of excessive leverage and enhancement of procyclicality. Haircuts are calculated to cover declines in asset values and should therefore capture risks. They reflect the expected liquidity in all market conditions and the risk of price fluctuation in stress times. Risk as the liquidation of large exposures, counterparty concentration and default should be taken into account. The FSB demands for minimum standards and guidelines for methodologies to calculate haircuts appropriately. Furthermore, the consultative document introduced the framework of a numerical floor on haircuts in order to limit leverage build-up and procyclicality. These floors should work alongside the minimum requirements and guidelines of haircut calculation.

Another approached issue is the investment of cash collaterals. The FSB intends to minimize the risk stemming from cash collateral reinvestment through the introduction of minimum standards. Therefore, high-level principals were derived (see therefore Financial Stability Board, 2012d, p. 20). Investors of cash collaterals should consider unexpected request of cash collaterals that can be recalled any time at short notice. Investment guidelines and strategies should take this into account. Furthermore, the use of cash collaterals should be consistent with the overall investment policy of the institutions in order to add no further risks. For the purpose of enhanced transparency and disclosure needs, transactions should be properly documented and communicated to all stakeholders. Those guidelines should be approved, documented and regularly reviewed. To mitigate risks as liquidity, maturity and other risks, investments should be limited and in line with consistent risk management structures.

To arrange the re-use or re-hypothecation of collaterals properly to mitigate risks and excessive leverage build-up, the FSB claims more safeguards, sufficient disclosure and adequate regulation of liquidity risks. This enhances investors' understanding of exposure. Harmonization of re-hypothecation requirements can avoid cross border arbitrage. Furthermore, re-hypothecation activities should not encompass transactions for the purpose of own-account activities.

As important structural aspect the consultative report introduces central clearing counterparty (CCP). This multilateral netting might reduces the interconnection of institutions within the market. Furthermore, a central counterparty leads to standardized and central data. However, benefits and costs of this CCP need to be taken into account, as moral hazard problems and associated costs may arise (for detailed information see Financial Stability Board (2012d)).

V. Conclusion

In recent years the shadow banking system has moved into the focus of financial market regulators and other market participants. The growth of the almost unregulated system makes supervision and further investigations apparent to ensure financial stability of the traditional banking and the overall financial system. The G20 tasked the FSB and other collaborating authorities (IOSCO and BCBS) to develop policy recommendations for efficient regulation to strengthen stability. In order to develop and implement possible recommendations the entities and activities of the shadow banking sector need to gather all relevant information about the sector.

As shown, the definition has a crucial impact on the estimated size of the shadow banking system as well as the need for regulation. This makes clear that initially regulatory authorities need to decide on a clear and common definition. As the shadow banking sector comprises a system of multiple entities conducting a wide range of activities the definition has to capture all parts of the system and the intermediation chain. Regulators agreed that the definition should follow a rather functional approach that applies to economic substance rather than form or entity. Furthermore, an efficient definition has to be flexible and forward-looking in order to react to innovation and other changes. Regulatory authorities and academics developed a number of definitions. For a further analysis and the development of policy recommendations the FSB shadow banking definition was used.

In order to receive a comprehensive picture of the system the FSB introduced a mapping and monitoring process. To ensure an efficient monitoring and reliable data, the monitoring should be able to collect relevant data and information on a regular basis. The monitoring process should adapt to regional conditions and keep in mind specific characteristics and features of each jurisdictions in order to make qualified statements. The FSB introduced a two-step monitoring process that gathers quantitative and system-wide in the first step and narrows down to specific systemic risk factors and regulatory arbitrage concerns. The monitoring report (2012a) estimates the size shadow banking system at $ 67 trillion. The monitoring and evaluation of the system reveals major shortcomings concerning data. Data used in the monitoring process has limited validation. Authorities need to generate more specific and granular data, that is comparable, reliable and for the purpose of shadow banking valuation. Furthermore, data used needs to be standardized and capture domestic differences in order to make justified statements about the system.

The workstreams processed by the FSB, IOSCO and BCBS worked out a number of policy recommendations. Workstream 1 concentrated on traditional banking regulation and indirect regulation of the shadow banking sector. Due to interconnections a prudential banking regulation has a crucial impact on shadow banking. Strengthened regulation might cause regulatory arbitrage effects that triggers the growth of the shadow banking system and create new instability. The IOSCO was

tasked with the development of policy recommendations regarding MMFs (WS2) and securitization (WS4). Main recommendations regarding MMFs comprises in the first place liquidity buffers, insurances, enhanced valuation and pricing, sound liquidity management as well as a mandatory move from cNAV to vNAV. Concerning securitization, recommendations concentrate on harmonized risk retention standards and exemption as well as enhanced disclosure, transparency, and standardization. The FSB itself addressed other shadow banking entities (WS3) and the repo and securities lending segment (WS5). Regarding other shadow banking entities the FSB task force developed a framework bent on the economic function of other shadow banking entities. Referring to those economic functions the task force developed individual policy toolkits that address emerging risks. Recommendations for the repo and securities lending segment concerns enhanced disclosure and reporting, haircuts, re-use and re-hypothecation, and re-investment of cash collaterals as well as the introduction of a central clearing counterparty. Overall it becomes apparent, that regulators should generally focus on enhanced transparency and standardization. Furthermore, thinly capitalized shadow banking entities should be covered with sufficient liquidity buffers to bear severe market condition.

