



COLLATERAL IS THE NEW CASH: THE SYSTEMIC RISKS OF INHIBITING COLLATERAL FLUIDITY

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Executive Summary

- Collateral is becoming increasingly important in the post-crisis world, driven by both a need for more secured funding as well as regulatory requirements to reduce credit risk. In many ways, collateral has become the new cash, underpinning the smooth functioning of funding and capital markets, and, in turn, providing the basis for economic growth.
- The expected increase in demand for collateral may lead to demand-supply imbalances. However, these may prove to be short-term, localized, and in time corrected by increased prices for high quality assets as well as other exogenous factors.
- What is more important is collateral fluidity, which allows collateral to move around the system to meet varying demand conditions across the financial markets landscape.
- Collateral fluidity requires both robust and efficient settlements infrastructure (the 'plumbing'), as well as bank funding desks that are able to source, price, manage, and mobilize collateral (the 'pump').
- The new market environment requires that banks, investors, and market users become adept at managing their liquidity, collateral, and risk. Collateral optimization will mean that assets are better sourced, priced, and allocated.
- There exist a number of market and regulatory initiatives that may impact collateral fluidity, either positively or negatively. Some relate directly to the ability of bank funding desks to function effectively, while others affect the providers and takers of collateral.
- The systemic risks arising out of regulation that inhibit collateral fluidity would have broad and severe repercussions, not only for the financial markets, but throughout the real economy.
- Sound regulation is essential for the efficient and stable functioning of global funding and capital markets that support our economies. These markets are already significantly safer than before the financial crisis. As collateral becomes an increasingly important feature of the new market and regulatory landscapes, so regulation should avoid inhibiting, and ideally seek to enhance, collateral fluidity.

COLLATERAL IS THE NEW CASH: THE SYSTEMIC RISKS OF INHIBITING COLLATERAL FLUIDITY

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1. Introduction: collateral is the new cash

Efficient and well functioning financial markets are essential for a stable and productive economy, facilitating investment, capital deployment, and diversification of risk. The use of collateral in financial transactions as a means of protection against counterparty risk is a long established practice. However, while repo markets have existed in one form or another for as long as there have been markets, it is really only since the 1990s, and driven by Basel I, that repo markets have developed across Europe as both a safer means of lending, as well as financing rapidly developing securities and derivatives markets¹. Collateral soon became an intrinsic feature of the modern financial system, whether securitizing loans, collateralizing repo transactions (including central bank money market operations), or margining OTC derivatives trades. This in turn has helped to create deep, liquid² domestic and international money and capital markets, bringing together a vast range of sovereign and corporate borrowers and capital raisers with a diverse array of investors, facilitating investment to support real economic activity, creating growth, jobs, and prosperity.

The financial crisis, and subsequent changes in how financial markets and institutions are regulated, have made the use of and need for collateral even more essential for the smooth and secure functioning of global capital markets. Increasing concerns about counterparty risk have meant that secured lending and borrowing have become the normal means by which borrowers access both short- and long-term funding, replacing the largely illiquid unsecured money markets. Basel III, and the need for better capitalization and liquidity of financial institutions, has made it more important for banks to hold a greater stock of high quality assets on their balances sheets. Meanwhile, regulatory initiatives such as Dodd Frank and EMIR ensure that global derivatives trading is underpinned by a bigger pool of margin, much of which will be in the form of collateral.

For both the users and facilitators of capital markets, collateral management has become inseparable from liquidity management and risk management. In the modern financial and economic context, these are essentially the same thing (see Box 1). This paper is a discussion of the importance of and risks to the use and mobilization of collateral, that is primarily through the repo and short-term funding markets, and which supports the effective functioning of

¹ See: [BIS, 1999, 'Implications of repo markets for central banks', Report of a Working Group established by the Committee on the Global Financial System of the central banks of the Group of Ten countries, Bank of International Settlements, March 1999](#)

² For the purpose of this paper, a liquid market is defined as one in which prices are continuously available, in reasonable size, and in which multiple participants can transact in their desired size over acceptably short timeframes without material adverse price impact.

global capital markets. Furthermore, the paper highlights the significance of this to the real economy, and the implications of inhibiting the flow of collateral.

Much has been written on predicted demand-supply imbalances for collateral in the wake of the new regulatory environment³. While the potential consequences of this should not be overlooked, this paper is not so much concerned with the aggregate demand and supply of collateral, but rather the ability for collateral to move freely through the system; in effect, *collateral fluidity*. After a brief discussion of demand and supply issues, the paper focuses attention on the infrastructure and dynamics that support the flow of collateral, the extent to which market participants, facilitators, and regulators enhance or inhibit this fluidity, and the potential systemic risks of this ceasing to function. It concludes that sound regulation and efficient collateral fluidity must be mutually supportive objectives.

Box 1: Definition of Liquidity and Collateral Management

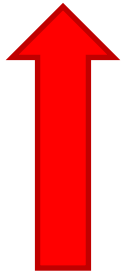
Collateral and liquidity management can be defined as the optimal management of credit, collateral, capital and all related execution, pricing, operational, documentation, and risk management of a portfolio *across all products, all business units, and all locations*.

