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I. Collateral mobilization is due to become an increasing challenge, but many solutions are being put in place by the private and public sectors

Increasing demand for collateral due to risk aversion, regulatory requirements and monetary policy combined with constraints on its supply could lead to greater scarcity in Europe

The use of collateral has strongly risen in the EU since the financial crisis with risk aversion and concerns over counterparty and sovereign risks. There has been increased demand for secured short and long term bank funding¹, higher levels of collateral asked in funding transactions and an increase in the notional amount of collateral posted in OTC derivatives transactions since 2007. The demand for high quality assets (HQLA and HQA²) is expected to increase further in the coming years with the forthcoming implementation of regulatory measures designed to improve the resilience of banks and insurance companies (Basel III liquidity capital ratio³ and new Solvency II capital requirements) and requirements to mitigate risks from counterparty credit exposures in centrally cleared and uncleared derivatives transactions, which will all be implemented progressively between 2015 and 2019⁴. The on-going liquidity operations of the ECB are another factor driving increased secured funding in the euro area (LTRO Long Term Refinancing Operations)⁵.

Limitations being put on the re-use of collateral and stricter asset segregation rules notably in the context of EMIR⁶ as well as tighter

¹Increase in the use of repos for short term funding and of covered bonds for longer term financing and decrease in unsecured debt since 2007. The reliance on secured funding varies across banks depending on their activities and on national market practices and legislations (e.g. use of covered bonds for long-term financing higher in certain countries such as Germany, Scandinavia...).

²High Quality Liquid Assets (HQLA) include only assets that qualify in meeting the LCR requirement. Key characteristics of these assets, which comprise mainly cash and government bonds are their low credit and market risk. HQA include all assets that market participants can use to meet collateral requirements in derivative transactions.

³Introduction of the liquidity coverage ratio (LCR) under Basel III between 2015 and 2019, requiring banks to hold a sufficient amount of HQLA, to survive a significant stress scenario lasting for one month. The new definition of the LCR proposed in January 2013 should lower the expected aggregate shortfall of the EU banking sector in terms of HQLA. Introduction in parallel of the Solvency II framework with new capital requirements (e.g. debt instruments with high ratings will have a preferential regulatory treatment).

⁴EMIR mandates the central clearing of standardized derivatives (imposing stricter standards for initial margin requirements on derivatives transactions in the form of cash or HQA, partly offset by increased netting expected from central clearing and requirements for CCPs to segregate member and client collateral). The central clearing mandate is being implemented in the EU between mid-2014 and mid-2015. The list of eligible contracts is however not defined yet. The BCBS and IOSCO have recently proposed margin requirements for uncleared derivatives (with exemptions for physically settled FX forwards and swaps and a threshold of \$ 50 Mio). The requirement to collect and post initial margin is due to be phased in over a 4 year period beginning in December 2015 and the requirement to exchange variation margin should become effective on 1 December 2015.

⁵Central bank repurchases of HQA have taken significant quantities of collateral assets out of the market but the corresponding creation of central bank liabilities has replaced these assets with high quality claims on the central bank. As a result, combined with adjustments to collateral eligibility, net HQA supply is likely to have increased (Source BIS)

⁶Both CCPs and counterparties to non-centrally cleared derivatives transactions will face restrictions on the rehypothecation of collateral posted with the implementation of new rules as well as collateral segregation rules. "One-time" rehypothecation will be permitted for uncleared derivatives subject to a number of strict conditions

collateral requirements for UCITS⁷, may in parallel reduce its availability. While recognizing the role that collateral re-use plays (increasing its velocity and availability and potentially reducing transaction and liquidity costs), many regulators are concerned by the possible difficulty of tracking the ownership of re-used assets, their potential unavailability in case of counterparty default and the interconnectedness created by such practices, which may amplify market stresses. The absence at present of a legal framework in the EU covering the use and re-use of collateral and the preservation of ownership rights has often been cited in this context. The legislative proposals recently made by the EU Commission (EC) to improve the reporting and transparency of securities financing transactions (SFT), which are in line with the FSB proposals endorsed in September 2013 by the G20 on securities lending and repo transactions, should help to mitigate some of these risks. This proposal indeed notably aims to remove the uncertainty about the extent to which financial instruments have been rehypothecated, introducing requirements to report transactions to a central database and to improve transparency towards investors on the rehypothecation of financial instruments (prior consent of the providing counterparty would be required as well as information on the risks involved). It also requires rehypothecation to take place after transfer of the collateral⁸.

