FSB FINANCIAL STABILITY BOARD

Transforming Shadow Banking into Resilient Market-based Finance

Non-Cash Collateral Re-Use: Measure and Metrics

25 January 2017

Contacting the Financial Stability Board
Sign up for e-mail alerts: www.fsb.org/emailalert
Follow the FSB on Twitter: @FinStbBoard
E-mail the FSB at: fsb@fsb.org

Table of Contents

Page

1. Introduction 1

2. Scope of collateral re-use measure 3

3. Collateral re-use measure at the national/regional level 4

4. Collateral re-use metrics 5

4.1 Collateral re-use at the jurisdiction and global level 5

4.2 Collateral re-use rate 6

4.3 Share of re-used collateral 6

4.4 Concentration of re-use activities 7

4.5 Collateral circulation length 7

4.6 Collateral multiplier (at the global level only) 8

5. Data architecture and data elements to be submitted to the FSB 8

6. Next steps 10

Annex 1: An example of collateral re-use data aggregation 12

1. First tier: data collection at the national/regional level 12

2. Second tier: data aggregation at the global level 13

Annex 2: Data elements to be transmitted to the FSB by national/regional authorities 14

1. Introduction

Non-cash collateral (hereafter collateral) is "re-used" when a market participant, such as a bank, receives securities[1] as collateral in one transaction and subsequently sells, pledges or transfers this collateral in a second transaction.[2] Collateral may be received by a market participant as a result of a variety of transactions, such as reverse repos, securities lending, margin lending and over-the-counter (OTC) derivatives. If this collateral is eligible for re-use, the collateral taker can use it as collateral for other transactions. Collateral received may also be sold, creating a short position.

The re-use of collateral plays an important role in the functioning of financial markets: it increases the availability of collateral, and consequently reduces transaction and liquidity/funding costs for many market participants, since a given pool of collateral assets can be re-used to support more than one transaction.[3] This lowers the cost of trading, which is beneficial for market liquidity.[4] Similarly, this increase in the availability of collateral can reduce the costs associated with long and short positions, thereby facilitating price discovery and market efficiency. Furthermore, collateral re-use may facilitate the clearing and settlement processes by increasing the availability of securities that could be borrowed to complete the settlement process, potentially reducing the likelihood of settlement failures. Collateral re-use, however, may also pose financial stability risks, for example by:

- contributing to the build-up of excessive leverage of individual entities and in the financial system as a whole;
- increasing the interconnectedness of market participants, due to chains of transactions involving the re-use of collateral, which may create a risk of contagion where fails to deliver re-used collateral by one party may potentially cause additional fails;
- increasing the sensitivity of market participants to counterparty credit risk, especially in stressed conditions, possibly intensifying strains already present in markets and contributing to pro-cyclicality in the financial sector; and
- amplifying stress in the market if a sudden drop in the value of securities widely held and re-used as collateral lead to substantial margin calls and higher haircuts, or even the exclusion of these securities from the pool of eligible collateral.

---

1 Securities include shares of investment funds.

2 Meanwhile, re-hypothecation constitutes a subset of collateral re-use and is defined as "any use of client assets by a financial intermediary".

3 The Financial Stability Board (FSB) has been working to improve its understanding of collateral re-use practices and their potential impact on financial stability. While noting that there is not an immediate case for harmonising regulatory approaches to re-hypothecation, the FSB reaffirmed the importance of implementing the global securities financing data collection and aggregation as an important step towards obtaining a clearer understanding of global (and national/regional) collateral re-use activities in the securities financing markets. This would help authorities in the identification of emerging financial stability risks potentially arising from the re-use of collateral and inform policy responses to addressing these risks. The FSB also encouraged national/regional authorities to consider monitoring collateral re-use activities beyond securities financing transactions as appropriate. For details, see www.fsb.org/2017/01/re-hypothecation-and-collateral-re-use-potential-financial-stability-issues-market-evolution-and-regulatory-approaches/.