³ For instance, see [Fender I and Lewrick U, 2013, 'Mind the gap? Sources and implications of supply-demand imbalances in collateral asset markets', BIS Quarterly Report, September 2013](#)

2. Collateral demand, supply, and equilibrium

Collateral Demand

The increased demand for collateral stems from three main sources:



- The continued move from unsecured to secured funding driven by new risk evaluation models, capital treatment, and deleveraging
- Basel III (CRR/CRD IV) liquidity requirements
- Margin requirements for cleared and un-cleared OTC derivatives trades

Demand collateral

While it is safe to conclude that the demand for collateral (particularly HQLA and HQA – see Box 2) will increase in the coming years, perhaps quite significantly, it is difficult to estimate the extent of that increase. A number of studies have attempted to quantify the expected change in aggregate demand, mostly that arising out of new margin requirements for OTC derivatives trades. Estimates vary depending on underlying assumptions related to changes in the size of this \$650 trillion market, as well as variables such as the size and scope of CCP and bilateral margin requirements, the number of CCPs, the scope for netting, and the ability to re-use pledged margin collateral. These estimates range from \$100 billion to \$4 trillion, with the higher end of the range also taking into consideration the effect on demand from new liquidity requirements. These estimates are summarized in Figure 1.

Box 2: Definitions of collateral

What constitutes as collateral can be broad and varied, and, in theory, could be any cash-funded financial (or even non-financial) security that is liquid, easily priced, and where title can be transferred. This could include government, agency, covered and asset-backed bonds, bills, equities, bank loans, traded funds, and even commodities, such as gold. What differentiates collateral, however, is the divide between ‘usable’ and ‘unusable’ collateral, where usable collateral (usually investment grade) is more readily acceptable by collateral takers.

Usable collateral can further be divided into High Quality Liquid Assets (HQLA), which fall under the Level 1 and Level 2 definitions of the Basel III Liquidity Coverage Ratio (LCR), and the broader High Quality Assets (HQA), which is effectively defined by the market acceptability of collateral takers.

The broadest definition of usable collateral (Collateral Assets, or CA), however, could be extended to cover any security that can be pledged in a collateralized funding transaction, or, alternatively, repo-ed in a securities financing transaction (SFT).

Figure 1: Estimates of incremental collateral requirements for OTC centralized clearing⁴

Organization	Incremental Collateral Required	High-Level Description of the Basis for the Incremental Collateral Requirement Estimate
IMF ⁵	\$100bn-\$200bn	The shift to CCPs will elevate collateral demand for Initial Margin (IM) and guaranteed funds
Bank of England ⁶	\$130bn-\$450bn	The IM required for IRS/CDS under normal market conditions, assuming no change in the gross notional volumes and 80% of trades being subject to central clearing
BIS ⁷	\$720bn	IM required for dealers and non-dealers where all clearing for IRS/CDS takes place at only one CCP for each product (to reduce negative impact on netting).
Oliver Wyman / Morgan Stanley ⁸	\$750bn by 2015 \$1.4 trillion by 2018	A combination of increased requirements in IM in the near term for centrally cleared transactions and independent amount (IA) in the longer term for non-cleared transactions The increase will also be driven by the inability of firms to net across regions/CCPs
US Treasury ⁹	\$800bn-\$2tn	Quantum of new IM and stringent eligible collateral requirements will greatly increase the demand for high-quality collateral
CGFS ¹⁰	\$4tn	Sum of estimates for increased requirements for liquidity regulations; IM for non-centrally cleared derivatives; and IM for centrally cleared derivatives

Supply

The aggregate supply of collateral is largely driven by the financing needs of governments, both financial and non-financial institutions, and corporations. This can depend on a number of factors that are largely cyclical, such as increasing or decreasing government budget deficits,

⁴ Sourced and adapted from: Barclays, 2014, 'Much Ado about Collateral: Recent Changes in the Regulatory landscape for OTC Derivatives and the Potential Impact on Collateral', Prime Services, Capital Solutions, February 2014

⁵ [IMF \(International Monetary Fund\), 'Safe Assets: Financial System Cornerstone', April 2012](#)

⁶ [Bank of England, 'OTC derivatives reform and collateral demand impact', October 2012](#)

⁷ [BIS \(Bank of International Settlements\) Working Papers, 'Collateral requirements for mandatory central clearing of over-the-counter derivatives', March 2012](#)

⁸ [Oliver Wyman / Morgan Stanley, 'Wholesale & Investment Banking Outlook, Global Banking Fractures: The Implications', April 2013](#)

⁹ [Office of Debt Management Fiscal Year 2013 Q2 Report, 'Availability of High-Quality Collateral'](#)

¹⁰ [Committee on the Global Financial System, 2013, 'Asset encumbrance, financial reform and the demand for collateral assets', CGFS Papers, No.49](#)

private sector expansion or contraction, and investor appetite for lower-credit sovereign or corporate debt.

Unconventional monetary policy, most notably quantitative easing, can also affect the outstanding supply of collateral, as can purchases of HQA by sovereign banks managing foreign exchange reserves.

The CGFS estimates that the total increase in AAA/AA government securities between 2007 and 2011 was \$7.7 trillion. When short-term government securities, corporate bonds rated A or better, and US securitized bonds are included, the net stock of HQA is estimated to have increased by \$11.3 trillion. In this respect, one could confidently assume that there is little to worry about in terms of demand-supply imbalances.

