FINANCIAL STABILITY BOARD

# Transforming Shadow Banking into Resilient Market-based Finance

## Re-hypothecation and collateral re-use: Potential financial stability issues, market evolution and regulatory approaches

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# 1. Introduction

On 29 August 2013, the FSB published its *Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos*[1] (hereafter the August 2013 Report) which set out policy recommendations for addressing financial stability risks in relation to securities lending and repos (hereafter securities financing transactions). Policy Recommendation 8 of the August 2013 Report stated that "an appropriate expert group should be established to examine possible harmonisation of client asset rules with respect to re-hypothecation, taking account of the systemic risk implications of the legal, operational, and economic character of re-hypothecation".

In light of this recommendation, the FSB established the Re-hypothecation and re-use Experts Group (hereafter REG) to take stock of the current regulatory approaches on re-hypothecation of client assets and examine their possible harmonisation. REG's mandate was broadened to also include review of possible financial stability issues regarding collateral re-use more generally.

To develop its findings in these two areas, REG has structured its work into three distinct phases:

(i) Performing a stocktake of the current regulatory approaches and potential financial stability issues associated with re-hypothecation of client assets;

(ii) Assessing the evolution of industry practices in relation to re-hypothecation, collateral re-use and client asset protection through the organisation of several informal meetings with market participants in 2015; and

(iii) Outlining the cases for a possible harmonisation of regulatory approaches to the re-hypothecation of client assets and potential financial stability issues associated with collateral re-use that may warrant further work.

The findings from these three phases were reviewed and endorsed by the FSB Plenary in November 2016, and are summarised in this document. Section 2.1 sets out conceptual definitions of re-hypothecation and collateral re-use for purposes of this document. Sections 2.2 and 3, respectively, discuss the importance of re-hypothecation and re-use to market functioning and the potential financial stability risks they may pose. Section 4 summarises both recent experience and the evolution of regulation related to re-hypothecation and re-use, following the 2007-09 financial crisis. The document concludes with a discussion of the possible harmonisation of regulatory approaches to re-hypothecation of client assets (Section 5); and the residual financial stability risks associated with collateral re-use (Section 6).

As stated later in this document, the FSB believes there is currently no immediate case for harmonising regulatory approaches to re-hypothecation of client assets. At the same time, the FSB encourages its member jurisdictions to implement Recommendation 7 of the August 2013 Report, as it serves to provide a common basis for the design of regulations with respect to re-hypothecation of client assets.

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[1] FSB (2013).

In addition, the FSB considers that appropriately monitoring collateral re-use at the global level will be an important step towards obtaining a clearer understanding of global collateral re-use activities in the securities financing markets and, therefore, reaffirms the importance of implementing the FSB *Standards and Processes for Global Securities Financing Data Collection and Aggregation* published in November 2015.[2] The FSB furthermore encourages national/regional authorities to consider monitoring collateral re-use activities beyond securities financing transactions as appropriate. In this regard, the FSB has also published its final report on measure of non-cash collateral re-use, which will be included in the November 2015 global securities financing data standards.[3]

[2] FSB (2015b).

[3] FSB (2017).

# 2. Conceptual definitions of re-hypothecation of client assets and collateral re-use[4]

## 2.1. Defining re-hypothecation of client assets and collateral re-use

For the purpose of this document, "re-hypothecation" is defined narrowly as "any use of client assets by a financial intermediary". In a typical re-hypothecation transaction, securities that serve as collateral for a secured borrowing (e.g. a margin loan extended to a hedge fund) are further used by the dealer or bank making the loan. Frequently, the collateral taker in the first transaction pledges the securities to one or more third parties to obtain financing to fund the margin loan or uses them to facilitate other transactions for clients (e.g. short sales). In some instances, where permitted by the relevant regulatory regime, financial intermediaries may use client securities to finance other activities not directly related to clients, including inventory or proprietary trading positions.

In contrast, the "re-use of collateral" is not limited to the use of client assets. The re-use of collateral broadly includes "any use of assets delivered as collateral in a transaction by an intermediary or other collateral taker". For example, in a repurchase transaction (repo), a dealer needing short-term cash to finance its inventory or proprietary trading positions may provide its counterparty with securities (collateral) and a commitment to repurchase the same or similar collateral in the future at a fixed price in exchange for cash. Where permitted by the applicable regulatory regime, the cash lender (i.e. collateral taker) may then re-use such securities to, among other things, pledge as collateral in a separate transaction with a third party.

## 2.2. The importance of re-hypothecation and collateral re-use to market functioning

The availability of collateral is becoming increasingly important, in part driven by regulatory requirements (e.g. initial margin requirements for non-centrally cleared derivatives). The re-hypothecation of client assets and the re-use of collateral increase the availability of collateral, reduce the cost of using collateral, and consequently reduce transaction and liquidity costs. They also support the general functioning of markets, particularly clearing and settlement processes which rely on collateral.

These features may become more relevant for market participants in the near term as new prudential regulations come into effect (e.g. the Basel III framework) and financial intermediaries may seek to enter into transactions to obtain liquid collateral to satisfy these new requirements.

The specific benefits of re-hypothecation and collateral re-use to market functioning are set out below. Any benefits resulting from re-hypothecation would also apply to collateral re-use as re-use also encompasses re-hypothecation of client assets.

### *2.2.1 Increasing lending capacity while lowering funding costs for both financial intermediaries and their clients*

When providing secured funding to a client, a bank or a dealer may fund the client loan through a securities financing transaction (e.g. general collateral repo). For this purpose, client's securities are often re-hypothecated or re-used by the financial intermediary in the broader repo

[4] These are conceptual (not legal) definitions used for the purpose of the FSB-REG work.

market.[5] As long as the haircut (the degree of over-collateralisation) paid by the client is higher than the haircut paid by the financial intermediary in the repo market, the transactions can be considered at least liquidity-neutral for the financial intermediary.

All else equal, the re-hypothecation of client assets allows the financial intermediary to operate with a smaller stock of its own securities and thus reduces balance sheet costs (e.g. capital costs). The extent to which financial intermediaries rely on re-hypothecation may vary by type of financial intermediary and sources of funding. For example, broker-dealers may rely on using customer securities to finance customer transactions to a greater extent than banks (which have access to customer deposits as a source of funding). Absent re-hypothecation, the financial intermediary would have to finance this activity with more expensive liabilities, resulting in higher rates for the client or lower returns for the financial intermediary. Therefore, re-hypothecation lowers funding costs for both financial intermediaries and clients under normal conditions, contributing to the availability of funding and thus market functioning.

Moreover, if a financial intermediary is allowed to re-hypothecate client assets to finance its own business (as distinct from funding its client's activities), the funding costs for its inventory positions and proprietary trading activities are reduced further.[6] This net funding benefit arises when haircuts in securities borrowing transactions are higher than in securities lending transactions, and further expanded if client cash is also available (and permitted to be used). This benefit increases the financial intermediary's revenue and may in turn, under some circumstances, translate into lower cost funding for its clients and thus greater provision of market liquidity.[7]

#### *2.2.2 Reducing the costs associated with long and short positions in equities and other securities, thereby facilitating price discovery and efficiency in markets*

Re-hypothecation and collateral re-use can reduce the costs associated with long and short positions in equities and other securities, thereby facilitating price discovery and efficiency in markets. For example, financial intermediaries can temporarily obtain securities by entering into securities borrowing transactions from third parties or from their clients, and use them to lend to other clients for the purpose of establishing short positions. Re-hypothecation and collateral re-use thus facilitate the maintenance of clients' short positions by reducing transaction costs and consequently support efficient markets. Moreover, they also enable market makers to hold relatively low inventory levels and, where permitted, allow them to access securities held by third parties or on behalf of their own clients via re-hypothecation. This can reduce the cost of trading equities and other securities, increase returns for the owners of borrowed securities, and improve the efficiency of financial markets.

In sum, re-hypothecation and re-use of collateral support the flow of collateral as well as funding liquidity, and therefore help to bring liquidity to where it is most needed. They allow firms to raise more financing than would otherwise be possible and can contribute to the liquidity of securities' markets.

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[5] Kirk et al (2014).

[6] Monnet (2011).

[7] This mechanism has been theoretically modelled in some recent academic papers (e.g. Infante (2014) and Eren (2014)).

### 2.2.3 *Mitigating pressures on collateral supply that may be associated with increased posting of initial margin pursuant to OTC derivatives or securities financing transactions*

Through re-hypothecation of client assets and collateral re-use, securities can theoretically be used multiple times to collateralise different derivative or securities financing transactions, increasing the effective supply of collateral assets for a given stock of securities. Re-hypothecation and collateral re-use therefore can increase the availability of securities collateral and thereby mitigate both transitory and longer-term pressures on collateral supply.

### 2.2.4 *Enhancing market functioning under normal and stressed conditions, by facilitating securities settlements and potentially reducing "fails"*

A "settlement fail" occurs when either the seller does not deliver the securities to the buyer or the buyer does not pay cash to the seller of the securities on the date originally agreed. Settlement fails may occur for many reasons and may not only lead to credit and liquidity risks for the parties involved, but also discourage the lending of securities, since potential lenders may withhold their securities rather than assume the risk that lent securities will not be returned.

In general, a larger pool of available securities increases the probability of a successful settlement. Re-hypothecation and collateral re-use effectively expand the pool. If a party is otherwise unable to deliver specific securities, these may be borrowed (in some cases after being re-hypothecated by other financial firms) to complete the settlement process. Therefore, re-hypothecation and collateral re-use facilitate under normal circumstances securities settlements and reduces the potential for "fails".

### 2.2.5 *Supporting the implementation of monetary policy*

Unlike other benefits as identified above that apply to both re-hypothecation of client assets and re-use of collateral, supporting the implementation of monetary policy is particularly relevant in the broader context of collateral re-use.

Many central banks rely on secured transactions to implement monetary policy. For example, central bank liquidity provided to banks through credit operations is secured by collateral. Moreover, during the crisis, in response to the increased demand for government securities and the unwillingness of cash providers to accept other forms of collateral, some central banks created facilities that allowed banks to upgrade their collateral through assets swaps. Central banks also implemented longer term open market operations in order to address the shortening of maturities on financial markets.[8] In the aforementioned cases, the ability to re-use collateral facilitated access to central bank liquidity.

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[8] Hördahl and King (2008).

# 3. Potential financial stability issues in relation to re-hypothecation of client assets and collateral re-use

Although re-hypothecation of client assets and collateral re-use may bring benefits to the financial system, they may also pose potential financial stability issues, such as those set out below.

## 3.1. Risks arising from obstacles to clients accessing their securities

The re-hypothecation or re-use of client assets may create operational impediments that hinder clients from promptly accessing their securities in the event that an intermediary faces insolvency. Problems may occur when client assets are not appropriately segregated or when a conflict of rights on available securities arises.[9] Depending on the insolvency regime, assets may also remain "frozen" in insolvency proceedings for a longer time due to the effects of stays and moratoria.

In the case of professional clients, a loss of access to securities may inhibit the clients' ability to adjust their positions. This inability to actively manage and de-risk portfolios when access to the collateral is interrupted may create potential second order effects across the broader financial markets.

## 3.2. Regulatory arbitrage in the presence of non-harmonised re-hypothecation regimes

Different limitations on re-hypothecation across jurisdictions may incentivise cross-border regulatory arbitrage. Differences in transparency requirements, the availability of client assets for re-hypothecation, and asset protection provisions may lead to intermediaries shifting activity among instruments or structuring cross-border exposures where clients use the services provided by intermediaries in other jurisdictions. For example, a significant share of Lehman Brothers' global prime brokerage business was centred in London-based Lehman Brothers International Europe. This entity could provide lower-cost funding to its clients than could its US-affiliate, Lehman Brothers Inc. (LBI), reportedly due to different regulatory approaches to re-hypothecation.[10] Such a shift of activity may lead to increased cross-border exposures and global interconnectedness, potentially complicating crisis management and resolution.