4 http://www.bis.org/publ/cgfs49.pdf

As part of its global securities financing data collection initiative,[5] the Financial Stability Board (FSB) has been considering how to identify data elements that would allow monitoring the re-use of collateral. In November 2015, based on the findings of a public consultation, the FSB decided to include in its global securities financing data standards a data element on "collateral re-use eligibility" (i.e. an indicator of the fraction of the collateral stock that is eligible for re-use), to be collected for collateral used in securities financing transactions (SFTs).[6] It also asked its Data Experts Group (DEG) to continue developing possible measures of "collateral velocity" (including measures of collateral re-use) and identify appropriate data elements for deriving these measures, with the aim of integrating also these data elements into the global securities financing data standards. Such data collection would support authorities' identification of financial stability risks arising from the re-use of collateral (e.g. interconnectedness, leverage and procyclicality) and inform any policy responses to addressing these risks.

To this end, the FSB published in February 2016 a report that illustrated potential collateral re-use measures, metrics and related data elements and invited views from the public, including on the scope of the data collection (hereafter February 2016 report).[7] Over a two month period, fourteen responses were received on the report covering a wide range of market participants and geographical areas.[8] The importance of monitoring collateral re-use was broadly shared by respondents, although there were concerns with some of the measures and metrics illustrated in the document.

In light of the responses received, the FSB has now finalised the measure and metrics of non-cash collateral re-use as well as the related data elements, as described in this document. The collateral re-use measure will be based on the approximate measure proposed in the February 2016 report. It will cover SFTs only, reflecting: (i) available evidence on current practices for collateral re-use; and (ii) the scope of existing and incoming national/regional data collections as well as that of the FSB global securities financing data collection.

The data elements required for computing the collateral re-use measure and the associated metrics are also described in this document. Some national/regional authorities may decide to collect directly the approximate measure (and possibly some metrics) from reporting entities rather than the underlying data needed to compute them. In both cases, the measure at the entity level will be aggregated by national/regional authorities and transmitted to the FSB as a part of its global securities financing data standards. Unlike other data elements in the data standards, authorities will be asked to report these data elements for global aggregation only from January 2020.

The FSB is cognisant of the need to review the scope as well as the methodology for measuring collateral re-use in light of evolving market practices. Therefore, it will review the scope,

---

5 See http://www.fsb.org/wp-content/uploads/FSB-Standards-for-Global-Securities-Financing-Data-Collection.pdf. The Standards defined the data elements for repos, securities lending and margin lending that national/regional authorities will be asked to report as aggregates to the FSB for financial stability purposes. National/regional authorities may, however, decide to collect more granular data (e.g. by counterparty or transaction) or aggregated data at position/portfolio/entity level.

6 See, for example, the data element 4.8 for repos in the global securities financing data standards (http://www.fsb.org/wp-content/uploads/FSB-Standards-for-Global-Securities-Financing-Data-Collection.pdf).

7 See http://www.fsb.org/2016/02/possible-measures-of-non-cash-collateral-re-use/.

8 All public responses received are published on the FSB website (http://www.fsb.org/2016/05/possible-measures-of-non-cash-collateral-re-use-2/).

measure and metrics of collateral re-use five years after the launch of the global data collection with regard to collateral re-use measures.

In this document, the scope of data collection related to collateral re-use is clarified (Section 2). This is followed by an explanation of: (i) methodology to measure collateral re-use (Section 3); (ii) metrics of re-use for financial stability purposes (Section 4); (iii) information to be transmitted to the FSB and issues related to data architecture to ensure sufficient quality of the global aggregates (Section 5). The document concludes with a discussion of next steps.

2. Scope of collateral re-use measure

Collateral is "re-used" when a market participant, such as a bank, receives securities as collateral in one transaction and subsequently sells, pledges or transfers this collateral to a second transaction. Available evidence suggests that a large proportion of collateral re-use is currently occurring via SFTs, although collateral re-use may also occur with other types of transactions.[9] Based on this, and in line with the scope of the global securities financing data standards, the FSB proposed in the February 2016 report that the scope for a collateral re-use measure could be restricted to collateral received and subsequently re-used in SFTs.[10] Most comments received from market participants shared the view that this is a meaningful basis for measuring collateral re-use. The scope of collateral re-use being measured is therefore restricted to collateral received and subsequently re-used in SFTs. However, authorities are encouraged to consider monitoring collateral re-use activities beyond securities financing transactions as appropriate.