However, there is a difference between aggregate supply and effective supply. Much of this collateral will not necessarily be in the system, and may effectively be silo-ed with investors who are not willing, or able, to lend. Different eligibility criteria across financial centres and jurisdictions could also lead to localized shortages. To some extent, we could expect such demand-supply imbalances to be short-term. In the medium to longer term these dislocations should be corrected by a combination of price adjustment (with repo rates for HQA becoming more expensive relative to other forms of collateral), as well as through other exogenous supply factors. This could include incentives for collateral-takers to widen their eligibility criteria (as we have already seen with the ECB's Long Term Repo Operations), or the pooling of balance sheet assets to create eligible securitized assets (such as ABS or MBS).



- Government and non-financial corporate issuance
- Securitization of assets
- Broader eligibility of HQA

Effective Supply *collateral*



- Quantitative easing
- Foreign exchange reserve management

Equilibrium

It is extremely difficult to predict with accuracy both the increased aggregate demand for collateral and changes in the effective supply that will be driven by the combination of new regulation, market dynamics, and the economic cycle. Furthermore, these are dynamic variables, rather than predictable constants. In this respect, it is not so much quantitative demand-supply imbalances that should be the concern. Rather, it is the ability of the effective supply of collateral to move through the system to meet the demand. Thus, the critical factor is the *fluidity* of collateral.

This relationship can be represented through an adaptation of the equation proposed by Manmohan Singh¹¹ to illustrate the equilibrium of demand and supply of collateral in a functioning financial system:

$$\text{Demand}_{\text{collateral}} \equiv \text{Effective Supply}_{\text{collateral}} \times \text{Collateral Fluidity}^{12}$$

This simple dynamic shows that as demand for collateral increases, relative to the effective supply of collateral, so its fluidity (i.e. its ability to be effectively used or reused) must also increase. It also suggests that collateral fluidity deserves significant attention and concern when assessing potential risks to the effective functioning of the financial system: not least in times of market stress, when demand-supply imbalances are likely to be accentuated.

¹¹ [Singh M, 2013, 'Collateral and Monetary Policy', IMF Working Paper, WP/13/186](#)

¹² Singh uses 're-use rate' or 'velocity' in his equation. Here we feel that the much broader notion of 'collateral fluidity' illustrates the concept better.

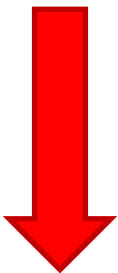
3. Collateral fluidity

When thinking of collateral fluidity, there are two key considerations. Firstly, the market infrastructure needs to be in place to ensure the efficient and uninhibited flow of collateral through the system and between various market participants, depositaries, settlement systems, and jurisdictions. We can think of this as the ‘plumbing’. Secondly, efficient collateral fluidity requires a functioning market mechanism to mobilize collateral through this system. This is the ‘pump’.

A. The Plumbing

For collateral deployed in various financial transactions to move through the system smoothly and efficiently requires an integrated and cohesive infrastructure for settling trades. This includes harmonizing pre- and post-settlement processing, trade reporting, legal and regulatory frameworks, costs and tariffs, and the efficient settlement of both securities and liquidity. Unfortunately, this infrastructure remains very underdeveloped in the Eurozone, which, despite fifteen years of monetary union, has never established a unified financial market. As the European Union expands, so does the number of distinct Eurozone bond and securities markets and disconnected CSDs. Essentially, the plumbing that is supposed to support the pan-European financial markets, and the efficient flow of liquidity and collateral, remains largely fragmented and rooted in pre-Euro legacy infrastructures. Many of the barriers to efficient cross-border settlement identified by the Giovannini Report in 2001¹³ remain unaddressed. Accordingly, the plumbing supporting collateral fluidity in Europe is a mish-mash of bespoke designed and poorly connected pipes and fittings.

The main infrastructure issues impeding the efficient flow of collateral in Europe have been identified as¹⁴:



- Limited operating hours of CSD settlement links in central bank money (CeBM)
- Lack of flexibility in the cross-border settlement arrangements in commercial bank money (CoBM)
- Ineffective triparty settlement interoperability
- Lack of cross-border standardization for end-of-day treasury adjustments in CeBM

Fluidity Plumbing

¹³ [The Giovannini Group, 2001, ‘Cross-Border Clearing and Settlement Arrangements in the European Union’, Brussels, November 2001](#)

¹⁴ ECB, 2014, ‘Euro Repo Market: Improvements for Collateral and Liquidity Management’ (forthcoming)

There are in place a number of regulatory and market driven initiatives to meet the various challenges that currently inhibit the efficient movement of collateral. Key amongst these are:



- Target2-Securities (T2S): standardizing cross-border settlement in terms of cost, technical processing, and efficiency, and creating a centralized delivery-versus-payment settlement system for the pan-European market
- EU Central Securities Depository Regulation (CSDR): harmonizing settlement periods, trade recording, and conduct of business and prudential requirements across all CSDs, CCPs, and trading venues
- Tri-party settlement interoperability between ICSDs/CSDs

Fluidity Plumbing

However, it is essential that these initiatives are well designed, efficiently implemented, and take into consideration the potential impact of implementation, particularly in light of established standards and practices. T2S, for instance, did not originally have a build for repos, while the roadmap for migration to T+2 settlement did not account for the fact that standard repo settlement (for good reason) is one day less than for the underlying bond markets.

B. The Pump

While a significant amount of concern has been dedicated to the potential scarcity of collateral, and a great deal of focus on the importance of effective infrastructure required to mobilize collateral, it is often forgotten that collateral does not move by itself. The efficient sourcing, pricing, and mobilization of collateral is a market function, and primarily takes place in the funding markets, with bank funding desks acting as the primary intermediaries between various collateral users and takers. Essentially, in the world of collateral, the bank funding desk is the 'pump'.