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Appendix – Definitions of Shadow Banking

Financial Stability Board (2011a)	Credit intermediation involving entities and activities outside the regular banking system, (1) systemic risk concerns, in particular by maturity/liquidity transformation, leverage and flawed credit risk transfer, and/or (2) regulatory arbitrage concerns"
European Commission (2012)	Entities operating outside the regular banking system engaged in one of the following activities: (1) Accepting funds with deposit-like characteristics, (2) performing maturity and/or liquidity transformation (3) undergoing credit risk transfer, and/or (4) using direct or indirect leverage. Activities that could act as important source if funding for non-bank entities: (1) securitization, (2) securities lending, and/or (3) repos.
Tucker (2010)	Instruments, structures, firms or markets which, alone or in combination, replicate, to a greater or lesser degree, the core features of commercial banks, monetary or liquidity services, maturity dismatch and leverage.
Tucker (2012)	Shadow banking comes in a lot of shapes and colors
Pozsar *et al.* (2010)	Shadow banks are financial intermediaries that conduct maturity, credit, and liquidity transformation without access to central bank liquidity or public sector credit guarantees. Examples of shadow banks include finance companies, asset-backed commercial paper conduits, limited-purpose finance companies, structured investment vehicles, credit hedge funds, money market mutual funds, securities lenders, and government-sponsored enterprises.

Bernanke (2012)	Shadow banking, as usually defined, comprises a diverse set of institutions and markets that, collectively, carry out traditional banking functions — but do so outside, or in ways only loosely linked to, the traditional system of regulated depository institutions. Examples of important components of the shadow banking system include securitization vehicles, asset-backed commercial paper (ABCP) conduits, money market mutual funds, markets for repurchase agreements (repos), investment banks, and mortgage companies.
Financial Crisis Inquiry Commission (2010)	Shadow banking refers to bank-like financial activities that are conducted outside the traditional commercial banking system, many of which are unregulated or lightly regulated. Many of the activities performed within the shadow banking system take funds from savers and investors and ultimately provide them to borrowers. Within this broad definition are investment banks, finance companies, money market funds, some hedge funds, special purpose entities, and other vehicles that aggregate and hold financial assets.
Gorton & Metrick (2010a)	In its broadest definition, shadow banking includes familiar institutions as investment banks, money-market mutual funds, and mortgage brokers; rather old contracts, such as sale and repurchase agreements (repo); and more esoteric instruments such as asset-backed securities, collateralized-debt obligations, and asset-backed commercial paper.

Ricks (2010)	Shadow banking refers simply to maturity transformation – the funding of pools of longer-term financial assets with short-term (that is, money-market) liabilities that takes place outside the terms of the banking social contract. A non-exhaustive list of shadow banking institutions would include: repo-financed dealer firms; securities lenders; structured investment vehicles (SIVs); asset-backed commercial paper conduits; some varieties of credit-oriented hedge funds; and, most importantly, money market mutual funds, which absorb other forms of short-term credit and transform them into true demand obligations.
Gennaioli *et al.* (2011)	Shadow Banking (securitized banking) refers to origination and acquisition of loans by financial intermediaries, the assembly of these loans into diversified pools, and the financing of these pools with external debt, much of which is short term and supposedly riskless.
Kocjan *et al.* (2012) Deloitte Shadow Banking Index	Shadow banking is a market-funded, credit intermediation system involving maturity and/or liquidity transformation through securitization and secured-funding mechanisms. It exists at least partly outside the traditional banking system and does not have government guarantees in form of insurance or access to the central bank.

Appendix – Overview Policy Recommendations

Worktstream 1 Banking Regulation	
Capital	Pillar 1 (1) Capital - quality and level of capital - Capital loss absorption - Capital Conservation Buffer - Countercyclical Buffer (2) Risk coverage - Securitization - Trading book - counterparty risk central counterparty exposure (3) containing leverage - leverage ration Pillar 2 Risk management and supervision Pillar 3 Market discipline and disclosure requirements
Liquidity	- liquidity coverage ration - net stable funding ration - Principles for Sound Liquidity Risk Management and Supervision - Supervisory Monitoring

Workstream 2 Money Market Funds	(1) structural alternatives - mandatory move from cNAV to vNAv - Special Purpose Bank (under pudential banking regulation) - Insurances - Liquidity Backstops and Buffer - Two-tier system (2) Changes in valuation practice (amortized cost accounting vs. marked-to market accounting) (3) enhanced liquidity management (4) investors base valuation (5) reducing reliance on CRA ratings
Workstream 3 other shadow banking entities	- investment restrictions (portfolio assets) - redemption restrictions (impaired portfolio option, redemption fees, redemption gates, suspension of redemption) - liquidity buffers - liquidity risk management (2) Loan provisions dependent on short-term funding - prudential regulation of prohibition of deposit taking - liquidity buffer leverage limits asset concentration limits detailed monitoring

Workstream 3 other shadow banking entities	(3) Intermediation of activities dependent on short-term funding - liquidity requirements capital requirements restrictions on asset-use (re-hypothecation) (4) Facilitation of credit creation - enhancing risk management (loss modelling, stress testing) restrictions regarding scope and scale of business (5) Securitization and funding of financial entities liquidity and maturity transformation restrictions eligible collaterals and exposure restrictions
Workstream 4 Securitization	(1) risk retention (2) enhanced transparency and disclosure (upfront and ongoing disclosure disclosure standardization) (3) standardization of terminology (4) Process and Product standardization (product registration) (5) limited reliance on CRA ratings

Workstream 5 Repos and Securities Lending	(1) Valuation and management practices (2) Disclosure (exposure, activities, source and use of collaterals counterparty information and concentration, data breakdown) (3) Enhanced reporting to end-investors (4) minimum haircuts and standardized calculation (5) standards and restrictions for cash collateral investment (6) standards and restrictions on re-use and re-hypothecation (7) central clearing – central counterparty (CCP)

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