Another factor pointed out by many industry players is the multiplicity of collateral rules in different EU regulations (i.e. EMIR, uncleared derivatives rules, UCITS, etc...) which in some cases differ or possibly contradict each other (e.g. UCITS engaging in collateral transformation will not be able to use its proceeds to post it into a CCP and comply with EMIR). This creates operational complexity and may affect collateral liquidity and supply. There is also concern regarding the consistency and accuracy of the terminology used in different legislations (for example re-use and re-hypothecation which are used indiscriminately in many cases⁹).

The main issue to be addressed is the allocation of collateral across multiple asset pools and providing access to appropriate collateral.

The threat of a global collateral crunch previously mentioned as a possible result of these evolutions has nevertheless been dismissed by many regulators. Current estimates at the global level by the BIS indeed suggest that the combined impact of bank liquidity regulation and OTC derivatives reforms could generate an additional collateral demand of around \$ 4 Tio when at the same time the supply of collateral assets is known to have risen by

⁷The collateral requirements defined in the ESMA guidelines for ETFs and other UCITS (July 2012) determine rules regarding the type of collateral a UCITS may receive, the usage a UCITS may make of it and the way securities lending operations may be handled. These include strict limitations to the re-use or pledge of non-cash collateral received by UCITS (which should not be sold, re-invested or pledged), rules regarding collateral liquidity and the usage of cash collateral, credit quality and diversification requirements, as well as requirements to establish a haircut policy.

⁸The counterparty receiving financial instruments as collateral will be allowed to rehypothecate them only with the express consent of the providing counterparty and only after having transferred them to its own account.

⁹Rehypothecation is the term used in the recent proposal of the EU Commission on regulating the transparency and reporting of SFT. This proposal contains a definition of rehypothecation.

€ 10.8 Tio between 2007 and 2012 (outstanding amounts of AAA- and AA- rated government securities)¹⁰. In the EU the situation seems somewhat less favourable with a potential greater scarcity of good quality collateral expected in the coming years. Figures published by ESMA in February 2013 indicate that demand for collateral should increase by € 2.4 Tio in 2014¹¹ while the supply is expected to only grow by € 0.85 in the same period¹². The total supply will however continue to outsize demand by nearly a 3 to 1 factor (supply of HQA in the EU of around € 11.8 Tio as of 2012 compared to a total demand of around € 4.1 Tio).

The situation may however vary across jurisdictions with possible temporary shortages of HQA in some countries e.g. where government bonds are perceived as risky by market participants (some periphery countries) or where the level of government bonds outstanding is low (some – mainly non-EU – countries running a budget surplus). In addition the collateral market is fragmented across multiple asset pools (mainly safekept by CSDs / ICSDs and custodian banks) with collateral often managed in silos, which may hinder access to assets, reduce liquidity and increase potential for mismatches. Fragmentation could further increase with an expansion of market infrastructures (following the implementation of the EMIR and CSDR regulations) and stricter asset segregation rules (e.g. within CCPs), some stress, potentially augmenting operational complexity and costs.

The main issue to be addressed is therefore not the overall supply of collateral but its allocation across multiple asset pools and providing access to appropriate collateral in order to comply with regulatory requirements and secure transactions. Specific concern is also raised by buy-side players who do not always have the ability to raise the collateral required in a short period of time (e.g. due to insufficient cash positions¹³) or who might be impacted by additional requirements imposed by shadow banking rules on repos needed to secure cash loans.

Solutions are being put in place by the private and public sectors to optimize the use of the existing collateral supply

Actions have been taken within the Eurosystem since 2008 to relax eligibility criteria and to extend eligible collateral in bank refinancing operations, which has helped to increase the

availability of collateral in the Eurozone¹⁴. Other measures put in place by the ECB will facilitate the cross-border use of collateral, such as the suppression of repatriation requirements as of May 2014¹⁵, the integration within the Eurosystem's collateral framework of cross-border triparty collateral management services¹⁶ and the widening of the collateral framework to accept marketable assets denominated in foreign currencies. The implementation of TARGET2-Securities (T2S) by 2015-16 will also facilitate the delivery against payment in central bank money of collateral transactions within the EU on a domestic and cross-border basis¹⁷. Moreover the Single Supervisory Mechanism (SSM) should further facilitate the cross-border integration of EU securities markets.