Going forward, the FSB will monitor market developments to ensure that the SFT-only scope of the collateral re-use measure remains adequate. A significant increase of collateral re-use outside SFTs[11] would make the scope of the measure less relevant to understand global trends in collateral re-use and the risks they may pose to financial stability. It may also bias the re-use measure itself if collateral collected via SFTs is significantly re-used in financial transactions other than SFTs and vice-versa.[12]

---

[9] See, for example, the evidence collected by the European Systemic Risk Board (https://www.esrb.europa.eu/pub/pdf/occasional/20140923_occasional_paper_6.pdf?263fab825867415f9054177dac66d723).

[10] Transactions executed with central banks are excluded from the data reporting scope in the global securities financing data standards (see Section 2.2 "Definitions of data elements"). Therefore, collateral received via central banks' liquidity provision facilities such as the Securities Lending Facilities is excluded from the scope of collateral re-use measure.

[11] The relative proportion of collateral re-use occurring as a result of SFTs may, for example, change as a result of the entry into force of the BCBS-IOSCO margin requirement for non-centrally cleared derivatives starting from September 2016, which may affect the re-use of collateral in derivatives transactions.

[12] This may happen, for example, if evolving market practices with respect of collateral management increasingly tend to pool collateral used in different types of financial transactions.

3. Collateral re-use measure at the national/regional level

The February 2016 report listed three alternative measures of collateral re-use under consideration: an exact measure; an approximate measure; and an indirect approximate measure. According to the first measure, market participants would report whether collateral they posted is in the form of "own assets" or in the form of assets that were received as collateral in a previous transaction. The second measure would require market participants to rely on granular data on their own assets and to distinguish between collateral received that is eligible and ineligible for re-use. Finally, the third measure would rely on data elements already included in the global securities financing data standards, but it would result in a more approximate measure of collateral re-use.[13]

Although each measure of collateral re-use has some benefits, the responses received on the February 2016 report suggested that market practice is generally aligned with the assumptions behind the approximate measure (i.e. the second measure). For example, market participants do not generally distinguish between own securities or securities originating from another collateralised transaction when posting collateral. Respondents also highlighted that it would be extremely difficult to extract the information needed to compute the exact measure and indicated that the indirect approximate measure may lead to over-estimating collateral re-use. Accordingly, the FSB has decided to adopt the approximate measure to monitor collateral re-use and to include it in its global securities financing data standards.

The approximate measure of collateral re-use by individual entities is calculated using data on total own assets, collateral received that is eligible for re-use, and collateral posted.[14] For a given collateral type *j*,[15] collateral re-used by reporting entity *i* will be estimated as:

$$collateral_{ij}^{reused} = \left(\frac{collateral_{ij}^{received,eligible_for_reuse}}{collateral_{ij}^{received,eligible_for_reuse} + assets_{ij}^{own}} \right) \times \left(collateral_{ij}^{posted} \right)$$

where $\text{collateral}_{\text{ij}}^{\text{received,eligible_for_reuse}}$ represents the market value of collateral of type *j* received by entity *i* that is eligible for re-use, $\text{assets}_{\text{ij}}^{\text{own}}$ represents assets of the same type *j* owned by entity *i*, and $\text{collateral}_{\text{ij}}^{\text{posted}}$ stands for posted collateral by entity *i*, again of type *j*. This approximate measure implicitly assumes that the probability of a security being posted as collateral is independent of whether the collateral comes from an entity's own assets or from

---

[13] For more details on these measures, see Section 3 of the February 2016 report.