Where there is a lack of understanding regarding different regulatory regimes and the associated risks, uncertainty and confusion may arise with respect to asset protection provisions and clients' rights upon a financial intermediary's insolvency. Although some national and international work has been devoted to addressing these issues following the global financial crisis, the complexities of cross-border exposures may still have potential financial stability implications, for example, if clients seek to rapidly move positions or novate transactions as the differences in regimes come into focus while concerns about intermediaries mount.

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9 For the latter, in certain jurisdictions, problems may occur if the accounting method does not capture properly the change of the beneficiary of re-hypothecated securities, in particular if securities are credited to two different securities account at the same moment of time ("inflation of securities") leading to a discrepancy between the amount of securities issued by the issuer and the securities in circulation in the market. In such a situation, there is a risk linked to the conflict of rights on the available securities especially in the event of insolvency of one of the intermediaries involved in the securities holding chain, although regulatory mechanisms exist in most jurisdictions that largely mitigate this risk.

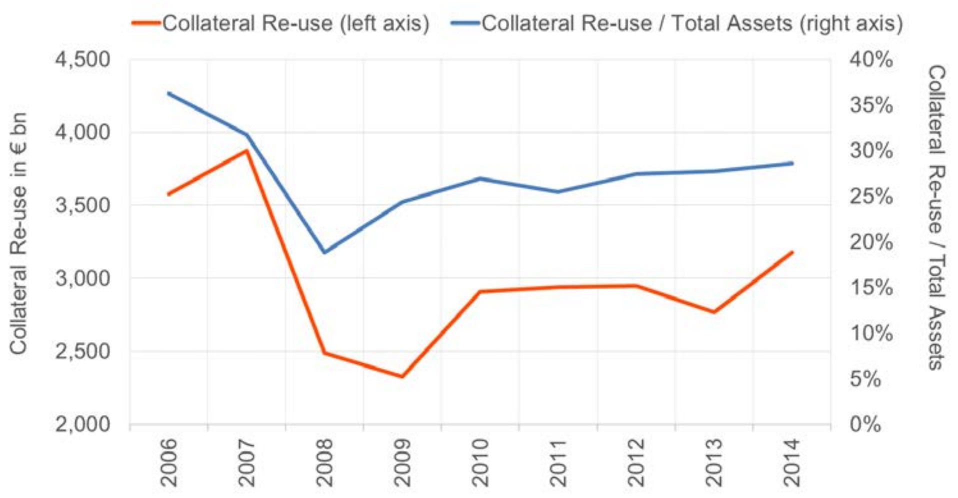
10 Mitchell and Pulvino (2012).

## 3.3. The contribution of re-hypothecation and collateral re-use to the build-up of leverage

By using the collateral provided by their clients in secured funding transactions, financial intermediaries can use re-hypothecation to reduce funding costs to finance clients' activities or, in some jurisdictions, their own activities, with the possible effect of increasing the overall leverage in the financial system. Similarly, the re-use of collateral may enable financial intermediaries to achieve leverage by allowing a given pool of collateral to underlie a larger set of securities financing transactions and to be re-used as margin in derivative transactions. Such leverage through collateral re-use may also have potential systemic implications depending on its size.

The level of collateral re-use[11] amongst the 13 global banks featured in Exhibit 1 amounted to approximately 30% of total assets of these financial institutions before the crisis.[12] The overall and relative level of collateral re-use dropped in the wake of the 2007-09 financial crisis. Although it has risen again in recent years for these banks, it has not returned to pre-crisis levels.

**Exhibit 1: Evolution of collateral re-use and collateral re-use as a fraction of the total assets of 13 major international banks (2006-14)[13]**




## 3.4. Liquidity and funding risk illusion in quiescent times and increased awareness in times of stress, with potential procyclical effects

Clients tend to become more sensitive to credit and legal risks when concerns grow regarding the financial condition of a financial intermediary, or when general market conditions are stressed. Hence, they may suddenly opt out of re-hypothecation programmes (where permitted) or transfer assets in a manner that potentially amplifies funding strains, creates operational risks, and further erodes confidence in affected intermediaries.

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11 Collateral re-use is defined here broadly as the amount of collateral received and client assets that have been sold or used to collateralise other transactions.

12 Brumm et al. (2017).

13 Collateral re-use is scaled by total assets to illustrate the importance of collateral re-use relative to banks' overall activities. Note that some of banks' collateral re-use activity occurs off-balance sheet.

The increased availability of client assets to finance client activities and the use of collateral in excess of client funding needs used for own funding (if permitted) in good times, followed by the sudden withdrawal of client assets or of consent to re-hypothecate the assets in times of stress, may also make intermediaries' business and funding generally more procyclical (i.e. enhanced growth in good times, larger reductions in times of stress).

### 3.5. Enhancing interconnectedness

The August 2013 Report highlights the issue of interconnectedness arising from chains of transactions involving the re-use of collateral. While securities financing transactions usually involve small net exposures due to variation margining and the secured nature of the transactions, this risk of contagion arises if one party fails to deliver re-used collateral, potentially causing additional fails.[14] Should such a substantial shock occur, the amount of collateral posted across the financial system may, due to frictions, fall short of what is actually required to unwind transactions, especially if a specific type of security used as collateral is unavailable to unwind transactions among multiple entities.[15] Thus, collateral re-use can increase the interconnectedness among market participants and potentially contributes to the formation of contagion channels and risks.

For purposes of this document, the collateral circulation length can be used to approximate the contribution of re-use of collateral to interconnectedness.[16] Larger values of this measure reflect longer chains of intermediation, which are created when a specific type of collateral is re-used more frequently. The estimated length of collateral chains (or collateral circulation length) across a sample of 13 large global banks declined after the financial crisis, but has since increased, albeit not to the same level (Exhibit 2).[17]

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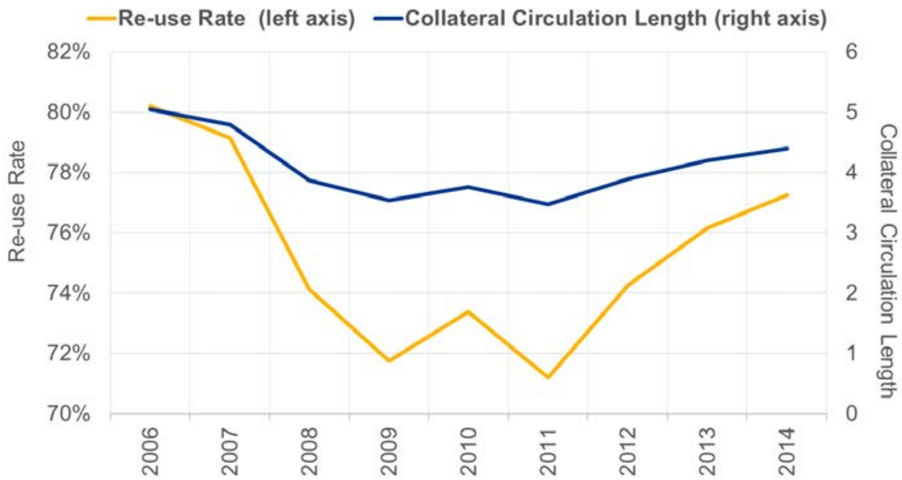
[14] In case of less substantial shock, the additional re-use of collateral may allow the party that did not receive the collateral it was supposed to receive to avoid failing itself to settle his obligations to a third entity. Under such conditions, re-use could avoid triggering a chain of failing settlements, limiting contagion and contributing to financial stability.

[15] It should be noted that for US registered funds, cash collateral reinvestment in the securities lending context typically does not extend beyond the instrument in which such investment is initially made.

[16] The collateral circulation length is calculated as the ratio of 1 divided by 1 minus the re-use rate (i.e. $Collateral\ circulation\ length = 1/(1 - Collateral\ reuse\ rate)$ ), where the re-use rate is defined as re-used collateral divided by collateral received that is eligible for re-use. This is also one of the metrics for the FSB member authorities to monitor collateral re-use as part of its global securities financing data collection initiative (see FSB (2017) for details). At the informal meetings with market participants, some noted that collateral re-use, in the repo context, is fundamentally treating as a sale what is documented as a sale (specifically, that if a client purchases a bond with a subsequent agreement for a counterparty to repurchase that bond, there is nothing different in that transaction that if the client were simply just to buy a bond).

[17] The FSB has published a measure of non-cash collateral re-use, and the related data elements that would be included in the FSB's global securities financing data standards. See FSB (2017).

**Exhibit 2: Evolution of collateral re-use rates by 13 major international banks in 2006-14 and the associated length of collateral chain (collateral circulation length)**[18]




Collateral re-use rates are defined as re-used collateral divided by collateral received that is eligible for re-use.
Source: Banks' consolidated annual reports, own calculations and Brumm et al (2017).

### 3.6. Contribution to pro-cyclicality in the financial sector

The re-use of collateral can contribute to pro-cyclicality in the financial sector. During an economic expansion, secured credit is often easier to obtain. As a result, market participants tend to enter collateralised transactions such as repos more often, which in turn increases market liquidity and lowers volatility. However, in stressed market conditions, market participants may become more sensitive to counterparty risk and therefore less willing to roll-over transactions, intensifying strains already present in markets. As a result, securities financing and collateral re-use rates may drop and the gross stock of re-usable collateral may shrink. This sort of sharp contraction in the level of collateral re-use was observed in 2008 for at least some banks (Exhibit 1). The contraction can be partially explained by a reduction in collateral re-use rates.[19]

### 3.7. Amplification of risks related to sudden price changes of collateral

The re-use of collateral may amplify risks related to sudden decreases in the value of securities that are used and accepted as collateral. A sudden drop in the value of securities widely held as collateral can result in wide-spread and substantial margin calls and higher haircuts, or even the exclusion of these securities from the pool of eligible collateral. This can lead to additional downward pressure on collateral prices. The re-use of collateral therefore increases the risk of contagion through fire sales, as multiple transactions are collateralised by the same type of security, or where intermediaries use highly correlated securities as collateral resulting in common exposures.

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[18] The trend in Exhibit 2 represents the re-use behaviour of 13 major international banks. Other related research exists using different definitions and samples (e.g. Singh (2016)).

[19] The average re-use rate dropped from levels around 80% in 2006 and 2007 to around 72% at the end of 2009.

# 4. Recent experience and evolution in market practices and regulations with respect to re-hypothecation and collateral re-use[20]

## 4.1. Experience during 2007-09 crisis and subsequent periods of market stress

In 2015, the FSB held several informal meetings with market participants[21] to hear their views on the evolution and current industry practices in relation to re-hypothecation, collateral re-use and client asset protection. They also shared their recent experiences with various client asset protection regimes, including following the bankruptcies of various Lehman entities in 2008. They highlighted a change in the behaviour of clients and financial intermediaries following the 2007-09 financial crisis, as well as the dynamics arising from the interaction between the two, although their experiences with re-hypothecation and collateral re-use during the financial crisis varied.

The global financial crisis of 2007-09 was a complex phenomenon with many contributing factors that were interconnected and mutually reinforcing. Central to the financial crisis during the fall of 2008 were funding and liquidity problems. Several issues related to experiences with re-hypothecation and collateral re-use are described below, notably immediately following the collapse of various Lehman Brothers entities in 2008 and the subsequent bankruptcy filings of LBI and Lehman Brothers International (Europe) (LBIE). These issues include, but are not limited to, those discussed at the informal meetings with market participants. It is also worth noting that while the description below is focused on re-hypothecation and collateral re-use, there are other financial stability issues associated with the collapse of various Lehman Brothers entities in 2008 and the subsequent bankruptcy filings of LBI and LBIE.

