



**NEW REGULATION AND COLLATERAL FLUIDITY: THE SYSTEMIC RISKS
OF INHIBITING COLLATERAL FLUIDITY**

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Executive Summary: the systemic risks of inhibiting collateral fluidity

For a functioning and efficient financial market, we require the supply of usable collateral in the system to match demand, or at least be fluid enough to move around the system to meet demand. This paper highlights and discusses how much of the current and proposed regulation causes market distortions by significantly increasing demand on one side, while reducing supply and undermining fluidity on the other.

Demand for collateral is being driven primarily by Basel III liquidity buffers as well as margin requirements for both centrally-cleared and non-cleared OTC trades. This in itself does not pose a threat to the system, so long as there is enough available supply of collateral, and it is able to get to where it needs to be, when it is needed.

While the overall supply of acceptable (or 'good') collateral has increased in the past few years, mainly as a cyclical result of expanding government deficits, a number of market and regulatory forces exert downward pressure on this supply. Market factors include eligibility of 'good' collateral, which can vary depending on counterparty, and which is further susceptible to credit ratings. Central bank quantitative easing and non-financial use of surplus foreign exchange reserves directly reduces the available stock of high quality liquid assets (HQLA) that can be used as collateral. While increasing demand, the encumbered nature of collateral used to meet liquidity buffers or margin requirements further reduce supply of HQLA and high quality assets (HQA) that can be used as collateral. Meanwhile, regulatory disincentives to lending collateral arising out of costs and uncertainties, such as those presented by proposals for mandatory haircuts or mandatory buy-ins, only compound supply side shortages. Confusion in the identification and treatment of un-encumbered collateral does not help.

In terms of collateral fluidity, the 'plumbing' between central security depositories (CSDs) and different financial centers remains disjointed and inefficient, while European securities markets remain fragmented and uncoordinated. Some initiatives are in place to improve the transition of collateral and liquidity through the Euro-system, but not enough to support the imminent demand. Meanwhile, the very engine that moves collateral and liquidity through the system, the bank funding desks, face mounting costs and a direct threat to the economic viability of their business models from regulatory initiatives, such as the proposed Financial Transaction Tax (FTT).

The combined effects of these various systemic distortions become more profound under conditions of market stress. As markets become more volatile, so demand to shore up liquidity

buffers will increase, as too will initial margin requirements demanded by central counterparties (CCPs). Conversely, supply will reduce as banks and other financial institutions hold on to their HQLA collateral and traditional lenders become more concerned about counterparty risk, while down-grades and credit concerns reduce eligibility of certain collateral.

At a time when the efficient and effective sourcing, pricing, and mobilization of collateral through the system is most critical, the traditional providers of this vital liquidity - the bank funding desks - will have had their operations significantly curtailed by initiatives such as the FTT. While some of their business will have moved to less regulated institutions, it may not be enough, nor desirable, to depend on the shadow banking sector in times of market stress.

For these reasons there is growing concern among market participants and users that rather than avoiding a future financial crisis, current and proposed regulatory initiatives, in their totality, may well be creating future systemic financial instability.

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1. Introduction

This paper follows on from the ICMA paper, 'Avoiding Counterproductive Regulation in Capital Markets: A Reality Check'¹, which is a response to widening concerns regarding the cumulative impact of current and proposed regulatory reform, and the threats it poses to the effective functioning of the European repo and fixed income markets. That paper succinctly identifies many of the overlaps, conflicts, and inconsistencies of the various regulatory initiatives, and highlights the potential adverse consequences arising from their cumulative impact and that undermine the mutually accepted policy objectives of reform.