[14] For the purpose of this analysis, collateral posted and received include any type of collaterals that are used in transactions within the scope (i.e. SFTs), irrespective of their legal structure. Also note that the data element on collateral re-use eligibility applies to securities lent: see the data elements 6.8 ("collateral re-use eligibility") and 6.2 ("position") in Table 6 of the global securities financing data standards (http://www.fsb.org/wp-content/uploads/FSB-Standards-for-Global-Securities-Financing-Data-Collection.pdf). Finally, note that the global securities financing data standards stated that intra-group transactions between different legal entities (banks or other subsidiaries) or between foreign branches and their parent company should be included, according to the "locational" approach. In line with that approach, no infra-group netting of such transactions should take place for the computation of the collateral re-use measure and metrics.

[15] The list of the eight collateral types considered is provided in Table 4, data element 4.9, of the global securities financing data standards.

another collateralised transaction.[16] For institutions that do not track the source of the collateral posted,[17] and as long as the bulk of collateral re-use takes place in SFTs,[18] this method will produce a meaningful approximation of collateral re-use.

If, instead, entities systematically use one source of collateral due, for example, to their business models, their approximate measure of re-use may reflect this characteristic. As an example, a typical bank intermediating SFTs where all collateral received is re-used, is likely to report different values for the collateral re-use measure than a typical broker-dealer engaged in a substantially similar "matched-book" business.[19] For this reason, collateral re-use measures and related metrics are intended for monitoring re-use on a time series dimension and they will generally not be suitable to cross-sectional comparisons across jurisdictions.

4. Collateral re-use metrics

Various metrics related to re-use of collateral were proposed in the February 2016 report and are further clarified in this Section based on the consultation findings. These metrics, based on the collateral re-use approximate measure defined in Section 3, will allow for a more in-depth assessment (than is possible using currently available data) of several market characteristics that have been linked to financial stability risks (e.g. interconnectedness, degree of concentration). These metrics can additionally be calculated for specific asset types typically used as collateral as well as for other relevant breakdowns, as further clarified in Section 5.

4.1 Collateral re-use at the jurisdiction and global level

An aggregated measure of collateral re-use at the national as well as at the global level can provide insights into the contribution of collateral re-use to the degree of interconnectedness in collateralised borrowing markets and to the build-up of leverage. The time series of this measure can help identify the potential pro-cyclical effects of collateral re-use and its contribution to market liquidity.

---

[16] For example, if an entity: (i) purchases $100 of a given security outright and holds it as own assets; (ii) obtains a further $100 of the security, eligible for re-use, as a result of collateral pledges from its counterparties; and (iii) posts $50 of this security as collateral, then the approximate measure will indicate that the entity has re-used $25 of collateral (i.e. ($100 / ($100+$100)) x ($50)). If the entity first re-used collateral received from collateral pledges, then this measure will underestimate the level of re-use; conversely if the entity used assets it purchased first before re-using collateral, then this measure will overestimate the level of re-use.

[17] As mentioned, consultative responses suggest that this is indeed the common market practice.

[18] Even if collateral re-use is mainly limited to the SFTs, a downward bias in the re-use measure may arise for entities using a significant part of their assets to collateralize OTC derivative positions. Consider an entity with $50 in own assets, $100 in collateral received from SFTs eligible for re-use, and $50 in collateral posted in other SFTs. In addition, the entity has a derivatives position that require posting of $50 in collateral. The collateral re-use rate will be estimated as ($100/($100+$50))*$50=$33. However, the actual amount of collateral re-use (including collateral posted for the derivatives position) would be no lower than $50.

[19] Consider a hypothetical stylized bank with $200 in own assets financed through deposits, $100 in reverse repo lending financed through $100 in repo borrowing. Assuming all $100 of collateral in the reverse repo transactions is eligible for re-use, then the reported collateral re-use measure would be ($100/($100+$200)) * $100 = $33. A broker-dealer with $200 in own assets entirely financed through repo borrowing and an additional $100 in reverse repo lending financed through $100 in repo borrowing would report a collateral re-use measure of ($100/($100+$200))* $300 = $100. In both cases $100 of collateral was actually re-used.