Several private sector solutions also contribute to avoiding a shortage in collateral assets. These include services such as tri-party collateral management, entity-level and market-level collateral optimization and collateral transformation¹⁸. Partnerships are also being developed by EU market infrastructures with providers outside the EU in order to facilitate a more efficient mobilization of collateral at the global level. Concerns have however been raised by some regulators regarding the risks that an excessive use of collateral lending or transformation services may create: increased inter-connectedness leading to higher risks of contagion, higher maturity and funding risks as such transactions may have a shorter maturity than the transactions they are used for and reduced transparency if such transactions are not reported. The legislative proposals recently made by the EU Commission to improve the reporting and transparency of securities financing transactions (SFT) should help to mitigate such risks by providing supervisors with the information necessary to facilitate the monitoring of SFT and to develop appropriate policy tools if needed: introducing requirements to report transactions to a central database and to improve transparency towards investors on the practices of

¹⁰The implementation of the LCR was evaluated to lead to a shortfall of HQLA of \$ 2.3 Tio. OTC derivatives reforms have been estimated to further increase the demand for HQA by \$ 0.7 Tio for non-centrally cleared derivatives (total initial margin required to collateralize exposures) and by \$ 0.1-0.7 Tio for centrally cleared derivatives. CCFS paper N°49 – Asset encumbrance, financial reform and the demand for collateral assets – May 2013. These amounts however remain uncertain. The additional demand for HQLA related to the introduction of the LCR is difficult to evaluate because it is believed that banks will adjust their behavior to limit their increased need for such assets e.g. replacing short term with long term funding sources in part. In the insurance sector the portfolios of safe assets are expected to increase quite significantly. Regarding OTC derivatives there have been different evaluations of the increase in collateral demand ranging from several hundred billion to several trillions.

¹¹This increase in demand would be due according to ESMA to the repo market (+ € 1 Tio), the LCR (+ € 1.2 Tio) and OTC and exchange traded derivatives (+ € 0.24 Tio)

¹²The Dutch Central Bank in 2012 also indicated that demand for HQLA is expected to grow by € 2 Tio in the coming years when at the same time the supply may only grow by € 1.5 Tio.

¹³Cash is needed to cover the variation margins required in CCPs. The fact that much of buy-side assets are held in custodial networks at present is another issue cited.

¹⁴Extension in 2007 of the “single list” of eligible assets (common to all Eurosystem credit operations) to non marketable assets such as credit claims and non marketable retail mortgage-backed debt instruments (RMBS) and credit quality threshold enlarged to BBB- minimum credit requirements except for ABS (for which there is a AAA rating level required at issuance and A rating level over the lifetime of the transaction)

¹⁵Abolishing the repatriation requirement will allow for example a German bank wanting to use as collateral a French government bond for refinancing with the Bundesbank to send it directly from Euroclear France to the Bundesbank without going through Clearstream

¹⁶The integration of third-party collateral management services (provided by independent third party agents who manage collateral transactions on behalf of their clients) into the Correspondent Central Banking Model (CCBM) of the ECB will make such services available to all euro area counterparties on a cross-border basis (and not only to some of them) regardless of the location of the counterparty and of the tri-party provider. This will allow for a considerably more efficient delivery of collateral to the Eurosystem

¹⁷T2S will allow a more efficient cross-border settlement in the EU, thus supporting easier mobilization of collateral from where it is generated to where it is needed. Given the expected wide range of T2S participants, the delivery of collateral to Eurosystem NCBs and CCPs will become swifter and more efficient. (Source EA Zautzik, Bancad'Italia, Eurofi newsletter)

¹⁸Tri-party collateral management services may notably help to move collateral more efficiently. Collateral optimization services use platforms and processes to optimize the sourcing, allocation, transfer and monitoring of collateral. Collateral transformation involves custodians or institutional investors providing HQA from their balance sheets through securities-lending type transactions to clients in exchange for lower quality collateral plus a fee.

investment funds engaged in SFTs. These issues are being addressed in parallel by the FSB at international level in the context of the on-going shadow banking initiative.