Traditionally, the bank funding function has been silo-ed into distinct business units: the repo desk, the stock loan or equity finance desks, treasury, prime brokerage, etc. Largely this remains the case, but as we move into a world where collateral is the new cash, and where collateral and liquidity management are inseparable, we are seeing the closer coordination, and even integration, of these various funding functions. To think about the repo market in isolation no longer makes sense, and these various utilities can be grouped together as the *bank funding desk* (see Figure 2).

Figure 2: The integrated bank funding function



Bank funding desks can serve a number of crucial functions:



Fluidity Pump

- Funding the trading positions (longs and shorts) of the bank, which supports the market making function (and so liquidity) in bonds, equities, and related securities and derivatives
- Interfacing with the central bank in money market operations as part of bank liquidity management
- Managing the bank's liquidity buffers and stock of high quality liquid assets
- Collateral transformation: the substitution via repo of unusable collateral for sourced usable collateral
- Providing liquidity and pricing to the bank's diverse client base for their various short-term funding and investment needs

It is these various functions of bank funding desks that ensure a liquid and efficient short term collateralized funding market. Without these activities, collateral would not move through the system, and institutions and corporate investors would be forced to rely on unsecured bank loans and deposits. Raising capital for sovereigns and corporations would become more difficult and expensive, as secondary market liquidity would be severely impaired and the risk to investors from owning financial securities would increase, creating potential cliff-effect risks. The conducting and control of central bank monetary policy would also become more difficult in the absence of active and functioning bank funding desks, given that repo is the primary policy tool. Furthermore, active bank funding desks ensure that the bulk of repo and SFT activity remains in a highly regulated and increasingly transparent trading environment, rather than becoming overly concentrated in the shadow banking sector.

Underpinning these various functions is the market-making service that funding desks provide to a range of clients and market participants (see Figure 4), and is managed through the 'matched-book' (see Box 3).

Box 3: The funding 'Matched-Book'

Often overlooked is the market making service that funding desks provide and the value this brings with respect to collateral fluidity. Were funding desks simply standing between counterparty-A and counterparty-B, and taking a spread, their role and value could be questionable. But this is rarely the case. Funding desks are usually required to provide pricing to a whole range of clients, with different funding and investment requirements, in a raft of different securities and credits, whenever they require it. Accordingly, their trading books (somewhat confusingly known as the 'matched-book'¹⁵) are invariably a complex portfolio of assorted repos and reverses (or loans and borrows), in a multitude of securities, covering a whole range of periods, and imbedded with interest-rate and credit risk, which the repo or stock-loan trader must carefully manage. It is this liquidity and pricing provided by funding desks that give them their value, and which ensures a functioning and liquid market for collateral, as well as enhancing liquidity in the broader capital markets.

¹⁵ One possible explanation for this extremely misleading name might be the fact that to 'balance their book', the repo (or stock-loan) trader needs to ensure that every long position is funded, while every short position is borrowed, at least for that day. So on an 'overnight' basis, one could argue that the funding book is indeed 'matched'.

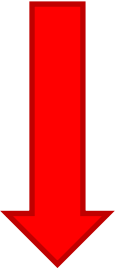
Figure 4: The market-making service of the bank funding desk



4. Factors that may enhance or inhibit the fluidity of collateral

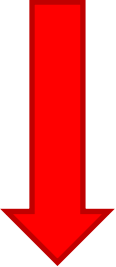
There are a number of market and regulatory initiatives, or proposals, that may impact the fluidity of collateral, either positively or negatively. Some relate directly to the ability of bank funding desks to function effectively, while others affect the providers and takers of collateral. These could be the by-product (or even the intended outcome) of regulatory initiatives, or they may suggest that the market itself needs to better adapt to the changing landscape. However, it is important to consider these impacts when assessing the potential for new systemic risks.

- **Basel III Leverage Ratio**



The new Basel III capital adequacy requirements are making the balance sheets of banks more expensive. Accordingly, banks are having to rethink their business models and priorities. Low-margin, capital-intensive businesses, such as repo, are becoming less attractive. The provisions for netting of securities financing trades (SFTs) in the Leverage Ratio mean that it will not overly impact activity where there is two-way flow in SFTs between counterparties (such as with CCPs)¹⁶. However, it will still prove to be the primary constraint on one-way client flow business (i.e. where the client is a sole lender of bonds or a sole investor of liquidity). Furthermore, its lack of risk-weighting means that the ratio is more likely to restrict low-risk activity, as opposed to SFTs in riskier assets.

- **Basel III Net Stable Funding Ratio**



While match-funded SFTs between banks are excluded from the calculations for the NSFR, it seems anomalous that similar match-funded SFTs between banks and non-bank financial entities are not. Furthermore, the weighting applied in this instance does not take account of the quality of the underlying asset (unlike the Liquidity Coverage Ratio). While the justification may be that inter-bank SFT funding is more stable than funding provided to non-bank entities, this nonetheless creates an asymmetry that would disincentivize the lending of securities by non-bank entities, not least in low risk securities. This would undermine the secondary market-making function of banks. Furthermore, it would penalize the placement of long cash balances with these entities on a secured basis.

¹⁶ While Basel III requires that banks be subjected to a Leverage Ratio of a 3% Tier 1 capital charge against all non-risk weighted assets (enforceable from 2018), in the US, this has been taken further with a proposal that the most systemically significant bank holding companies (BHCs) adhere to an even higher Supplementary Leverage Ratio (SLR). A 5% threshold is proposed at the BHC level, and 6% for any insured depository institution (IDI) subsidiary of these BHCs.