### *4.1.1 Prime brokerage practices related to re-hypothecation of client assets*

The August 2013 Report highlighted that the re-hypothecation of client assets can create financial stability risks, especially if clients are uncertain about the extent to which their assets have been re-hypothecated or about the treatment in the event of bankruptcy. Market participants confirmed this by highlighting two issues in relation to re-hypothecation: (i) cross-lien[22] provisions in prime brokerage agreements, which contributed to the complexity of cross border insolvencies; and (ii) confusion and uncertainty about the re-hypothecation of client assets and the bankruptcy treatment of such assets in certain Lehman entities.

Market participants stated that the inclusion of cross-lien provisions in prime brokerage agreements was one of the many factors that contributed to the complexities in the insolvencies of LBI and LBIE.[23] These cross-lien provisions generally granted LBI, LBIE, and their affiliates liens on all the assets in a client's prime brokerage account. Market participants

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[20] This Section builds on discussions with market participants at several informal meetings as well as on reports developed by authorities at the national/regional/international level, such as Senior Supervisor Group (2009).

[21] These market participants include banks, prime brokers, agent lenders, and beneficial owners (e.g. hedge funds) that are active in the securities financing markets.

[22] A cross-lien results in a grant of a security interest in customer property to the prime broker as well as the prime broker's related entities.

[23] Other factors contributing to the complexity of the liquidations and bankruptcies of LBIE and LBI noted were the difference of a week between LBIE's administration date and LBI's liquidation date, the unavailability of data, and the fact that LBIE was custodying US securities in an omnibus account at LBI.

acknowledged that hedge fund clients often entered into prime brokerage arrangements without closely reviewing the terms of the prime brokerage agreement and other related documentation, which contained the cross-lien provisions.

Market participants also stated that confusion and uncertainty with respect to re-hypothecation rights and bankruptcy treatment of prime brokerage assets at LBIE presented another complexity during the insolvencies of LBI and LBIE. Specifically, prime brokerage clients contractually agreed through title transfer collateral arrangements to permit UK firms to re-hypothecate their assets. In the UK bankruptcy regime, prime brokerage clients became general creditors with no customer priority status with respect to their assets which had been re-hypothecated.[24] As financial strains on LBIE increased, LBIE prime brokerage clients sought to quickly change their prime brokerage agreements to remove the authorisation to re-hypothecate their assets and move them to a segregated status or attempted to move their accounts to new prime brokers. The volume of these requests, at certain critical times, overwhelmed the operational capacity of LBIE to implement and track such requests, with a result that clients and the firm itself were unsure of whether a change had been completely effected. As a consequence, many LBIE prime brokerage clients claim they were not informed of the use of their assets. When LBIE went into administration on 15 September 2008, all assets of the estate were frozen for the joint administrators to consider, consistent with UK insolvency law. The estate consisted of two separate parts: the general estate, including re-hypothecated assets (i.e. owned by the firm); and separately the client estate, entailing client money and assets not re-hypothecated (e.g. for clients with no re-hypothecation agreement or a portion of the assets of a client who had agreed to a degree of re-hypothecation). During the months prior to LBI's bankruptcy filing date, LBI also experienced a similar trend of clients moving their assets and accounts from LBI.[25] This trend was more pronounced for clients with larger free credit balances.

#### *4.1.2 Heightened awareness of reinvestment risk of cash collateral posted pursuant to securities lending*

During the financial crisis, there was a heightened awareness of reinvestment risks related to the reinvestment of cash received as collateral in securities lending transactions. This cash was typically reinvested in short-term highly-liquid assets. Market participants highlighted that during the financial crisis, however, a number of cash collateral reinvestment vehicles experienced illiquidity and losses. Some cash collateral was invested in debt-instruments, including asset-back commercial paper, Lehman commercial paper, and debt issued by structured investment vehicles.[26] A number of these instruments, which were investment grade and highly liquid at the time of acquisition, became more illiquid and were downgraded. This

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[24] This does not apply to clients who had not agreed to the re-hypothecation of their assets, which remain segregated.

[25] Customer claims (including those of prime brokerage customers) in the US LBI liquidation were paid in full. See LBI Trustee's Preliminary Realization Report (23 February 2015), available at: www.lehmantrustee.com under Public Reports/ Trustee's Investigation Reports.

[26] Those asset classes suffered from uncertainty in liquidity and pricing – both with respect to the structured products themselves and the underlying assets for what were typically securitisation structures.

dynamic is now well-understood to have contributed to the liquidity crisis at American International Group (AIG) in 2008.[27]

#### *4.1.3 Weaknesses in tri-party arrangements*

Until 2013 (and including the period prior to the financial crisis), the US tri-party market practice involved tri-party service providers or agents (typically clearing banks) unwinding all positions, including both maturing and non-maturing trades, each morning. The latter were subsequently re-collateralised in the evening, with positions financed during the trading day through uncommitted intraday credit lines provided by the clearing banks to their clients.[28] In stressed conditions, this unwinding and rewinding, and associated daily decisions by the clearing banks to provide or to refrain from providing intraday credit, heightened the risk that major dealers who rely heavily on repo financing could suddenly lose financing. This left them with no obvious alternatives to defaulting on maturing trades if clearing banks declined to provide intraday credit on the expectation of new counterparties materialising later in the day. At the same time, the intraday uncommitted credit lines, where they in fact were extended, represented material risk exposures for the tri-party service providers, notably if new cash lenders did not materialise over the course of the day. As a consequence, when concerns grew about the condition of some securities firms during the financial crisis in 2008, this settlement mechanism and its heavy reliance on uncommitted intra-day credit posed significant challenges to tri-party service providers, cash lenders, and securities dealers alike, with broader financial stability consequences at several key junctures.

### 4.2. Recent changes to the regulatory environment relevant to re-hypothecation and collateral re-use

Following the 2007-09 financial crisis, changes applicable to re-hypothecation of client assets and collateral re-use have been made to various regulatory regimes, including broader changes to prudential standards applicable to large financial institutions. These regulatory changes have affected market participants, including clients and financial intermediaries. Furthermore, in the informal meetings mentioned above, market participants stated that they have altered their behaviours in response to the events and experiences of the financial crisis. The FSB has sought to understand whether these recent changes have addressed vulnerabilities and risks that were exposed by the crisis and subsequent periods of market stress, as well as the possibility that these changes may have unintended consequences.

#### *4.2.1 Reform of the US tri-party repo market*

In response to the financial crisis, the US undertook significant reform efforts with respect to the tri-party repo market, initially coordinated through a private-sector tri-party repo task force sponsored by the Federal Reserve Bank of New York (hereafter Task Force) to address weaknesses that became visible during the crisis.[29] The ongoing reform efforts, which

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[27] Keane (2013).

[28] In contrast, other tri-party repo markets, such as the Swiss tri-party repo market, have no daily unwinding and intraday credit involved. The experiences in the Swiss tri-party repo market during the financial crisis showed the market to be a reliable way for banks to refinance short term liquidity outflows.

[29] The Task Force was formed to address the following weaknesses in the infrastructure of the tri-party repo market identified over the course of the financial crisis: (i) the market's reliance on large amounts of intraday credit made available to cash

ultimately also involved the supervision of the two tri-party service providers, have made the potential financial stability risks associated with the tri-party repo market (including potential financial stability risks related to re-use of collateral) "less immediate", in line with the goal of the tri-party repo reform efforts to reduce systemic risk. For example, the share of tri-party repo volume that is financed with intraday credit from a clearing bank has dropped markedly in the last several years.[30]

### 4.2.2 *Enhancements to disclosure requirements for funds' securities financing activities in the US*

The Securities and Exchange Commission (SEC) adopted in 2016 rules aimed at modernising and enhancing funds' disclosure requirements to improve the access and quality of information available to the Commission and investors about fund investments. These include the disclosure of position-level information on securities on loan, cash collateral reinvestment, and repurchase agreements, as well as the income received from, and fees paid related to securities lending activities.[31] In adopting these rules, the SEC noted that "[t]his will improve the ability of Commission staff, as well as investors, brokers, dealers, and other market participants to assess collateral reinvestment risks and associated potential liquidity risk and risk of loss, as well as better understand any potential leverage creation through the reinvestment of collateral".

### 4.2.3 *Enhancements to EU customer protection*

Following the financial crisis, various sectoral directives were adopted in order to require financial intermediaries to disclose to their professional and retail clients their intent to re-hypothecate client's assets and obtain their consent before doing so.[32] The Market in Financial Instruments Directive II (MiFID II), for example, requires an investment firm, when holding financial instruments belonging to its clients, to make "adequate arrangements so as to safeguard the ownership rights of clients, especially in the event of the investment firm's insolvency, and to prevent the use of a client's financial instruments on own account except with the client's express consent".[33] Moreover, under MiFID II an investment firm will not be allowed to conclude title transfer financial collateral arrangements with retail clients. Certain safeguards are also included in MiFID II with regard to professional clients in the implementing measures as well as enhanced disclosure requirements.[34] The MiFID II regime will fully enter into force in 2018.

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borrowers by tri-party service providers that provide the operational infrastructure for these transactions; (ii) the risk management practices of cash lenders and tri-party service providers were, with the benefit of hindsight, inadequate and prone to pro-cyclical pressures; and (iii) a lack of effective plans by market participants for managing the tri-party collateral of a large securities dealer in default without creating potentially destabilizing effects on the rest of the financial system. For details, see Federal Reserve Bank of New York (2010), Payment Risk Committee (2010) and (2012).

[30] From 100% as recently as 2012, to a level averaging between 3% and 5% (as compared with the Task Force's original target of no more than 10%). For details, see https://www.newyorkfed.org/newsevents/statements/2015/0624_2015.html.

[31] See https://www.sec.gov/rules/final/2016/33-10231.pdf.

[32] Such sectoral directives other than MiFID II explained in the text include: Financial Collateral Directive (FCD); Alternative Investment Fund Managers Directive (AIFMD); Regulation on transparency of securities financing transactions and of reuse (SFTR); and Undertakings for Collective Investment in Transferable Securities Directive V (UCITS V).

[33] Article 16 paragraph 8 of the Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

[34] Commission Delegated Directive (EU) .../… of 7.4.2016 (in a corrigendum process, to be published in early 2017) supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to safeguarding of

Similarly, in the UK, there have been enhancements to client asset protection regimes before the entry into application of MiFID II, such as the revisions to the UK client asset rules.[35] These enhanced client asset protection rules include enhanced risk disclosure statements to prime brokerage clients and the daily reporting of re-hypothecated assets. In addition, as of June 2015, UK broker-dealers must enter into a specific agreement with prime brokerage clients who agree to re-hypothecate their assets, to provide for a process to switch from segregation to non-segregation. In the UK, clients must also contractually agree to a maximum re-hypothecation limit. Market participants in the informal meetings indicated that these changes have worked well to increase transparency to clients and enhance their understanding of the re-hypothecation of their assets.

### *4.2.4 Prudential regulatory reforms for banks*

Following the financial crisis, prudential reforms (including the Basel III framework) were undertaken to strengthen prudential regulation and supervision of banks. For example, the Basel III risk-based capital framework now incorporates updated risk weightings, an increased focus on common equity as the most loss-absorbing form of capital, higher regulatory capital ratios, and a capital conservation buffer in addition to the minimum capital requirements. The international regulatory community has also agreed to risk-based capital surcharges for global systemically important banks. Additionally, the leverage ratio is a non-risk-based capital requirement that includes off-balance sheet exposures and is intended to serve as a backstop to a bank's risk-based capital requirement. The liquidity coverage ratio (LCR) meanwhile requires banks to have sufficient high-quality liquid assets to withstand a 30-day liquidity stress. The net stable funding ratio (NSFR) is a longer term structural ratio designed to ensure that banks have liabilities that are sufficiently stable given the liquidity characteristics of their assets.