Collateral optimization might also lead to a decrease in the overall quality of collateral assets used in the financial system, some believe, which will require the use of appropriate risk management frameworks (covering in particular haircuts and concentration limits).

Additional solutions are envisaged both by the private and the public sectors to increase the stock and liquidity of available collateral

One of the solutions envisaged in Europe for increasing the supply of collateral is to develop the pool of securitized credit claims (which are under-used as a source of collateral at present). In comparison the US market benefits from a large pool of collateral created by the securitization of a significant part of the mortgage loans originated by US banks many of which benefit from federal guarantees¹⁹. Regulators are favourable to the development of such products in the EU, provided that they do not lead to more complexity and opacity or increase the heterogeneity of claims. Initiatives are currently being conducted in certain jurisdictions to go towards such an objective for example with the refinancing vehicle set up in France issuing bonds guaranteed by credit claims²⁰. Measures have also been taken by the Eurosystem to alleviate the costs of using credit claims as collateral²¹.

CCP practices are another area where evolutions could be envisaged. Possible actions include cross-margining (i.e. the sharing of pledged collateral across different cleared assets) and expanding the range of eligible collateral (e.g. accepting some high quality corporate bonds as is the case in the US where such actions are negotiated between the authorities and the industry). But these changes will probably remain limited given the need to preserve market integrity and investor protection and the current fragmentation of the EU market.

Further standardizing collateral requirements across the EU within given usage classes (e.g. collateral used in the context of CCPs or for a given currency...) has also been proposed in order to promote liquidity within the relevant asset markets. Sufficient diversification of collateral should however be preserved at the overall level.

¹⁹This process involves the Government Sponsored Enterprises (GSEs) such as Freddy Mac and Fannie Mae

²⁰This vehicle provides a common issuance structure for the participating banks and standard transparency and risk management requirements. Requirements include a standard legal documentation and common risk control measures regarding e.g. the eligible credit claims, a ban on tranching and the segregation of risks among participating banks.

²¹Measures include the implementation of relatively automated procedures for the use of credit claims as collateral by some euro area NCBs and the introduction of a framework for the cross-border use of credit claims by the Eurosystem (see Occasional paper of the ECB on "The use of credit claims as collateral for Eurosystem credit operations" (June 2013))

The creation of an EU securities law (SLL) defining more broadly the legal framework applying to securities and securities transactions in the EU has also been considered by the EU Commission, although no proposal has been tabled for the moment. Such a framework could notably lead to the provision of a common legal framework for the use and transmission of collateral and address some pending issues related to asset ownership and traceability which appear in particular when assets are lent, re-used / re-hypothecated²² or used in collateral transformation transactions. The added benefits such a framework could bring in the context of collateral transactions in addition to the proposals made by the EC regarding SFT mentioned above however need to be further assessed²³.

II. The increasing use of collateral has important implications for the functioning and structure of the financial system that are currently being assessed

The BIS and the ESRB have raised concerns about the possible impacts that an increasing recourse to collateral may have on the functioning and stability of the overall financial system and about the current lack of transparency on the extent of collateralization²⁴.

Increased collateralization raises asset encumbrance²⁵ which may have negative effects if it becomes excessive including: increasing the risks of unsecured creditors (bondholders, depositors) in the event of a default with a reduced availability of assets and augmenting liquidity risks for banks (if there are insufficient unencumbered assets that can be sold or repoed out). Asset

²²Many players indeed stress that the legal context of concepts such as re-use or re-hypothecation should be better defined and that more clarity should be brought regarding the chain of intermediation in order to avoid collateral being used without the consent of the owner.

²³An EU SLL could help to develop a more horizontal approach to collateral transactions in EU legislation. Beyond this an EU SLL would have a broader scope since it would apply to all securities transactions. It would therefore probably involve clarifying the book-entry systems that can be used in the EU and the applicable laws, which is quite challenging. There are two main systems underlying the ones used at present in Europe: the direct holding system used in Continental Europe and the trust or indirect holding system (the latter is also used in the US and Canada). Under the system of direct holding of securities, investors are given ownership rights over securities. Under the trust or indirect holding system, intermediary entities to which the securities are issued to in the first place hold the securities on behalf of investors but also own the beneficial rights over those securities. Investors in this case own an entitlement or interest in these securities. Some industry players have also suggested that collateral re-use could be limited to assets posted through a transfer of title (as opposed to a transfer of security interest or a pledge) in order to facilitate the tracking of ownership. In this case the collateral receiver becomes the new owner of the collateral and there would be no difficult to track ownership.