- **Mandatory haircuts for SFTs**

While applying haircuts (effectively a form of initial margin for SFTs) to repurchase agreements is often prudent, and a common market practice, the use and level of haircuts has traditionally been driven by market considerations, and based on credit assessments of both the counterparty and the underlying collateral. It is questionable whether prescribing mandatory minimum haircuts for repo transactions reduces procyclicality, and a number of studies suggest that the case for mandatory haircuts may be flawed¹⁷. While current FSB proposals do not recommend a numerical floor for high quality government securities, the proposed methodology could still result in haircuts being applied to these assets, which would increase the cost and reduce liquidity. Applying haircuts to agency lenders would also act as an economic disincentive, while enforcing haircuts in the inter-bank repo market would have little or no impact (given that banks both lend and borrow securities with each other).



- **Mandatory clearing for SFTs**

The funding markets have fully embraced the emergence of CCPs for the clearance of SFTs. However, while CCPs serve a valuable function in centralizing risk, they are not a panacea for eliminating it. Accordingly, CCPs must carefully manage their risk, which means increasing costs of clearing certain collateral in response to credit or concentration concerns, as well as refusing to clear particularly low grade or illiquid securities. In these situations, it is important that counterparties have the option to trade bilaterally, thus disseminating risk away from the CCP, as well as providing the ability to optimize their own bilateral risk exposures.



- **Mandatory buy-ins and penalties**

While increasing penalties, or prescribing mandatory buy-ins, for fails in bond transactions may seem to be a liquidity enhancer, it runs the risk of producing counterintuitive outcomes. Already, there are very low levels of fails in the European bond markets, a fact that can be attributed to liquid repo markets, with most fails tending to occur in more illiquid securities. Making fails more punitive may actually prove to be a deterrent to counterparties to lend

¹⁷ For example see: [European Parliament, 2013, 'Shadow Banking –Minimum Haircuts on Collateral', Economic & Monetary Affairs Committee, IP/A/ECON/NT/2012-29, July 2013](#)

securities, including the most liquid bonds, since the potential costs of, say, a settlement error, could outweigh any benefit from the trade. This would actually increase the likelihood of fails. Instead, improving repo liquidity in illiquid bonds could be a more productive measure rather than discouraging lending, particularly as this would help support liquidity in the secondary markets, something that mandatory buy-ins are likely to undermine. Even if SFTs were exempt from penalties or mandatory buy-ins, this would still miss the fact that many SFTs are linked to underlying trades, which means that any 'preferential' treatment would be negated by the inherent interconnectedness of SFTs and the underlying securities markets.

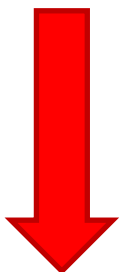
There are already well established rules and practices governing secondary market and SFT transactions that provide for procedures to be followed in the event of a fail. These allow for flexibility on the part of the failed-to counterparty, and help assist an orderly and liquid market. Establishing consistency between the procedures for bond buy-ins and SFT 'mini close-outs', would perhaps do more to enhance liquidity.

Improving connectivity and interoperability between various settlement systems would also go a long way to reducing the risk of fails.

- **Asset encumbrance measures**

The identification of potential systemic risks through collateral demand-supply imbalances requires the monitoring of what collateral is usable or reusable, and what is effectively encumbered, not least in situations of default, bankruptcy, or resolution. It is possible that limiting the use of unencumbered assets in some instances could be desirable. It is therefore important to distinguish between SFTs that fully encumber assets, those that cause only partial encumbrance, and those that do not encumber assets at all.

Essentially, securities that are pledged (such as to provide margin against derivatives trades) are encumbered, since legal title remains with the pledger. Securities repo-ed under a qualifying legal agreement, such as the General Master Repo Agreement (GMRA), which is widely used in Europe, have a different legal treatment and cannot be compared with pledged collateral. Under a GMRA repo, full legal title is passed from the repo party to the reverse repo party. In the event of default, unsecured claims on the repo party are not on the repo-ed assets, but on the cash received in the transaction (or equivalent



assets). From this perspective, the repo-ed assets are not encumbered. The only exception would be where a haircut is applied (in which case the portion of over-collateralization would be encumbered).

Failing to differentiate between forms of collateral transactions, or not recognizing where these encumber assets and where they do not, could lead to an overestimation of asset encumbrance, or regulation that unnecessarily inhibits the use (and fluidity) of usable collateral.

- **Reporting of SFTs**

The transparency of SFT market activity is desirable and necessary, not least in identifying and assessing potential risks related to credit, concentration, or leverage. However, the level of reporting should be commensurate with the objectives of the competent authorities, while not being unnecessarily onerous on the reporting counterparties. If the amount of data required is exhaustive, this could actually make interpreting it in any meaningful way challenging, while adding an additional layer of cost onto an already low-margin SFT market.

- **Central bank interventions**

Central bank initiatives designed to clear potential bottlenecks and dislocations in collateral supply can be seen as enhancing the fluidity of collateral, particularly where central bank monetary policy may be causing those bottlenecks and dislocations. Such initiatives would include the Bank of England's Special Liquidity Scheme (SLS), the Reserve Bank of Australia's Committed Liquidity Facility (CLF), or the Federal Reserve's Reverse Repo Program (RRP). However, there is also a danger that where central banks provide such collateral transformation facilities, they are offering a commercial service that should be provided by bank funding desks.