At the informal meetings, market participants were generally supportive of the ongoing prudential regulatory reforms. More specifically, market participants believe that once the LCR and the NSFR are in place, banks will have a more stable liquidity profile. They generally believe any issues with overreliance on unstable funding sources, including those tied to collateral re-use or re-hypothecation, are already addressed by these prudential requirements.

Market participants also pointed out that in the US, securities lending is predominately a cash collateral market. In contrast, the lending of securities in Europe is more frequently collateralised through the posting of other securities. Because of new regulations (e.g. LCR), there has reportedly been a general trend toward a greater use of securities collateral for securities lending transactions.[36]

Market participants also believe that new prudential requirements may be incentivising other non-bank market participants to engage in some forms of credit intermediation, which results

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financial instruments and funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees, commissions or any monetary or non-monetary benefits. In particular, see Article 5: Use of client financial instruments. Other aspects relate to securities financing transactions and collateralisation, inappropriate security interests, liens or rights of set-of over client financial instruments or unauthorised use of client financial instruments. Available at http://ec.europa.eu/finance/securities/isd/mifid2/index_en.htm.

[35] In the UK, only professional clients are permitted to enter into re-hypothecation arrangements. Re-hypothecation is deemed to be a commercial arrangement and is part of the contractual arrangements. The UK Client Asset Rules have been amended to include a full disclosure annex which is provided by the prime broker, to their clients, and reporting each business day indicating whether assets have been re-hypothecated.

[36] International Securities Lending Association (2016).

in moving some of these transactions to entities that are not prudentially regulated or are less stringently regulated. Market participants also noted that prime brokerage services, securities lending and other businesses (which are typically conducted by large financial institutions) are now more frequently being conducted by some small financial institutions that, because of their overall size or because they are not affiliated with a bank, are not subject to some of the new prudential requirements. Finally, market participants emphasised the continued importance of the market liquidity of collateral. Some of these prudential reforms and other regulatory requirements have yet to take effect.

#### *4.2.5 Other international regulatory reforms*

In addition to prudential reforms and recent enhancements to client asset protection regimes in specific national regulations, international initiatives have been undertaken following the financial crisis. These initiatives address some of the potential financial stability risks associated with re-hypothecation and collateral re-use, and include haircut standards for non-centrally cleared securities financing transactions and the FSB's standards and processes for global securities financing data collection and aggregation. These FSB initiatives are part of the FSB's policy recommendations in relation to securities lending and repos that are set out in the August 2013 Report. The EU adopted in 2015 a regulatory framework[37] for securities financing transactions to be in line with some of these FSB policy recommendations. The framework, which aims to address lack of transparency in securities financing markets, contains three sets of measures: (i) reporting of securities financing transactions to trade repositories applicable to all banks and non-banks; (ii) transparency requirements on securities financing transactions and collateral re-use practices applicable to investment funds; and (iii) requirements on collateral re-use such as prior consent to be given by the collateral provider, disclosure of risks if collateral is eligible for re-use, mandatory transfer of the collateral to be re-used from the account of the collateral provider.

In addition, the report by the Basel Committee on Banking Supervision (BCBS) and International Organization of Securities Commission (IOSCO) on margin requirements (hereafter BCBS-IOSCO requirements) published in 2013 (with an update in 2015)[38] sets out detailed requirements on the re-hypothecation of margin exchanged for non-centrally cleared derivatives. The BCBS-IOSCO requirements allow the re-hypothecation, re-pledge or re-use of cash and non-cash collateral collected as variation margin (VM), while setting conditions under which firms are allowed to re-hypothecate collateral provided as initial margin (IM).[39]

IOSCO meanwhile issued *Recommendations Regarding the Protection of Client Assets* in January 2014, which set out eight principles that financial intermediaries should follow in their treatment of client assets, including when they re-hypothecate client assets.[40] These principles include maintenance of accurate and up-to-date records and accounts of client assets, as well as arrangements to safeguard the clients' rights in their assets and minimise the risk of loss or

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[37] Regulation (EU) 2015/2365 on transparency of securities financing transactions and of reuse entered into force in December 2015. Article 15 of that regulation, which is the provision relevant to re-hypothecation and collateral re-use apply as of 13 July 2016. For details, see http://eur-lex.europa.eu/eli/reg/2015/2365/oj.

[38] See BCBS and IOSCO (2015).

[39] See "Element 5: Treatment of provided initial margin" of BCBS and IOSCO (2015).

[40] IOSCO (2014).

misuse. The principles address the risks to client assets and how to transfer or return client assets in case of the financial intermediary's default, resolution, or insolvency.

In relation to client assets protection, the FSB also issued guidance on the implementation of its *Key Attributes of Effective Resolution Regimes for Financial Institutions* (hereafter *Key Attributes*) for any financial firm that directly or indirectly holds client assets and that could be systemically critical or important in the event of failure.[41] This guidance supplements the *Key Attributes* and should assist jurisdictions in implementing them by clarifying how to design arrangements that promote prompt access to or transfer of client assets of a firm in resolution. For example, if a firm re-hypothecates or otherwise uses client assets as principal, it should keep clear records of which client assets have been re-hypothecated or used. Where the legal framework permits securities lending, rights of use, re-hypothecation or similar arrangements in respect of client assets, it should require adequate disclosure to clients of the effects of such transactions on the protection of their assets and the nature of their legal claims in resolution.

Finally, the Committee on Payments and Market Infrastructures (CPMI) and IOSCO Principles for Financial Market Infrastructures (PFMIs) set out the conditions under which a financial market infrastructure (FMI) – including central counterparties (CCPs) and securities settlement systems (SSSs) – could re-use the collateral that it collects from its participants in the normal course of business.[42] In particular, the PFMIs recommend that an FMI should: (i) use a well-designed and operationally flexible collateral management system that tracks the extent of collateral re-use (both cash and non-cash) and the rights of the FMI to the collateral provided to it by its participants (Principle 5); (ii) have clear and transparent rules on when it may re-use participants' collateral and the process for returning that collateral (Principles 5 and 23); and (iii) not rely on re-use of collateral as an instrument for increasing or maintaining its profitability, however may invest any cash collateral received from participants on their behalf (Principle 16). The CPMI and IOSCO *Public quantitative disclosure standards for central counterparties* also recommend that CCPs publish on a quarterly basis the total value of participants' non-cash assets that has been re-hypothecated.[43]

### 4.3. Recent market and behavioural changes relevant to re-hypothecation and collateral re-use

Some of the recent changes to market practices or behaviours in response to the events and experiences of the financial crisis were highlighted at the informal meetings with market participants. These changes are described below.

#### *4.3.1 Changes to documentation, record-keeping and other market practices*

Following the financial crisis, hedge fund clients have increased scrutiny and legal review of contractual terms in the negotiation of prime brokerage agreements. This is a departure from pre-crisis practices, in which market participants noted that such reviews were generally cursory. More specifically, there has been increased awareness, or heightened scrutiny, of the cross-lien provisions in prime brokerage agreements. The enhanced legal review and documentation seem to be generally true for all transactions (e.g. securities lending and repo)

41 See Section II- Annex 3 of FSB (2014).

42 CPMI and IOSCO (2015).

43 CPMI (2015).

following the financial crisis. A thorough review of documents is especially important with regard to complex cross-border transactions involving larger financial institutions with international affiliates. Most market participants also stressed the importance of proper documentation, recordkeeping and storage of agreements to avoid issues involving the reconciliation of securities. Clients generally increased awareness of where their assets are being held and their rights regarding those assets.

Market participants also noted that, following the financial crisis, some hedge fund clients have elected to hold their fully paid for securities with a third party custodian. There are prime brokers in certain jurisdictions that offer bankruptcy remote vehicles for clients to hold fully paid for securities.[44] In the securities lending market, while there were few claims for indemnification during the financial crisis, market participants stated that agent lender banks are looking more closely at indemnification clauses[45] in the negotiation process and asking more questions with respect to client selection in order to limit their exposure and reduce costs.

Prime brokers indicated that client assets are generally only re-hypothecated as needed to fund client activity, mainly in response to customer protection rules and new prudential regulatory requirements which have effects on balance sheet activity. The strengthened prudential standards reportedly function globally as a powerful disincentive to using client assets as a source of funding for bank and dealer activities not related to the extension of credit to clients (where permitted).

#### *4.3.2 Heightened due diligence and operational changes*

In the informal discussions, market participants also suggested that behaviours seem to have changed following the financial crisis with respect to due diligence, in particular, for those involving counterparty credit risk. Market participants noted that counterparties also take more time to understand the specific legal entities they are facing in each transaction. In addition, they stated that some hedge funds that only used one or two prime brokers prior to the financial crisis may now use multiple prime brokers to spread risk. On the contrary, other hedge funds may use fewer prime brokers to more closely monitor counterparty credit risk.

Based on discussions with the market participants, it appears that limits on re-hypothecation were not a significant factor in a client's decision on where to open a prime brokerage account. Rather, this decision is influenced by multiple considerations, such as location of assets, client asset and bankruptcy protection, and available margin rates. Some US broker-dealers noted that their prime brokerage clients now primarily hold their assets in the US. Prior to the financial crisis, this was the other way around. The drivers behind this significant shift include, in part, the approval of securities portfolio margin rules in the US (effective in 2007), which reduced the initial margin requirement for equity securities from 50% to 15%.[46] However, some market

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[44] In this case, a prime broker establishes a new affiliate to act as custodian for its prime broker clients, the sole purpose of which is to hold client assets. These new entities have been designed to be "bankruptcy remote," so that if the prime broker becomes insolvent, the custodian should remain unaffected.

[45] Indemnification is promises by agent lenders to reimburse the client for the losses or damages the client would otherwise incur if a counterparty defaults or does not return borrowed securities and the pledged collateral is not sufficient to cover the replacement cost of the loaned securities.

[46] The 50% initial margin requirement for equity securities under the US Federal Reserve Board's Regulation T is still in effect for US securities margin accounts that have not been approved for portfolio margining. See 12 CFR 220.1 et seq.

participants noted that client assets are maintained in the UK for various reasons, including familiarity with the UK financial system or actual location of funds.

Some market participants noted that cash providers have become more risk averse in the securities lending market, as significant losses were recorded in September 2008 that were related to reinvestment of cash collateral. Agent lenders seem to have also begun to look more closely at the counterparties they are lending securities to, what type of collateral beneficial owners are taking, and what type of investments are being made with the cash collateral.

In general, market participants seem to believe there has been a fundamental change in behaviour and risk awareness, which goes beyond the specific effects of new and enhanced regulation. Furthermore, due to the new prudential regulatory requirements, it would be difficult for such behaviour and risk awareness to return to pre-crisis levels.

#### *4.3.3 Enhanced risk and collateral management*

In the informal meetings, market participants reported that since the financial crisis they have implemented enhanced risk management procedures, including improved liquidity risk management. Repo market participants generally believe that the financial stability risk stems from the lack of liquidity management, not the re-use of collateral. For example, following the financial crisis, some market participants centralised their funding operations or reduced certain lines of business. Market participants also have enhanced their risk management procedures, paying closer attention to the types and quality of collateral accepted, reviewing counterparty credit risk and ensuring that the haircuts are appropriate. Following the financial crisis, market participants noted that counterparties are in general only willing to accept collateral types that they have the capacity and sophistication to manage and that can be liquidated in times of stress. Counterparties in repo transactions will only accept collateral they can re-use, since the underlying purpose of these transactions is more frequently for the counterparty to obtain collateral that can be re-used in another transaction. Post-crisis, they believe there has been a flight to high-quality, more liquid collateral (e.g. “high-quality liquid assets” such as government bonds, covered bonds, supra-national bonds).