Total collateral re-used for a given collateral type *j* in a jurisdiction *k* is equal to the sum of re-used collateral separately for each type j over all entities *i* in that jurisdiction:

$$collateral_{kj}^{reused} = \sum_{i \in k} collateral_{ij}^{reused}$$

Total collateral re-used in a jurisdiction *k* is defined as the sum of re-used collateral, over all entities *i* in that jurisdiction, for all types of collateral *j*:

$$collateral_{k}^{reused} = \sum_{i \in k} \sum_{j} collateral_{ij}^{reused}$$

Global re-use is given by the sum of re-use across all jurisdictions *k*:[20]

$$collateral^{\,reused} = \sum_{k} collateral_{k}^{reused}$$

4.2 Collateral re-use rate

The collateral re-use rate is defined as the proportion of total collateral received by financial institutions that is re-used at a point in time. The re-use rate is defined as:

$$reuse^{rate} = \frac{collateral^{\,reused}}{collateral^{received,eligible_for_reuse}}$$

This metric can be calculated separately for every reporting jurisdiction *k* or at the global level, and its time series could provide insights to what extent re-use of collateral may contribute to procyclicality in the financial sector. It will allow assessing whether intermediaries tend to increase their collateral re-use rate in upswings (e.g. due to lower risk aversion and lower volatility). In addition, it is an input in the estimation of the measure of the average length of collateral chains in Section 4.5.[21]

4.3 Share of re-used collateral

This measure estimates the proportion of posted collateral made up of received collateral that was re-used. This metric can indicate to what extent market participants re-use collateral to finance their clients' or their own activities. In addition, it can provide information on the degree to which entities are exposed to the risk of tighter market conditions on the re-use of collateral. To the extent these sensitivities may result in different levels of measured re-use share in

[20] As an alternative, global re-use of collateral might also be assessed using a weighted-average across jurisdiction. The FSB will clarify the definitions of such weighted-averages by mid-2017 for global monitoring purposes.

[21] This measure may also be computed at entity level: while it will mostly reflect the assumptions behind the adopted re-use measure and the business model of the entity, it may also be informative on the potential of an entity to obtain further liquidity through collateral re-use.

different points of the financial cycle, the time series of this metric will allow capturing potential pro-cyclical dynamics of collateral re-use. This measure is defined as:

$$reuse^{share} = \frac{collateral^{reused}}{collateral^{posted}}$$

Again, this metric can be calculated at reporting jurisdiction level or at the global level.

4.4 Concentration of re-use activities

Concentration of collateral re-use is defined as the Herfindahl-Hirschman index for total re-use activities within a given jurisdiction *k*.[22] This metric will not be computed at global level (as this would require the transmission of entity-level data from all jurisdictions to the global aggregator) but it will be computed only at jurisdiction level and it will provide insights into the degree of concentration of re-use activities in a given jurisdiction. Having a comprehensive view of the developments in this measure across jurisdictions will allow to spot common trends in concentration.

For a given jurisdiction *k* over all entities *i*, the concentration measure is given by:

$$concentration_k = \sum_{i=1}^{n} \left(\frac{collateral_i^{reused}}{collateral_k^{reused}} \right)^2$$

4.5 Collateral circulation length

Collateral re-use may increase the interconnectedness among market participants (banks and non-banks) and potentially contributes to the formation of contagion channels and risks. Average length of collateral chains (i.e. the collateral circulation length) represents a measure of interconnectedness arising from collateral re-use that can create the risk of contagion if an institution included in the chain experiences financial distress. While SFTs usually involve small net exposures due to margin requirements 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. Should such a shock occur, the amount of collateral posted across the financial system may, due to frictions, fall short of what is actually required to satisfy obligations to return collateral to unwind transactions, especially if a security used as collateral is scarce in the market and unavailable to settle transactions among multiple entities. While failure to settle is not an event of default, as one counterparty compensates the other one with cash, settlement failures may undermine market confidence and cause additional counterparty risk. An approximate measure of the average length of collateral chains can be obtained as a function of the average collateral re-use rate. For a given jurisdiction *k*, this metric is given by[23]:

---

[22] This metric will be computed directly by national/regional authorities. The index is bound between 0 and 1.