- **Shadow banking**

As SFT trading becomes more expensive and less commercially attractive for banks, it seems conceivable that some of this business may be taken up by less regulated non-bank financial entities, such as hedge funds. In one respect, this may be desirable since it would at least ensure some liquidity in the collateral markets. However, it would seem likely that such entities would be selective in their SFT markets, would certainly demand above-market returns, and may step away completely in times of market stress. Furthermore, it would appear to

defeat the purpose of regulation if markets simply moved to less regulated entities, and would probably only drive regulators to widen their scope¹⁸.

■ **Financial Transaction Tax**

The proposed EU 11 Financial Transaction Tax (FTT), were it to be applied to SFTs, would severely impair the effective functioning of collateral markets. An ICMA study suggests that the size of the European repo market could be reduced by as much as 66%, with the market effectively closed for transactions under six months' maturity. Numerous other studies point to the deleterious impact that this would have on pricing and liquidity in both primary and secondary securities markets, and the indirect costs to the wider economy¹⁹.

■ **Collateral management**

Ultimately, the new market environment requires that banks, investors, and market users become more adept at managing their liquidity, collateral, and risk²⁰. Collateral optimization will mean that assets are better sourced, priced, and allocated. As discussed in the previous section, for banks this will mean the de-siloification of liquidity and collateral management functions, and the establishment of cross-divisional funding desks.

While some banks seem to be leading the way in the integration of their various liquidity and collateral management units, others still have a lot of work to do in this respect.

¹⁸ See Recommendation 7 by the FSB: [FSB, 2013, 'Strengthening Oversight and Regulation of Shadow Banking: Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos', August 29 2013](#)

¹⁹ Some studies on financial and economic impacts of the FTT:

- (i) [IRSG, 2014, 'Implications of a Financial transaction Tax for the European Regulatory Reform Agenda', Special Interest paper, Deloitte LLP, published by the International Regulatory Strategy Group, City of London Corporation, and TheCityUK, January 2014](#)
- (ii) [IRSG, 2013, 'Implications of a Financial transaction Tax on Corporate and Sovereign Debt', a Special Interest Paper, London Economics for the International Regulatory Strategy Group, published by the City of London Corporation, April 2013](#)
- (iii) [Davis J et al, 2013, 'The Impact of the EU-11 Financial Transaction Tax on End-Users, Oliver Wyman](#)
- (iv) [ICMA, 2013, 'Collateral damage: the impact of the Financial Transaction Tax on the European repo market and its consequences for the financial markets and the real economy', ICMA, April 2013](#)

²⁰ See: [Hauser A, 2013, 'The future of repo: too much or too little?', Speech by the Bank of England, June 2013](#)

5. The systemic risks of inhibiting collateral fluidity

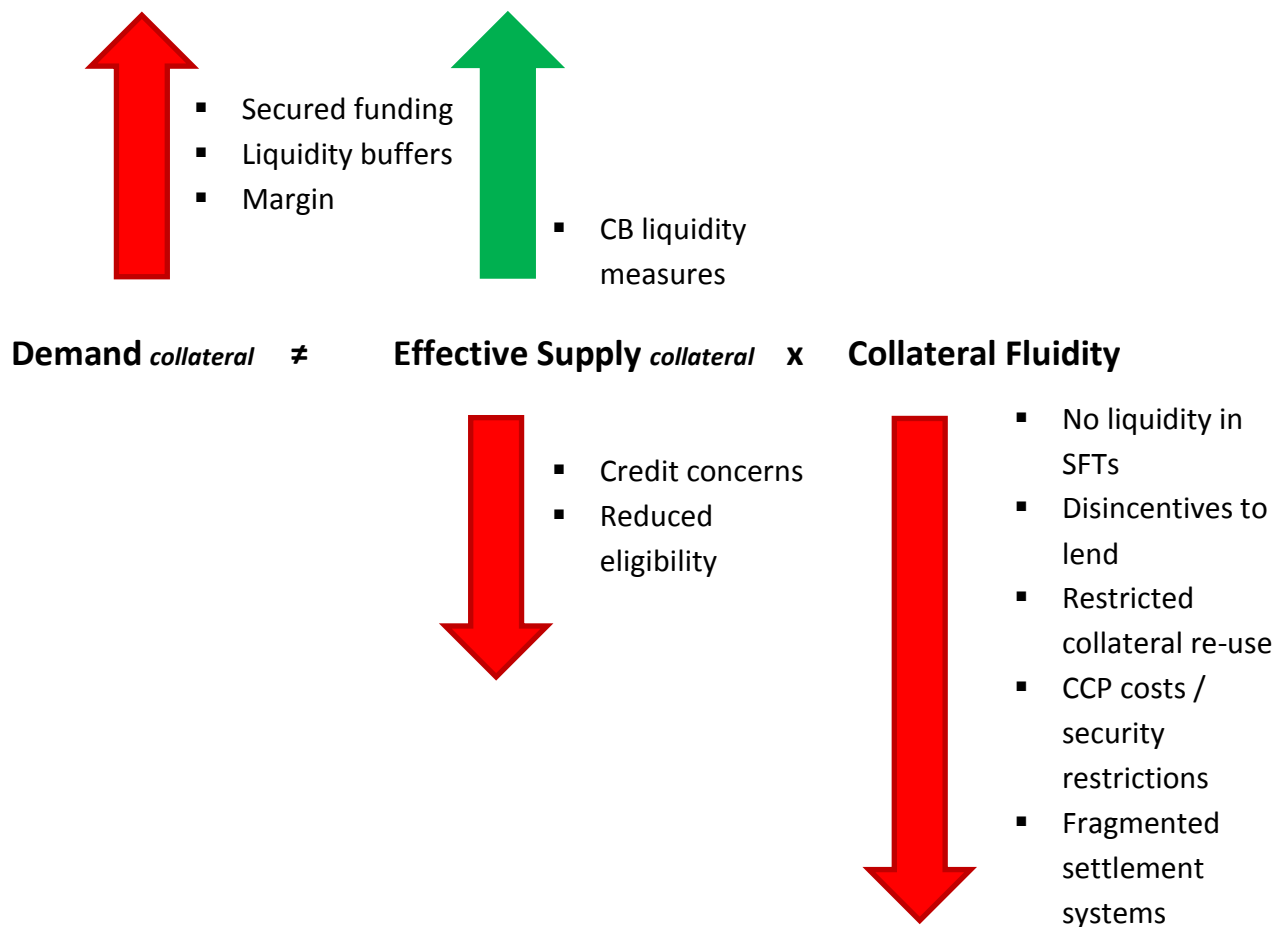
It is quite possible that the predicted demand-supply imbalances for collateral may not be significant, and any dislocations are localized, short-term, and eventually corrected by price adjustments for HQA and other exogenous factors. Even as trading SFTs becomes more expensive for banks, increasing costs and reducing liquidity for investors and capital raisers, the capital markets may still be able to function, so long as funding markets are not completely impeded, and where non-banks are able to take up some of the responsibility for liquidity provision. The Eurozone's fragmented and dislocated settlement systems are a visible short-term risk to collateral fluidity, but in time, these issues should resolve themselves.