Greater risk awareness has also manifested itself in consideration of liquidation possibilities under a default scenario, through: sufficient haircuts to address collateral liquidation risk; enhanced attention to intra-firm transactions; and related collateral demands. Market participants noted that one of the biggest changes in behaviour following the financial crisis is that they do not extend credit or enter into secured transactions without negotiating appropriate pricing and haircuts, as well as understanding the collateral involved.

Market participants described an increased sensitivity about the quality and liquidity of collateral, in both the securities lending and repo markets. For example, in the securities lending markets, there has been reduced use of corporate bonds and asset backed securities as collateral against other securities.[47] They also noted that some lenders did not understand the potential risks associated with cash collateral reinvestment during the financial crisis because they underestimated the extent to which the instruments into which cash was reinvested could subsequently become illiquid, leading to losses.

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[47] US registered funds are limited to accepting as collateral, cash, US government securities and letters of credit.

#### *4.3.4 Other broader changes in market practices and observations*

Market participants pointed out that the ability to re-use collateral is essential to the cash markets and collateral fluidity. They noted that collateral re-use, in the repo context, is fundamentally treating as a sale what is documented as a sale (specifically, that if a client purchases a bond with a subsequent agreement for a counterparty to repurchase that bond, there is nothing different in that transaction than if the client were simply just buying a bond). They also noted that collateral received in a repo transaction may be commingled with a firm's proprietary assets (for example, due to the title transfer mechanism in Europe), so if collateral is subsequently re-used it often comes from this commingled pool of assets, it can make it difficult to track specific collateral.

## 5. Possible harmonisation of regulatory approaches related to re-hypothecation of client assets

### 5.1. Potential elements of regulations on the re-hypothecation of client assets

Historically, the main goal of the regulation of re-hypothecation has been to protect securities investors from private harm that can occur when a financial intermediary that has re-hypothecated client securities experiences financial distress. The mitigation of financial stability risks (or systemic harms) does not appear to have been a direct motivation for the restrictions on re-hypothecation that currently exist in many jurisdictions. In the wake of the financial crisis, however, concerns about financial stability risks have increased, and the FSB has focused on improving the safeguards in place regarding the re-hypothecation of client assets as well as examining the potential harmonisation of client asset rules with respect to re-hypothecation. A discussion of the potential regulatory approaches that are in use, or that are planned to be used, to regulate the re-hypothecation of client assets are set out below. A summary of regulatory approaches towards the re-hypothecation of client assets by broker-dealers across a wider set of jurisdictions can be found in Annex 1.

#### *5.1.1 Disclosure to and consent from clients*

A basic regulatory approach to re-hypothecation mandates that financial intermediaries disclose to the client their intent to re-hypothecate the client's assets and obtain the client's consent before doing so. This approach permits the client to decide whether the better terms that the financial intermediary may offer in exchange of the consent (e.g. lower financing costs) or the ability to obtain margin financing represent adequate compensation for the associated risks if re-hypothecation is permitted. Most FSB member jurisdictions seem to require a client to consent before its assets can be re-hypothecated.

The prevention of private harms is the primary rationale for these regulatory requirements. For example, one method that a regulator may use to protect investors is to ensure that they have enough information to make an informed decision or by making the risk-averse decision on behalf of less sophisticated investors. Absent such regulatory intervention, the degree to which re-hypothecation occurs and the manner in which this is reflected in the price of financing would be negotiated bilaterally between clients and financial intermediaries. In a scenario, the relative size and importance of both parties involved, including the degree to which the client's activities in the aggregate are likely to be lucrative for the financial intermediary and the degree to which a financial intermediary exercises market power, may play a role in the outcome of the negotiation.

### *5.1.2 Reporting requirements*

A regulator may require that financial intermediaries provide clients and/or regulators with daily reports of the locations of client assets. In some jurisdictions, such reporting allows clients to track their exposures and more precisely evaluate the risks posed by re-hypothecation of their assets, for example, if re-hypothecation of assets would change the status of the client's claim to the asset in bankruptcy. Reporting requirements might also enable regulators to monitor the quantity of re-hypothecation in the financial system. Reporting may facilitate the rapid return or transfer of client assets to a solvent firm during the dealer's resolution or liquidation, thereby protecting clients from private risk and perhaps mitigating financial stability risks or systemic harms that could be caused by the propagation of stress from a failing financial intermediary to its clients and beyond. Also, to the extent that potential runs are the result of actors with incomplete information suddenly assuming the worst regarding a financial intermediary's financial viability, frequent disclosure could reduce the likelihood that clients pay no attention to potential risks during normal times and then rapidly opt out of re-hypothecation, where permitted, when the financial intermediary comes under stress (which could add to the stress by restricting the financial intermediary's access to liquidity or prompting other market participants to reduce their exposure to it). On the other hand, it could be argued that a client's knowledge that his assets have been re-hypothecated may increase his incentive to run if the financial intermediary is perceived to be under stress.

All FSB member jurisdictions seem to have reporting mechanisms in place to track the status of re-hypothecation of client assets, but the means, scope and frequency of such reporting seem to vary across jurisdictions. Some require financial intermediaries to provide clients with the relevant information on re-hypothecation of their assets (with the regulator obtaining the same information) but others may require direct regulatory reporting or filing (some of which can be publicly disclosed).

### *5.1.3 Prohibition or limitation on re-hypothecation of client assets to fund own-account activities*

A regulator may prohibit or restrict the use of client assets by the financial intermediary holding such assets in custody. Such limitations may apply to the assets of all clients, or of a subset of clients judged to be less able to assess the relevant benefits and risks. Furthermore, a regulator may choose to permit re-hypothecation only where the client assets are effectively funding other client activity. In such cases, the regulator may prohibit the financial intermediary from using client assets for purposes other than providing financing to clients or some subset of clients, where such other purposes may include providing working capital to the firm or funding its proprietary trading activities. Certain regulators may also impose quantitative limits on a financial intermediary's ability to re-hypothecate client assets which, in turn, helps to reduce leverage.

This approach was reflected in the FSB policy recommendation, which is intended to prohibit financial intermediaries (e.g. broker-dealers) from re-hypothecating client assets for the purpose of financing their own-account activities in those circumstances where client assets may be re-hypothecated for the purpose of financing client long positions and covering short positions (Principle 2 of Recommendation 7 of the August 2013 Report). In the US, for example, this approach is operationalised by requiring broker-dealers to maintain physical possession or control of all fully paid and excess margin securities, and by requiring broker-dealers to maintain a reserve of cash or qualified securities in an account at a bank that is at least equal in value to the net cash owed to customers, including cash obtained from the use of customer securities.[48]

It is important to note, however, that the prohibitions and restrictions on re-hypothecation of client assets may have some limitations. For example, in many FSB member jurisdictions, repo counterparties are not deemed "clients", so that dealers may re-use collateral that they receive as a result of reverse repurchase transactions without restriction. Repo counterparties would be protected in these transactions, however, because they receive securities as collateral for their loan. Finally, in some jurisdictions, where permitted, clients may be able to effectively opt out of the local regime by conducting transactions through foreign affiliates.

#### *5.1.4 Alternatives to traditional creditor treatment in bankruptcy*

Client asset protection regimes may seek to shield investors from the costs and inconvenience of traditional creditor treatment in bankruptcy. This can be accomplished by providing relief from the traditional stays associated with insolvency regimes so that assets can be returned expeditiously by a trustee or administrator. In the US, for example, broker-dealers are not usually placed in- traditional bankruptcy. Instead, such entities are subject to a special liquidation regime that gives preference to customers vis-à-vis other creditors. For these purposes, under the Securities Investor Protection Act of 1970 (SIPA), the Securities Investor Protection Corporation (SIPC) protects the custody function of a broker-dealer, which means that SIPC works to restore to customers their securities and cash that are in their accounts when a broker-dealer liquidation begins. A customer's cash and securities (including re-hypothecated securities) would be protected up to the amount of the customer's "net equity" (defined as the cash and securities held by a broker-dealer for a customer, minus any amount owed by the customer to the broker-dealer), and within certain protection limits.

#### *5.1.5 Capital and liquidity regulation for financial intermediaries permitted to re-hypothecate client assets*

Another approach to reducing the risk that a financial intermediary is unable to meet its obligations, including with respect to the return of client assets (which may have been re-hypothecated), involves the imposition of capital standards. Capital requirements help to ensure that a financial intermediary will be able to meet its obligations to clients, as well as to other creditors and counterparties, without according any special preference to those whose assets may have been re-hypothecated. Liquidity standards may function as a complement to capital standards, to help ensure the financial intermediary's ability to meet obligations as they come due.

[48] "Excess margin securities" are defined as securities with a market value in excess of 140 percent of the aggregate debit balance (amount that the customer owes the broker-dealer in the customer's margin account). See 17 CFR 240.15c3-3(a)(5). Hence, if a client has purchased $100 of securities using $60 of his own cash and a $40 margin loan, the broker-dealer can only re-hypothecate $56 (140% of the $40 margin loan) of the securities to finance other customer transactions and must designate the specific securities that are available for re-hypothecation on a client-by-client basis. The broker-dealer is required to maintain possession or control of the remaining $44 of securities. If the broker-dealer receives more than $40 in proceeds through the re-hypothecation, the excess amount would be deposited into the customer reserve bank account.

The FSB has endorsed this approach, with Principle 3 of Recommendation 7 of the August 2013 Report stating that "only entities subject to adequate regulation of liquidity risk should be allowed to engage in re-hypothecation of client assets". In the US, for example, the net capital requirement imposed by SEC Exchange Act Rule 15c3-1 requires broker-dealers to maintain a minimum level of liquid assets to enable those firms that fall below the minimum net capital requirements to liquidate in an orderly fashion without the need for a formal proceeding or financial assistance from SIPC. In other jurisdictions, financial intermediaries are often subject to the Basel capital and liquidity framework.

## 5.2. Existing approaches to regulation of re-hypothecation

The re-hypothecation of client assets predominantly takes place through prime brokerage activities in the US and EU,[49] which follow different approaches to regulating what client assets can be re-hypothecated and for what purpose(s).[50] While no jurisdictions have identical regulatory approaches, the regulatory approaches of other FSB member jurisdictions often seem to be comparable to either the US or EU approaches.[51] These two approaches are therefore described below as a proxy for broader trends in the regulation of re-hypothecation.

### *5.2.1 The "US Approach"*

Broker-dealers registered with the US SEC are permitted to re-hypothecate client (or customer)[52] assets with client consent, which is generally obtained when a client executes a margin agreement. Rationales for this approach include that the re-hypothecation of a client's securities has no effect on the client's right to the return of those securities, the priority status of client claims in a broker-dealer liquidation under SIPA, and the SEC's existing broker-dealer financial responsibility rules.[53]

By placing an emphasis on maintaining liquid assets and requiring the segregation of client funds, the SEC broker-dealer financial responsibility requirements have so far generally been successful in limiting losses to customers due to broker-dealer defaults.[54] These rules include, for example, the customer protection rule (SEC Exchange Act Rule 15c3-3), which protects client securities and cash held at broker-dealers. The rule requires that broker-dealers take two primary steps to safeguard customer cash and securities. These steps, described below, are designed to protect customers by segregating their securities and cash from the broker-dealer's

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49 The majority of other EU jurisdictions do not have large quantities of client money held by brokers. Instead, the relevant financial intermediaries are credit institutions (i.e. banks) and thus receive such money as deposits. This means the UK regime is the most notable of the EU in terms of quantum of business.

50 While the members' jurisdictions' re-hypothecation regimes are often roughly in line with one of these two approaches, no two jurisdiction's regimes are identical.