[23] In theory, length may become infinite if the $\text{reuse}_k^{\text{rate}}$ is equal to 1: in practice, this is not expected to take place at the level of a single jurisdiction.

$$length_k = \frac{1}{1-reuse_k^{rate}}$$

where $\text{reuse}_k^{\text{rate}}$ is the metric set out in Section 4.2 computed at the level of a single jurisdiction. The global value would be obtained by replacing the national/regional collateral re-use rate with the global collateral re-use rate.

4.6 Collateral multiplier (at the global level only)

The collateral multiplier constitutes a measure of collateral velocity. This metric is defined as 1 plus the ratio of re-used collateral to total assets, where total assets are defined as the total value of global assets that typically serve as collateral. It can also be an indicator for the magnitude of the contribution of collateral re-use to the build-up of leverage, and is given by:

$$multiplier = 1 + \frac{collateral^{\,reused}}{assets^{total}}$$

Where no reliable data on the outstanding amounts of assets in certain classes is available (e.g. corporate bonds), this metric may be calculated for some types of collateral only (e.g. government bonds).[24] That is, for type of collateral *j*:

$$multiplier_j = 1 + \frac{collateral_j^{reused}}{outstanding\ asset_j},$$

where

$$collateral_j^{reused} = \sum_k collateral_{kj}^{reused}$$

captures the global re-use of asset *j*.

5. Data architecture and data elements to be submitted to the FSB

To ensure the quality of global aggregates for financial stability purposes, the data architecture issues related to the data collection and transmission from the reporting entities to the national/regional authority (first tier) and then from the national/regional authority to the FSB (second tier) are discussed in this Section.

For the first tier, the design (e.g. reporting at entity or transaction level) and granularity of the data collection in each jurisdiction will remain the responsibility of the relevant national/regional authority, as it is the case for the data collection on SFTs based on the global

[24] Unlike money circulation, there are frictions to collateral circulation, the most evident being the ineligibility for re-use. The global outstanding amount of assets (as a total and for each asset class) will be estimated based on available sources at the global level.

securities financing data standards. Although the approximate measure of collateral re-use must be calculated at the entity level, the FSB will not receive entity-level information in the second tier data transmission. The approximate measure of re-use defined in Section 3 would be calculated,[25] or directly collected,[26] by national/regional authorities at entity level and then summed up, according to the breakdowns discussed below, by national/regional authorities (see Annex 1 for an example of this process). The approximate measure and the related metrics shown in Section 4, would then be reported as national/regional aggregates to the FSB.

The formulas presented above were, for illustrative purposes, either limited to a breakdown by type of collateral or did not include a breakdown. However, the approximate measure and the related metrics may be broken down by other data elements among those included in the global securities financing data standards.

To strike a reasonable balance between the analytical value of the collected breakdowns and the costs that a more detailed data collection may impose on reporting entities and authorities, only two breakdowns, in addition to the collateral type, will be required: (i) jurisdiction of the issuer of the security used as collateral; and (ii) sector of the reporting party. The latter dimension would allow, for example, to have an overview of differences in collateral re-use practices due to diverse business models across reporting sectors.

National/regional authorities would therefore compute re-used collateral according to the formula for the approximate measure in Section 3, augmented with the jurisdiction *c* of the issuer of the security used as collateral, as shown below:[27]

$$collateral^{\,reused}{}_{ijc} = \left(\frac{collateral_{ijc}^{received,eligible_for_reuse}}{collateral_{ijc}^{received,eligible_for_reuse} + assets_{ijc}^{own}} \right) \times \left(collateral_{ijc}^{posted} \right)$$

where $\text{collateral}_{\text{ijc}}^{\text{received,eligible_for_reuse}}$ represents the market value of collateral of type *j* issued in jurisdiction *c* received by entity *i* that is eligible for re-use, $\text{assets}_{\text{ijc}}^{\text{own}}$ represents assets of the same type *j* issued by residents in jurisdiction *c* owned by entity *i*, and $\text{collateral}_{\text{ijc}}^{\text{posted}}$ stands for posted collateral by entity *i*, again of type *j* and issued by residents in jurisdiction *c*. As discussed, authorities may decide to ask directly to reporting entities the value of collateral re-used as long as this is computed according to the formula for the approximate measure above and with all the indicated breakdowns.