There may be a valid argument that increasing the demand for collateral, while reducing its ability to move around the system, at least under normal market conditions, may not lead to the significant dislocations that some market practitioners and experts have predicted, and that the adverse impact for capital raisers, investors, and the broader economy, while significant, will not be cataclysmic. Where this is unlikely to hold true, however, is where markets become stressed.

In stressed circumstances, it is likely that demand for HQA and HQLA will increase, as lenders of cash require more and better security, banks look to bolster their liquidity buffers, and margin requirement increase in line with higher volatility. Meanwhile, the supply of usable collateral is likely to decrease, as asset credit concerns narrow the pool of eligible securities for many transactions, and net lenders of securities become more discerning about their counterparty credit.

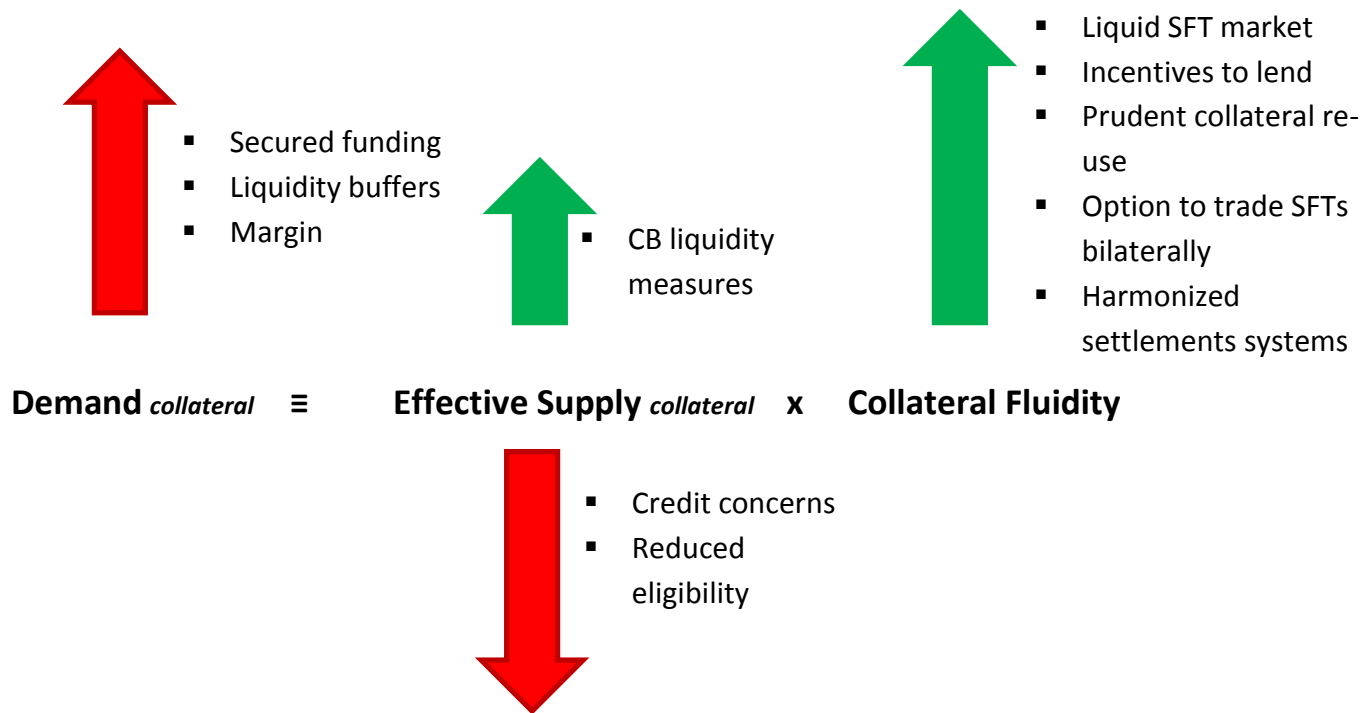
Again, this may be fine, if collateral fluidity is able to adjust for the demand-supply imbalance shock. If, however, fluidity is inhibited, then we have the ingredients for the perfect collateral and liquidity storm (See Figure 4). In this situation, capital markets could grind to a stand-still, affecting the ability of governments and corporations to raise funding, while investors would face escalating risks not only to their returns, but to their capital.