51 For example, Canada's regulatory approach is similar to that of the US.

52 The SEC's broker-dealer financial responsibility rules generally use the term "customer" throughout such rules for "clients" in this document. See Exchange Act Rule 15c3-3(a)(1).

53 See Exchange Act Rule 15c3-3(l), which provides that broker-dealer clients have the absolute right to receive in the course of normal business operations following demand made on the broker-dealer, the physical delivery of certificates for fully-paid securities to which he is entitled, and margin securities upon full payment of the client's indebtedness; and, subject to the right of the broker-dealer under Regulation T to retain collateral for its own protection beyond the requirements of Regulation T.

54 For example, in the SIPA liquidation of Lehman's US broker-dealer subsidiary, LBI, customers received 100% of their assets through the fund of customer assets held by LBI despite the re-hypothecation of certain customer assets.

proprietary business activities, so that if a broker-dealer fails financially, the securities and cash will be available to be returned to customers. In addition, if the failed broker-dealer is liquidated in a formal proceeding under SIPA, the securities and cash would be isolated and readily identifiable as "customer property" and, consequently, available to be distributed to customers ahead of other creditors.[55]

Step 1) Broker-dealers must maintain physical possession or control over customers' fully paid and excess margin securities. Fully paid and excess margin securities may not be used by the broker-dealer and must be segregated in a lien-free environment and held in one of several control locations, such as a bank or a clearing agency. Margin securities (generally securities with a market value equal to or less than 140% of a single customer's debit balance (i.e. client indebtedness to the broker-dealer)) are left available to the broker-dealer for purposes of financing the debit balance and may be used as collateral for bank loans, stock loans or repurchase agreements (i.e. may be re-hypothecated).

Step 2) Broker-dealers must maintain a reserve of cash or qualified securities (e.g. US treasury securities) in a bank that is at least equal to the net cash owed to customers, including cash obtained from the use of customer securities. The amount of net cash owed to customers is computed under a formula set forth in the rule. The customer reserve formula permits a broker-dealer to offset customer credit items only with customer debit items. This means the broker-dealer can use customer cash to facilitate customer transactions such as financing client margin loans and borrowing securities to make deliveries of securities that customers have sold short.[56]

The SEC's Exchange Act Rules 8c-1 and 15c2-1, commonly called the "hypothecation rules," prohibit a broker-dealer from commingling client securities with its own proprietary securities. Under Rules 8c-1 and 15c2-1, broker-dealers are required to obtain a client's written consent in order to hypothecate securities under circumstances that would permit the commingling of customers' securities and to give written notice to a pledgee that, among other things, a security pledged is carried for the account of a customer.

### *5.2.2 The "EU Approach"*

#### *5.2.2.1 EU legislative framework*

EU legislation establishes a common framework of Union-wide requirements with regard to re-hypothecation.

Under MiFID II, financial intermediaries such as investment firms are permitted to use client's financial instruments (e.g. bonds, equity derivatives) with client consent. However, they are prohibited from concluding title transfer financial collateral arrangements (TTCA) with retail

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[55] Customers under SIPA ("SIPA customers") generally are entitled to a number of protections, including the right to share pro rata with other SIPA customers in the customer property held by the broker-dealer and, if the customer property is insufficient to make each SIPA customer whole, the entitlement to receive an advance from SIPC of up to $500,000 (of which $250,000 currently can be used to cover cash claims).

[56] For example, if a broker-dealer holds $100 for customer A, the broker-dealer can use that $100 to finance a security purchase of customer B. The $100 the broker-dealer owes customer B is a credit in the formula and the $100 customer B owes the broker-dealer is a debit in the formula, so there would be no requirement to deposit cash and/or US government securities in the customer reserve account. However, if the broker-dealer does not use customer A's $100, there would be no offsetting debit and, consequently, the broker-dealer would need to deposit $100 in its customer reserve account.

clients. This restriction does not apply in relation to professional clients and eligible counterparties. In order to ensure that safeguarding and segregation rules are not undermined, investment firms must demonstrate that the use of TTCA with those clients is appropriate in the context of the relationship between the client's obligation to the firm and the client assets subject to TTCA. For instance, concluding TTCA with wholesale clients would be inappropriate, where there is only a very weak connection between the client's liability and the use of client instrument by means of TTCA. Investment firms are obliged to disclose to clients the risks involved and effect of TTCA on the client's assets.

In addition, investment firms must take appropriate measures to prevent the unauthorised use of client financial instruments, such as: relevant arrangements in case the client does not have enough provision on the account on the settlement date; the close monitoring of the firm's ability to deliver instruments on the settlement date; and the prompt requesting of delivered securities outstanding on the settlement date. When using client's financial instruments, investment firms must ensure that the borrower of those instruments provides the appropriate collateral. This collateral must be monitored by the firm so that the balance with the value of the client instrument is maintained.

The laws of insolvency and of property are not subject to a similar degree of harmonisation, and these can impact the rationale for regulatory approaches. This may be one factor behind any differences between the approaches of EU Member States.

The Securities Financing Transaction Regulation (SFTR)[57] imposes minimum market-wide conditions to be met on re-hypothecation of client assets such as: prior consent; disclosure of the risks and consequences of re-hypothecation; and transfer of the financial instruments from the account of the client. In addition, MiFID II, requires that investment firms provide information in a comprehensible form allowing clients to understand the nature and risks of the investment service that is being offered and, consequently, to take investment decisions on an informed basis. Other financial entities such as funds, CCPs, central securities depositories, are also subject to additional disclosure requirements regarding the re-hypothecation of client's assets.[58]

Regarding investment funds, the depository, custodian or sub-custodian to whom the custody function has been delegated by the fund are prohibited from re-hypothecating (including, but not limited to, transferring, pledging, selling and lending) fund's assets for their own account according to the Undertakings for Collective Investment in Transferable Securities Directive (UCITS).[59] Finally, the Capital Requirements Regulation[60] applies global standards on bank capital (the Basel III agreement) to credit institutions and investment firms.

Regarding collateralisation of financial instruments, the Financial Collateral Directive[61] provides that a counterparty can transfer securities to the collateral taker either by concluding a security financial collateral arrangement (i.e. pledge), or by transferring the securities' title of

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[57] Regulation (EU) 2015/2365.

[58] Regulation (EU) 2015/2365, Directive 2014/91/EU, Regulation (EU) No 648/2012, Regulation (EU) No 909/2014, and Directive 2002/47/EC.

[59] Article 22, paragraph 7 of Directive 2014/91/EU.

[60] Regulation (EU) No 575/2013.

[61] Directive 2002/47/EC.

ownership. In both cases, when the collateral giver has met its financial obligation, the collateral taker has to return the collateral. If it has re-hypothecated the security, the collateral taker has to return the said security or any equivalent security by purchasing it on the appropriate market.

#### *5.2.2.2 Specificities in the UK*

The legal regime in the UK (where most re-hypothecation and collateral re-use in the EU takes place) includes both EU legislation and aspects of the UK's national regulatory and legal framework. This framework applies to UK-incorporated firms conducting investment business, including where services are "passported" to another EU Member State. As required under MiFID II, in the UK, financial intermediaries may only conclude re-hypothecation agreements with their professional clients upon receipt of clear written consent. Such agreements cannot be made with retail clients, who are not equipped to assess the risks.

Re-hypothecation is prevalent in prime brokerage activity where the prime broker holds a client's assets in custody. Prime brokerage agreements often state that an intermediary may re-hypothecate a proportion of a client's assets, under certain circumstances, transferring full title and ownership from client to intermediary. Limits on the extent to which an intermediary can do this are usually linked to a client's indebtedness to the intermediary.

Such terms are a key part of commercial arrangements as the professional clients of prime brokerage services (e.g. hedge funds) balance the complex risks of re-hypothecation against financial benefits such as reduced funding costs and fees. Terms such as client indebtedness are not standardised and are subject to negotiation between client and intermediary. As a result, the regime in the UK does not include regulatory restrictions on the extent of re-hypothecation.

Since re-hypothecated assets no longer belong to the client, the client does not have a client assets claim for any re-hypothecated assets in the event of an intermediary's insolvency, but has a contractual claim against the failed firm's insolvent estate. Compensation regimes are unlikely to apply to professional clients. Transparency is correspondingly crucial, so the intermediary may be subject to stringent disclosure requirements including:

- Daily reports to clients showing use of client assets; and
- A clear summary of contracts including any re-hypothecation limit and key risks.[62]

A client can revoke its consent to re-hypothecation or renegotiate its contract at any time, for any reason, although minimum waiting periods and documentation requirements may prevent this being effective immediately but ensure contractual certainty on insolvency.

Capital and liquidity requirements help to reduce leverage and impose a practical cap on the value of the client assets that can be re-hypothecated.

The purpose for which financial intermediaries can re-hypothecate client assets is not restricted.

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[62] These requirements reinforce requirements under MiFID I that will remain in place under MiFID II. Under the currently applicable MiFID I, investment firms are required to provide clients with terms of the agreement. Under MiFID II, which will enter into force in 2018, firms must inform wholesale clients about the risks of title transfer financial collateral arrangements (TTCA). Such disclosure is not relevant in relation to retail clients as MIFID II prevents intermediaries from concluding TTCA with these clients. The requirement referred to in the UK includes an additional document providing a clear, concise summary of specified key information, extracted from complex contractual documentation, to which it must be appended.

### *5.2.3 Summary of rationale for different approaches*

The differences in the regulatory approaches to re-hypothecation taken in the US and the EU are largely based on the wider regulatory and legal context in each jurisdiction. Important factors include: differences in bankruptcy treatment of re-hypothecated client assets in various jurisdictions; existing customer protection regimes; and the existence of different property interest laws (such as title transfer versus security interest). However, all regulatory approaches are designed to protect client assets.

## 5.3. Possible cases and challenges for harmonising regulatory approaches

### *5.3.1 Merits of possible harmonisation of regulatory approaches*

Although the differences in the regulatory approaches to re-hypothecation of client assets across jurisdictions are largely based on the differences in the wider regulatory/legal context, the FSB examined the possible merits in harmonising regulatory approaches regarding re-hypothecation to mitigate associated potential financial stability risks.

#### *5.3.1.1 Potential decrease in opportunities for regulatory arbitrage*

The August 2013 Report stated that "*harmonisation of client asset rules with respect to re-hypothecation is, in principle, desirable from a financial stability perspective in order to limit the potential for regulatory arbitrage across jurisdictions*".[63] If financial intermediaries and/or their clients are less incentivised to potentially shift their activities among different jurisdictions as a result of consistent regulatory approaches to re-hypothecation, then potential opportunities for regulatory arbitrage may, in turn, decrease.

However, as highlighted in Section 4.3.2, market participants have indicated in informal meetings that differences in regulatory approaches to re-hypothecation do not appear to be a significant factor in a client's decision on where to open a prime brokerage account. Instead, the decision appears to be based on multiple factors such as location of assets, client asset and bankruptcy protection, and funding costs. Furthermore, agent lenders noted that, over the last several years, their clients had become more interested in having their assets (i.e. the collateral received from borrowers) held in segregated accounts, often with third-party custodians.

Consequently, it appears that differences in regulatory approaches to re-hypothecation do not appear to be a significant contributor to cross-border regulatory arbitrage, but instead are one of many factors considered by financial intermediaries and/or their clients in determining where to open an account. In addition, the recommendations regarding re-hypothecation from the August 2013 Report serve to provide a set of common principles across jurisdictions reducing concern relating to potential regulatory arbitrage.

#### *5.3.1.2 Promotion of level-playing field*

The harmonisation of regulatory approaches to re-hypothecation may promote steps to ensure a more level-playing field in a cross border context. Ensuring a level-playing field within and across jurisdictions may promote consistency among client asset rules with respect to re-hypothecation, particularly in jurisdictions where regulatory gaps may exist. Promoting a more

[63] See August 2013 Report, p.16.

level-playing field both within and among jurisdictions, however, should not result in a lessening of existing standards in any jurisdiction.