For the transmission to the FSB, national/regional authorities will sum up the collateral re-used for entities belonging to the same reporting sector so as to obtain the breakdowns along this dimension. Only national/regional aggregates along the required dimensions (i.e. sector of the reporting party, collateral type and jurisdiction of the issuer of the security used as collateral)

---

[25] With reference to the approximate measure, most of the data elements required to compute these measures are already included in the global securities financing data standards: the only missing data element are the own assets of the reporting firm.

[26] If direct collection of collateral re-use measures from reporting institutions is chosen, national/regional authorities should provide reporting institutions with proper guidance on how to compute the measures so as to ensure a consistent approach across jurisdictions.

[27] Own assets should enter the formula at market value to ensure consistency with the other data elements in the formula. If this is not possible, they should be reported evaluated on the basis of national accounting standards for the reporting entity.

will then be sent to the FSB (Table 1). From the transmitted data, the FSB will compute re-used collateral for higher levels of aggregation (e.g. only by asset type or reporting sector) as foreseen in Section 4.1 of the document.

Metrics listed in Sections 4.2 to 4.6 can also be computed by the FSB from received data, with the exception of the metrics on concentration of re-use activities (Section 4.4) which will be reported by national/regional authorities to the FSB with the breakdowns listed below in Table 1. Authorities will also report the number of reporting entities underlying each reported measure and metrics. Tables in Annex 2 summarises the required data elements that will be included in the global securities financing data standards.

Table 1: Data elements to be transmitted to the FSB

	Data element	Definition
A	Total collateral re-use with breakdowns by sector of the reporting entity; type of collateral; and jurisdiction of the issuer of the security used as collateral (see Table 11 in Annex 2).	Total market value of re-used collateral according to the approximate measure (sum of the values across the reporting financial institutions in a jurisdiction for the required breakdowns)
B	Re-use concentration measure: (i) by collateral type; and (ii) as a total (see Tables 12 and 13 in Annex 2).	Herfindahl-Hirschman index for each jurisdiction to be computed by national/regional authorities.
C	Number of reporting entities for each of the measures and metrics reported above (see Annex 2).	For each measure and metrics, the number of the reporting entities contributing to each measure should be transmitted.

6. Next steps

Based on the timeline set out in the global securities financing data standards published in November 2015, the FSB members are currently working on the detailed operational arrangements to initiate the official data collection and aggregation as from end-2018 data. Meanwhile, national/regional authorities are launching legislative and/or data collection initiatives to better understand their securities financing markets and improve market transparency. For example, in the EU the Regulation (EU) 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of re-use entered into force on 12 January 2016, which requires SFTs to be reported to a trade repository. Depending on the category of the reporting entity, the reporting will start at different stages from 12 to 21 months after the entry into force of the relevant technical standards (i.e. between end-2018 and late 2019).[28] In the US, the Office for Financial

[28] The European Securities and Markets Authority (ESMA) has published a Consultation Paper on these standards as part of its consultations on Level 2 measures under the Securities Financing Transactions Regulation (EU 2015/2365), with comments due by the end of November 2016. The final report and the draft technical standards should be submitted to the European Commission for endorsement by the first half of 2017.

Research, in cooperation with other US authorities, has launched a pilot project to fill gaps in data with a focus on bilateral repo markets[29] and securities lending markets.[30] Similarly, in Japan, the Bank of Japan and Financial Services Agency have conducted a pilot data collection on Japanese financial institutions' securities financing activities in 2015.