Figure 4: Collateral disequilibrium under stressed market conditions



If, however, fluidity is not inhibited, then the markets may be able to ride the storm. So long as bank funding desks can continue to make markets and provide intermediation in SFTs (particularly for liquid, low-risk HQA and HQLA), the costs and risks for non-banks to lend these assets are not prohibitive, unencumbered collateral is not restricted from being re-used, and there are alternatives to centrally-cleared SFTs, then the funding markets should continue to function (see Figure 5); just as the repo markets did throughout the 2007-11 financial crisis.

Figure 5: Collateral equilibrium under stressed market conditions



6. Conclusion: the coupling of regulation and collateral

It is broadly understood and accepted that global financial markets require a sound and robust regulatory framework to enhance market stability and efficiency, to protect investors and savers, and to identify and reduce systemic risks. What happened in 2007-11 must never happen again. Of course, this remediation will come at a cost, as bank balance sheets, the use of leverage, hedging, and transacting itself, all become more expensive. Regulators, however, might argue that this cost is justifiable in light of the regulatory objectives, and that it is borne by not only banks and financial institutions (which is already being reflected in significant deleveraging), but is disseminated throughout the whole economy.

Collateral, too, will play an ever more critical role in underpinning the stability and efficiency of financial markets, as secured funding, sufficiently margined derivatives trading, and rigorous liquidity requirements become the norm in the new market environment. This, too, will come at a cost, making high quality assets more expensive, and increasing the risks of demand-supply imbalances and short-term dislocations.

However, even with more stringent regulation and greater demand for collateral, so long as collateral is still free to move around the system, we may feel comfortable with the assumption that financial markets will continue to function, even if somewhat inefficiently, at least under benign conditions. However, if collateral fluidity is inhibited, this poses a risk to the overall functioning of the markets, which will become more pronounced under conditions of market stress. This could not only freeze funding and capital markets, but would have serious repercussions throughout the whole economy (see Box 4).

If banks find it economically inefficient, or are restricted by regulation from supporting the critical functions of sourcing, pricing, managing, and mobilizing collateral, and the infrastructure is not in place for the efficient mobilization of collateral, then the basic intermediation roles of banks and financial markets - that of maturity, risk, and credit transformation - would be undermined. For all the good work and best intentions of financial regulation, we would be embedding systemic risks.

Sound regulation is essential for the efficient and stable functioning of the global funding and capital markets that support our economies. So is collateral. In this respect, regulation should not only avoid inhibiting collateral fluidity, but, where possible, it should aim to enhance it.

Box 4: The impact of inhibiting collateral fluidity

For the markets:

- Less liquid secondary markets for securities
- Greater asset price volatility
- Hedging, and the pricing and management of risk, becomes more difficult
- Greater execution risks for investors

For the economy:

- Reduced investment in capital and businesses
- Higher borrowing costs for governments
- Increased costs for corporate capital raisers
- Increased cliff-effect risks for pension and other institutional investment funds
- More onus on central banks to support the markets
- Dampening effects on GDP and economic growth
- Increased systemic risks to the financial system that will be crystallized under conditions of market stress

Glossary

ABS	Asset Backed Securities
BCBS	Basel Commission on Banking Supervision
BIS	Bank for International Settlements
BOE	Bank of England
CA	Collateral Assets
CB	Central Bank
CCP	Central Counterparty
CDS	Credit Default Swap
CeBM	Central Bank Money
CESAME	Clearing and Settlement Advisory and Monitoring Experts Group
CGFS	Committee on the Global Financial System
CICF	Collateral Initiatives Coordination Forum
CLF	Committed Liquidity Facility
CoBM	Commercial Bank Money
COGESI	Contact Group on Euro Securities Infrastructure
CSD	Central Securities Depository
CSDR	Central Securities Depository Regulation
EBA	European Banking Authority
EC	European Commission
ECB	European Central Bank
EMIR	European Market Infrastructure Regulation
ERC	European Repo Council
EU	European Union
FSB	Financial Stability Board
FTT	Financial Transaction Tax
GMRA	Global Master Repo Agreement
HQA	High Quality Assets
HQLA	High Quality Liquid Assets
ICMA	International Capital Market Association
ICSD	International Central Securities Depository
IM	Initial Margin
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IRS	Interest Rate Swap
ISDA	International Swaps and Derivatives Association
LCR	Liquidity Coverage Ratio

LTRO	Long Term Repo Operation
MBS	Mortgage Backed Securities
MiFID/R	Markets in Financial Instruments Directive/Regulation
NSFR	Net Stable Funding Ratio
OTC	Over The Counter
RRP	Reverse Repo Program
SFT	Securities Financing Transaction
SLS	Special Liquidity Scheme
T2S	Target2-Securities