As highlighted by market participants at the informal meetings, the implementation of ongoing prudential requirements (e.g. the Basel III framework) have served to level the playing field among different jurisdictions, including with respect to how financial intermediaries re-hypothecate client assets (see Section 4.3). These prudential reforms serve to affect the behaviours of both bank and non-bank subsidiaries in consolidated global banking groups, since most large prime brokers are part of such groups.

#### *5.3.1.3 Enhanced transparency of client asset protection standards*

Similar or harmonised approaches to re-hypothecation may enhance the transparency of client asset protection standards on a cross-border context, since such harmonisation may increase clients' understanding of the treatment of their assets in various jurisdictions. This enhanced clarity may, in turn, reduce client uncertainty during periods of stress. Enhanced transparency resulting from harmonised approaches also may, in some cases, facilitate the resolution of a financial intermediary if client assets are treated similarly across jurisdictions, potentially reducing complexities in a cross-border insolvency.

At the informal meetings, market participants explained that one of the biggest changes since the financial crisis has been that most clients have moved from using a single prime broker to splitting their business among several prime brokers (see Section 4.3.2). Clients now focus on the credit quality of their prime brokers and they more thoroughly assess how their assets will be treated in the event of a prime broker's bankruptcy. In addition, as described above, the Financial Conduct Authority (FCA) in the UK has adopted certain reforms to its re-hypothecation regime (e.g. daily reporting to regulators and clients, mandatory disclosure to clients on the risks associated with allowing re-hypothecation,[64] and stricter record-keeping requirements) to address concerns raised by the liquidation of LBIE, Lehman's UK broker-dealer. These enhancements have worked to increase transparency to clients and enhance their understanding of the re-hypothecation of their assets. As a result, this may decrease client uncertainty with respect to a client's right to its re-hypothecated assets upon a firm's insolvency resulting in harmonising regulatory approaches to re-hypothecation as less of an immediate concern to mitigating potential financial stability risks.

### *5.3.2 FSB policy recommendation on the regulations governing re-hypothecation of client assets*

In order to address potential stability risks stemming from re-hypothecation (see Section 3), the FSB set out in its August 2013 Report[65] the following three principles for authorities to address in their regulations:

[64] On mandatory disclosure of risks to clients see footnote 62 above.

[65] The policy goal is to reduce financial stability risks arising from client uncertainty about the extent to which assets have been re-hypothecated and the treatment in case of bankruptcy, and to limit re-hypothecation of client assets (without an offsetting indebtedness) to financial intermediaries subject to adequate regulation of liquidity risk. See page 5 of the August 2013 Report.

(i) Financial intermediaries should provide sufficient disclosure to clients in relation to re-hypothecation of assets so that clients can understand their exposures in the event of a failure of the intermediary;

(ii) Client assets may be re-hypothecated by an intermediary for the purpose of financing client long positions and covering short positions, but they should not be re-hypothecated for the purpose of financing the intermediary's own-account activities, and

(iii) Only entities subject to adequate regulation of liquidity risk should be allowed to engage in the re-hypothecation of client assets.

The stock-taking exercise among REG member jurisdictions in relation to the status of their implementation of Recommendation 7 of the August 2013 Report (which is to be implemented by January 2017), suggested that Recommendation 7 has been at least partially implemented in all of these jurisdictions (see Annex 2). Certain commonalities across jurisdictions with respect to implementing the first and third components of Recommendation 7 (i.e. mandatory client disclosure/capital and liquidity requirements) were also noted:

- Most jurisdictions require clients to consent before their assets can be re-hypothecated;[66]
- All jurisdictions have reporting mechanisms in place to track the status of re-hypothecation of client assets (with the means and frequency of such reporting varies across jurisdictions);
- No jurisdiction imposes an outright prohibition on the practice of re-hypothecation by all of its financial intermediaries;
- Many jurisdictions' restrictions vary depending on whether the client assets are in the form of cash versus non-cash;
- Most jurisdictions impose greater restrictions on the re-hypothecation of client assets by investment funds versus re-hypothecation by banks/investment firms; and
- All jurisdictions restrict the practice of re-hypothecation of client assets to financial intermediaries that are subject to capital and liquidity requirements.

A possible area of regulatory divergence may be with respect to the second component of Recommendation 7 (i.e. client assets should not be re-hypothecated to fund own-account activities). However, while the implementation approaches may differ, this should not be an issue as long as they achieve the underlying goal (i.e. they result in similar protections for client assets that ensure that financial intermediaries cannot finance a material portion of their own account activities by re-hypothecating their client's assets). In addition, the FSB has established a regular monitoring process on the national/regional status of implementing this recommendation, among other policy recommendations in the August 2013 Report.

#### *5.3.3 Challenges associated with harmonisation of regulatory approaches*

In addition to the issues discussed above, based on the survey conducted among REG member jurisdictions, it appears that there would be some significant operational challenges to

[66] Such consent is often not necessary if the client assets are transferred to the intermediary by the client by way of title transfer since the ownership rights, that are automatically transferred, include a right of use.

harmonising regulatory approaches to re-hypothecation. These challenges include the following:

- Regulatory approaches to re-hypothecation are deeply correlated with securities and insolvency laws, as well as structures of markets (cash- or securities-collateral driven, tri-party or bilateral repos), which are very different among jurisdictions;[67]
- Individual jurisdictions pursue different rationales in the design of re-hypothecation laws and regulations (from financial stability issues to client asset protection);
- Different financial intermediaries have different funding models (banks vs. broker-dealers); and
- Other laws and regulatory regimes (e.g. property law) directly impact the suitability of specific measures to implement re-hypothecation rules.

### 5.4. Recommendations for harmonising regulatory approaches to the re-hypothecation of client assets

Although differences exist in regulatory approaches to the re-hypothecation of client assets, these differences stem from the fact that regulatory approaches are deeply rooted in national/regional securities laws and other legal regimes that vary across jurisdictions. However, all regulatory approaches are designed to protect client assets. Also, since the 2007-09 financial crisis, market participants such as prime brokers and their clients have made notable improvements in their risk management practices associated with re-hypothecation, while regulators have strengthened the relevant regimes. Based on such observations, **the FSB believes there is no immediate case for harmonising regulatory approaches to re-hypothecation of client assets. The FSB meanwhile encourages its member jurisdictions to implement Recommendation 7 of the August 2013 Report, as it serves to provide the common basis for authorities to design their regulations with respect to re-hypothecation of client assets.**

## 6. Addressing residual financial stability risks associated with collateral re-use

### 6.1. Existing policy measures for addressing residual financial stability risks associated with collateral re-use

Following the 2007-09 financial crisis, a number of regulatory reforms related both directly and indirectly to the re-use of collateral were undertaken to improve market resilience, which led to mitigating at least some of the risks that are identified in Section 3.

#### *6.1.1 Basel regulatory framework*

A number of recent regulatory reforms have been focused on the banking sector:

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[67] For example, the definition of "client assets" may differ across jurisdictions, as noted in the August 2013 Report.

- *Leverage level* - The Basel III Leverage Ratio (LR) framework[68] may indirectly incentivise banks to keep re-use activity below excessive levels, to the extent that banks are constrained by the LR. Specifically, if the LR is constraining for a particular bank, any additional funding raised by re-using collateral received will trigger a regulatory capital charge equal to the LR multiplied by the amount of funding raised.[69] Therefore, the LR is expected to address risk related to the contribution of re-use of collateral to the build-up of leverage in the banking sector.
- *Interconnectedness* - The BCBS' supervisory framework for measuring and controlling large exposures[70] will reduce concentration risk to single counterparties. Furthermore, the move to central clearing and mandatory margin requirements for derivatives and minimum haircuts for securities financing transactions will provide more protection against losses through higher collateralisation of such transactions.
- *Pro-cyclicality* – The Basel III liquidity framework[71] is expected to limit the pro-cyclical elements of collateral re-use. First, the LCR requires banks to hold sufficient high-quality liquid assets to withstand a 30-day liquidity stress. Second, the NSFR is designed to ensure that banks have liabilities that are sufficiently stable given the liquidity characteristics of their assets. Hence, once the LCR and NSFR are in place, banks are expected to have a more stable liquidity profile, mitigating related risks associated with collateral re-use.

#### *6.1.2 Other regulatory changes*

In November 2015, the FSB finalised and published its *Regulatory Framework for Haircuts on Non-centrally Cleared Securities Financing Transactions*. The framework consists of: (i) qualitative standards for methodologies used by market participants to calculate haircuts; and (ii) framework of numerical haircut floors that will apply to non-centrally cleared securities financing transactions in which financing against collateral other than government securities is provided to non-banks, including numerical haircut floors.[72] Post crisis reforms have also led to an increased use of CCPs to clear securities financing transactions and derivatives, which may reduce the likelihood of adverse liquidity shocks that result from increased risk-aversion in stressed market conditions.

### 6.2. Recommendations to address residual financial stability risks associated with collateral re-use

Although existing or planned policy measures will reduce potential financial stability risks associated with collateral re-use set out in Section 3, there could be some residual risks that may warrant policy responses. When authorities consider the appropriate policy responses to financial stability concerns associated with collateral re-use, they will need to carefully design

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68 BCBS (2014a).

69 For example, a 3% LR would require banks to hold an additional three units of capital for raising 100 units of cash by re-using collateral. This argument only holds for transactions that cannot be netted under the LR framework.

70 BCBS (2014b).

71 BCBS (2014c).

72 See FSB (2015a).

such responses so as to make them proportionate to the potential risks posed, while also considering the benefits the re-use of collateral may provide.

### *6.2.1 Monitoring of collateral re-use activities*

Consistent data on re-use of collateral would provide authorities with an overview of the collateral re-use activity, which can be relevant for financial stability purposes. The collection of such data would support authorities' monitoring of financial stability risks arising from collateral re-use activities and inform any policy response to address these risks, if warranted.

Several initiatives are currently under way that will improve data availability on collateral re-use activities in the medium term. Foremost, the FSB has developed measures of collateral re-use for securities financing transactions, with the aim to produce global aggregates of re-use activity through potential inclusion in the FSB's global securities financing data standards.[73] The FSB **considers that the successful completion of this initiative will be an important step towards obtaining a clearer understanding of global (and national/regional) collateral re-use activities in the securities financing markets, and thus, reaffirms the importance of implementing the global securities financing data collection and aggregation.**

In addition to the FSB work, other important national and academic initiatives are under way to develop an overview of collateral re-use activities. In the EU, the SFTR[74] is expected to provide information to the relevant authorities on collateral re-use in EU securities financing markets starting from mid-2018 as well as data on the re-hypothecation of funds' assets. In the US, some banks/dealers are reporting their collateral re-use activity in their public reports. Similarly, other globally active banks in the EU and Asia report comparable numbers in their annual reports. The US SEC has also adopted new reporting rules that will require that, among other things, registered funds report information about securities on loan and the reinvestment of cash collateral that secures the loans.[75] Similarly, a few academic studies have developed methods to measure the amount of re-use in repo markets, for instance proposing the use of an algorithm which assesses the re-use of collateral based on individual transactions in the Swiss[76] and Australian repo markets.[77]

### *6.2.2 Collateral re-use activities of non-banks*

Collateral re-use plays an important role in the functioning of financial markets but it also poses potential risks to financial stability, such as contributing to a build-up of leverage and interconnectedness, and associated procyclicality. Although such potential financial stability risks are reduced by existing (or planned) regulatory initiatives, **the FSB encourages national/regional authorities to consider monitoring collateral re-use activities beyond securities financing transactions as appropriate.**

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[73] FSB (2017).