Since work is already underway based on the global securities financing data standards, FSB members decided to incorporate additional information on collateral re-use at a later stage. Accordingly, the FSB will start collecting collateral re-use measure and metrics set out in Section 5 of this document from January 2020. This would allow FSB members time to prepare for the actual implementation. The FSB, through its DEG, will work on the detailed operational arrangements for collecting these data.

As mentioned above, the FSB understands the need to monitor the scope as well as the methodology for measuring collateral re-use in light of evolving market practices. Therefore, it will review the scope, measure and metrics of collateral re-use five years after the launch of the global data collection with regard to collateral re-use measures, with a continued discussion with market participants as appropriate.

[29] https://financialresearch.gov/briefs/files/OFRbr-2016-01_US-Bilateral-Repo-Market-Lessons-from-Survey.pdf.

[30] https://financialresearch.gov/working-papers/files/OFRwp-2016-08_Pilot-Survey-of-Securities-Lending.pdf

Annex 1: An example of collateral re-use data aggregation

1. First tier: data collection at the national/regional level

Relevant authorities will calculate collateral re-used for each firm as set out in Table A below, regardless of whether firms in their jurisdiction report at an entity- or transaction-level.

Table A

Entity A	Collateral re-used
Collateral Type 1 – Issuer jurisdiction X	5
Collateral Type 2 – Issuer jurisdiction X	40
Collateral Type 1 – Issuer jurisdiction Y	10
Collateral Type 2 – Issuer jurisdiction Y	20
…	…
Total	500

This information should then be aggregated across firms *for each combination of collateral type - issuer jurisdiction*. The total collateral re-used for each combination should be calculated as the sum of collateral re-used by all firms in the jurisdiction, as shown in Table B.

Table B

Total by jurisdiction (of the reporting entities)	Collateral of type 1 - issuer jurisdiction X re-used
Entity A	5
Entity B	25
…	
Total	75

Generally, double-counting should not play a role here, as the defined measure only rely on information on one leg of transactions (i.e. the collateral leg).

2. Second tier: data aggregation at the global level

At the global level, collateral re-used should be calculated as the sum of collateral re-used in all jurisdictions, at the different levels of aggregation desired (Table C shows the simplest example from Section 4.1, i.e. $\mathbf{collateral}^{reuse} = \sum_{\mathbf{k}} \mathbf{collateral}_{k}^{reuse}$

Table C

Jurisdiction	Collateral re-used
A	750
B	800
…	
Total	2,000

Annex 2: Data elements to be transmitted to the FSB by national/regional authorities

The following data elements will be included in the global securities financing data standards.[31] National/regional authorities will begin reporting these data elements to the FSB from January 2020.

Table 11: Data elements related to non-cash collateral re-use

	Element	Definitions
11.1	Reference date	See data element 3.1 in Table 3 of the global securities financing data standards
11.2	Sector of the reporting entity	See data element 3.3 in Table 3
11.3	Type of collateral	See data element 4.9 in Table 4
11.4	Jurisdiction of the issuer of the security used as collateral	See data element 4.13 in Table 4
11.5	Non-cash collateral re-use	Amount computed according to the approximate measure
11.6	Number of reporting entities	Number

Table 12：Data elements related to non-cash collateral re-use concentration measure (i)

	Element	Definitions
12.1	Reference date	See Table 11
12.2	Type of collateral	See Table 11
12.3	Non-cash collateral re-use concentration measure	Herfindahl-Hirschman index (see Section 4.4)
12.4	Number of reporting entities	Number

Table 13：Data elements related to non-cash collateral re-use concentration measure (ii)

	Element	Definitions
13.1	Reference date	See Table 11
13.2	Non-cash collateral re-use concentration measure for each jurisdiction	See Table 12
13.3	Number of reporting entities	Number

[31] The tables are numbered starting from the existing tables in the global securities financing data standards. These tables should accordingly be considered as part of those standards. See http://www.fsb.org/wp-content/uploads/FSB-Standards-for-Global-Securities-Financing-Data-Collection.pdf.