²⁴See notably the BIS « Asset encumbrance, financial reform and the demand for collateral assets » - Report from the Committee on the Global Financial System - May 2013. Banque de France Financial Stability Review - April 2013 - contribution on "Collateral scarcity and asset encumbrance: implications for the European financial system" by the Nederlandsche Bank Financial Stability Department

²⁵According to the EBA, asset encumbrance is the result of an institution creating a legally binding preferential claim on its assets or on financial items it had received as collateral under other transactions in favour of a selected group of its creditors. Asset encumbrance is thus characterized by the loss of a previously enjoyed level of control over assets or collateral received. The current median level of encumbrance in a sample of EU banks is around 25% according to a study by the ESRB (Dec 2012). Covered bonds affect asset encumbrance as the assets remain on the bank's balance sheet. RMBS products affect encumbrance only to the extent that the issuing bank provides implicit or explicit guarantees or retains the RMBS on its balance sheet. Repos may be offset by reverse repos reducing net asset encumbrance.

encumbrance may also gradually eliminate unsecured financing making it too costly and pushing encumbrance even further, which may reinforce liquidity problems in particular²⁶ and reduce incentives to monitor banks' risks.

Higher use of collateral may also favour pro-cyclicality. During economic downturns the effects of the economic cycle on bank leverage and credit supply can be amplified when the share of collateralized financial transactions is greater. For example, falling collateral asset values in the covered bond pool mean that the pool has to be replenished or that assets need to be replaced to maintain the desired credit ratings of the secured debt outstanding. Similarly higher haircuts and falling asset values require more assets to be pledged to raise a given level of repo funding or to meet initial margin requirements on derivatives exposures. Such increased demand for collateral assets can then lead to significant asset sales and to institutional investors pulling back from securities lending and similar activities in times of financial stress.

Actions are under way in the EU to improve the data available for monitoring asset encumbrance and collateral positions.

In the context of the implementation of the Capital Requirements Regulation (CRR) which requires the financial institutions concerned to report to the competent authorities the level of their repo agreements, securities lending and all forms of asset encumbrance, the EBA is currently developing reporting templates²⁷ that should be implemented in all banks by the end of 2014. This will provide a harmonized measure of asset encumbrance and a comparison of the reliance on secured funding across institutions and will allow supervisors to assess the ability of institutions to handle funding stress. Such data should help creditors to assess the actual risks they face and improve the pricing of funding as well as facilitate institution-level and macro-prudential supervision.

In addition, repositories collecting data on securities lending and repo transactions (such as those mandated in the recent proposal of the EU Commission aiming to enhance the transparency of SFT transactions²⁸) should help supervisors to better evaluate and monitor such exposures, detect potential risks building up at institution, asset class or market level and better anticipate changes in market behaviour. In the US efforts are being made by the industry to share the data available on tri-party repo for example. But this is difficult to reproduce in the EU where only 15% of the collateral market is in tri-party (the rest being handled bilaterally) as opposed to the US where most of tri-party collateral management services are handled by two main institutions.

²⁶Such problems may however be partly mitigated by the LCR

²⁷Large institutions with a balance sheet value equal or more than 30 Bio € will have to furnish also information on the characteristics of encumbered and unencumbered assets in a detailed breakdown of balance sheet items and the asset encumbrance information under hypothetical stressed scenarios (i.e. contingent asset encumbrance)

²⁸The ECB has also been supporting the project to build a trade repository for repo transactions which are of particular importance for EU central banks for the implementation of monetary policy and for financial stability considerations, since the provision of central bank liquidity to the banking sector is based in the euro area on repo operations.

Putting backstops on asset encumbrance or on covered bond issuance has also been considered. The LCR however already involves a buffer of unencumbered assets to be held as insurance against liquidity shocks.