[74] Regulation (EU) 2015/2365.

[75] See https://www.sec.gov/rules/final/2016/33-10231.pdf.

[76] Fuhrer et al (2016).

[77] Issa and Jarnecic (2016).

## Annex 1: Summary table of existing regulatory approaches to re-hypothecation of client assets by broker-dealers[1]

<table>
<tr><th></th><th>Canada</th><th>France</th><th>Germany</th><th>Italy</th><th>Japan</th><th>Switzer-land</th><th>UK</th><th>US</th><th>EU[2]</th></tr>
<tr><td>(i) Disclosure requirements</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>a) Disclosure to professional clients</td><td rowspan="2">✓[3]</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td>-</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td></tr>
<tr><td>b) Disclosure to retail clients</td><td>✓</td></tr>
<tr><td>(ii) Consent requirements</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>a) Consent of professional clients</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td><td>✓[4]</td><td>✓</td><td rowspan="2">✓</td><td rowspan="2">✓</td></tr>
<tr><td>b) Consent of retail clients</td><td>✓</td><td>✓</td></tr>
<tr><td>(iii) Internal and external audit requirements</td><td>✓</td><td>✓</td><td>✓<br>(external audit)</td><td></td><td>✓</td><td></td><td>✓</td><td>✓</td><td></td></tr>
<tr><td>(iv) Reporting requirements on disposition of re-hypothecated assets</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>a) Reporting to clients</td><td>✓[5]</td><td>✓[6]</td><td>-</td><td>✓[7]</td><td>-</td><td>✓</td><td>✓</td><td>-[8]</td><td></td></tr>
<tr><td>b) Reporting to regulators</td><td>✓[9]</td><td>✓[10]</td><td>✓[10]</td><td>✓[10]</td><td>-</td><td>✓</td><td>-[11]</td><td>✓</td><td>✓[10]</td></tr>
</table>

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| c) Reporting through public disclosures | - | ✓[12] | ✓[9] | | - | | | ✓ | |
| (v) Prohibition or limitation on re-hypothecation | | | | | | | | | |
| a) Outright prohibition | - | - | - | - | - | - | - | - | |
| b) Prohibition on using client assets for own-account activities | ✓ | ✓[13] | ✓[13] | ✓[13] | - | - | -[14] | ✓ | ✓[13] |
| c) Quantitative limits on re-hypothecation | ✓[15] | - | - | - | - | - | - | ✓[16] | - |
| (vi) Alternatives to traditional creditor treatment in bankruptcy for customers | | | | | | | | | |
| a) Priority claims for clients | ✓ | -[17] | - | - | -[18] | - | -[19] | ✓ | - |
| b) Existence of an investor protection fund | ✓ | ✓[20] | ✓ | ✓ | ✓ | - | ✓[21] | ✓ | ✓[22] |
| (vii) Capital and liquidity requirements for firms that re-hypothecate client assets | ✓[23] | ✓ | ✓ | ✓ | ✓[24] | ✓ | ✓ | ✓[25] | ✓ |
| (viii) Segregation and custody requirements | ✓ | ✓ | ✓ | ✓ | ✓ | ✓[26] | ✓ | ✓ | ✓ |

Notes:

[1] The scope of this table is limited to the regulation of the re-hypothecation of client assets by broker-dealers. Other entities engaged in such activity are also regulated but are not covered in this table. The information is based on a survey conducted among REG members.

[2] EU member jurisdictions can adopt additional rules.

[3] All Canadian investment dealers are required to be members of the Investment Industry Regulatory Organization of Canada (IIROC), a national self-regulatory organisation. IIROC members are required to provide quantitative disclosure to clients and regulators on exposures and the amount of client assets held in segregation. There are additional qualitative risk disclosure requirements for investment dealers with respect to: (i) retail clients; and (ii) all clients on the dealer's ability to use their free credit cash balances (un-invested cash) in the conduct of the dealer's business.

[4] For banks, professional clients agree on re-hypothecation of their assets via the general terms and conditions. For investment funds, by agreeing to the conditions set out in the fund contract, the investor consents to the possibility of re-hypothecation. The new Swiss Financial Services Act, which is expected to come into force in 2017, will contain the same requirements as the current FINMA Circular 2010/02 "Repo/SLB", i.e. prior consent from clients will become a legal requirement.

[5] IIROC members are required to issue month-end customer statements showing holdings of client assets and amounts held in segregation. If applicable, the IIROC member must also include a notation on every client statement reminding the client of the dealer's rights with respect to client free credit cash balances.

[6] Clients are informed of any use of their assets through the general information duties of the intermediary related to the debits/credits on these accounts.

[7] The account statement provided by intermediaries shall include the following information: (a) details of all the financial instruments and money held at the end of each term to which the statement refers; (b) the extent to which client assets have been the object of financing transactions through financial instruments; and (c) the amount and source of benefits for the clients accruing from financing transactions through financial instruments.

[8] Clients are sent account statements containing a description of any securities positions, money balances, or account activity.

[9] IIROC members are required to report "Client Net Equity" (in aggregate) in their financial report filings. They are also required to maintain up-to-date client segregation reports (securities) and client sub-ledger reports (customer balances). If client securities are borrowed or loaned, additional detailed recordkeeping requirements will apply. IIROC and provincial securities regulators can access a dealer's books and records at any time.

[10] All securities financing transactions have to be reported to a trade repository who has to make the data available to supervisors (entry into force of the relevant regulation is phased in starting 2017).

[11] However, Financial Conduct Authority (FCA) in UK has full access to any documentation requested under S165 powers of the Financial Services Act.

[12] A trade repository shall regularly, and in an easily accessible way, publish aggregate positions by type of securities financing transactions reported to it.

[13] Investment firms are not allowed to use the client funds for their own account (Article 16 of Directive 2014/65/EU). However, they are allowed to use clients' "financial instruments" (securities) for own account if client provides express consent. Meanwhile, "credit institutions" may use "client funds" (cash) for own account.

[14] The UKFCA does have the limitation that client consent is required to use client assets for own account or for the account of a third party.

[15] IIROC effectively prohibits dealers from using their clients' assets for their own-account activities by: (i) requiring that all fully paid or excess margin securities held by an IIROC member for a client must be segregated and identified as being held in trust for such client; (ii) imposing a quantitative limit of 100% of a customer's indebtedness to the dealer on the value of client securities that are available to the dealer for re-hypothecation; (iii) with respect to client cash, prescribing both a minimum reserve amount that must be held in segregation and a maximum amount available for use by the dealer in the conduct of its business; and, (iv) through the application of capital, liquidity, margin and net equity requirements.

[16] SEC Exchange Act Rule 15c3-3 requires that every broker-dealer obtain and maintain possession or control of customer fully paid and excess margin securities. This means the broker-dealer cannot lend or hypothecate these securities and must hold them itself or, as is more common, in a satisfactory control location. Quantitative limits (140% of a customer's debit balance) on re-

hypothecation are included in this rule under the definition of excess margin securities. Rule 15c3-3 also requires that a broker-dealer maintain a reserve account that contains (at least) the net dollar amount of cash that the broker-dealer owes to its customers (in accordance with a prescribed formula). Additional quantitative limits on re-hypothecation of client assets are contained in SEC Exchange Act Rules 8c-1 and 15c2-1.

[17] According to Article L.211-10 of the Monetary and Financial Code (MFC),in the event of a court-ordered reorganisation or liquidation procedure being initiated against the intermediary referred to in Article L. 211-3, the receiver or liquidator, acting jointly with the provisional receiver or liquidator, if any, appointed by the Authorité de Contrôle Prudentiel et de Résolution shall verify, for each financial security, that the number of securities held in an account with a central depository or with another intermediary on behalf of the defaulting intermediary, regardless of the nature of the accounts opened with them, is sufficient to enable the intermediary to meet its obligations towards the account holders.

[18] Client's assets which are re-hypothecated will be categorised into general claims to dealers. However, when a client gives consent to a dealer concerning its re-hypothecation of his/her securities placed in the firm as collateral, section 3, paragraph 2 of Article 43-2 of Financial Instruments and Exchange Act (FIEA) requires the firm to put the money equivalent to the current price of the securities used as collateral by the firm into a custodian bank licensed in Japan for the purpose of returning the client's assets in case of insolvency of the firm. In this sense, the client is protected.

[19] The Investment Bank Special Administration Regime (2011) requires an insolvency practitioner to prioritise three objectives, including the return of client assets (Regulation 10(1)(a), Objective 1) and the FCA has the power to direct an insolvency practitioner to prioritise Objective 1 (Regulation 16(1)).

[20] When an investment services provider, an investment firm or a bank is no longer able to return to its customers the securities (or financial instruments) that they entrusted to it, the FGDR, the French investor-compensation scheme, compensates the customers up to €70,000. All investment services providers (investment firms or credit institutions authorised to provide investment services) operating in France are covered by the investor compensation scheme. Membership in this scheme is a prerequisite for conducting their business in France.

[21] For eligible claimants, the Financial Services Compensation Scheme (FSCS) may compensate up to £50,000 for losses in connection with designated investment business and £75,000 for banking deposits. For amounts beyond this, the clients in question may rank as general creditors of the firm in insolvency for any re-hypothecated money or assets.

[22] According to Articles 2, 4 and 10 of the Directive 97/9/EC of 3 March 1997 on investor-compensation, each Member State shall ensure that within its territory one or more investor-compensation schemes are introduced and officially recognised. Member States shall ensure that schemes provide for cover of not less than €20,000 for each investor in respect of the claims.

[23] The Basel III framework in Canada applies on a consolidated basis to the banking groups that own the largest Canadian investment dealers (but not to individual-investment dealers on a stand-alone basis). At the dealer-level, IIROC imposes minimum capital requirements based on the dealer's size and business model. Dealers are subject to IIROC's Dealer Member Rules and IIROC's oversight activities that include compliance examinations and enforcement of prudential rules relating to liquidity and solvency. Provincial securities transfer legislation also imposes a general requirement on dealers to maintain sufficient assets to satisfy all security entitlements they have established in favour of their clients.

[24] Only investment firms registered under the FIEA are allowed to conduct financial instruments business in Japan. Minimum entry requirements include minimum capital/deposits, "fit and proper" rules for officers, adequate internal controls and risk management systems and sufficiency of resources.

[25] Broker-dealers registered with the SEC are subject to SEC Exchange Act Rule 15c3-1, the net capital rule, which is a liquidity based rule.

[26] The Financial Markets Infrastructure Act, which came into effect at the beginning of 2016, requires the segregation of client assets (see Articles 54, 59, 69 and 73). The assets of investment funds have to be placed with an approved custodian bank.

## Annex 2: Current status of implementing Recommendation 7 of the August 2013 Report (based on self-assessment)

| | Canada | France | Germany | Italy | Japan | Switzer-land | UK | US[1] | EU |
|---|---|---|---|---|---|---|---|---|---|
| Principle 1: Financial intermediaries should provide sufficient disclosure to clients in relation to re-hypothecation of assets so that clients can understand their exposures in the event of a failure of the intermediary. | Yes | Yes | Yes | Yes | Yes | Banks: Yes for retail<br>Funds: re-hypotheca tion not allowed | Yes | Yes | (In the process of implement -ation) |
| Principle 2: In jurisdictions where client assets may be re-hypothecated for the purpose of financing client long positions and covering short positions, they should not be re-hypothecated for the purpose of financing the own-account activities of the intermediary. | Yes | Yes | No | Yes | Yes | No<br>Funds: re-hypotheca tion not allowed | No | Yes | (Currently being assessed) |
| Principle 3: Only entities subject to adequate regulation of liquidity risk should be allowed to engage in the re-hypothecation of client assets. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

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