This paper seeks to further the discourse surrounding financial regulation, and to identify and explore the substantive systemic risks to the financial system that the regulation may be unintentionally creating. While we do not question the underlying intent of much of the current and proposed regulatory reform, market experts are becoming increasingly concerned that it may be fragmenting capital markets, imbedding fragility in the overall financial system, and heightening the probability of future financial crises. One focus for particular concern is the risks of collateral scarcity and, related to this, the impairment of collateral fluidity, which threaten the effective functioning of the financial system, not least during times of market stress. In many ways, the financial system is analogous to a plumbing system, with collateral and liquidity being pumped through the pipes to support and facilitate the smooth execution and settlement of financial transactions. As we will see, some of the current regulatory initiatives, either in themselves or as a cumulative effect, will directly increase the demand for collateral in the system, while potentially reducing supply, failing to connect the pipes, and threatening to disable the pump. Essentially, what sound regulation should be seeking to prevent, rather than cause.

This has led some commentators to question whether collateral is needed at all in the modern financial system. This somewhat philosophical question perhaps sits with other topics of existential inquiry, such as what is the purpose of money, or do we even need capital markets. In response, this paper addresses the important role that collateral plays in the effective functioning of the financial system, and the systemic risks to the global economy that arise out of regulatory initiatives that threaten its fluidity.

The paper begins by explaining what 'collateral' is and why it is important for the effective functioning of the modern financial system and capital markets. It introduces the concept of

¹ [ICMA, 2013, 'Avoiding Counterproductive Regulation in Capital Markets: a Reality Check', International Capital Market Association, Zurich, October 2013](#)

‘collateral equilibrium’, which helps to illustrate the balance between demand, supply, and fluidity of collateral. After discussing the market and regulatory impacts on demand and supply (both positive and negative), it focuses on the notion of ‘collateral fluidity’. Key to understanding this dynamic is the important role that bank funding desks play in this process, and which is being directly threatened by regulatory initiatives (such as the Financial Transaction Tax). Pulling all of these various distortive impacts of regulation together, the paper illustrates how rather than reducing systemic risk, regulatory initiatives, at least in combination, are imbedding it. We aim to illustrate that future financial crises, rather than being averted, are likely to be caused by certain aspects of regulation. With this in mind, the paper offers recommendations on how to ensure that the underlying objectives and intent of the various regulations can be best achieved, while not increasing systemic risk and future instability in the European and global capital markets.

2. What is collateral and why is it important?

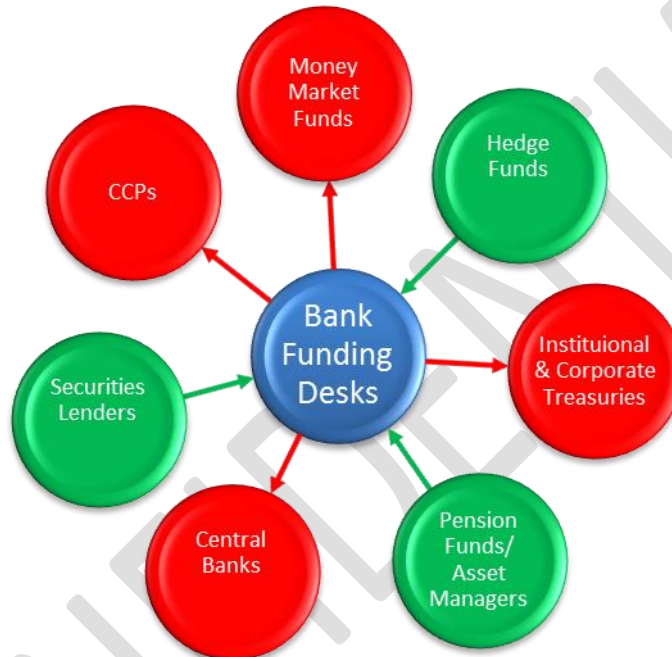
The use of collateral in financial transactions as a means of protection against counterparty risk is a well-established practice that is as old as the markets. In the 1990s, however, spurred by Basel I and driven by a number of European central banks, the European repo markets were developed as a means of replacing unsecured interbank lending with secured (or collateralized) lending². As lending and derivatives markets grew and developed through the 1990s, so the utilization of collateral has become 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.

What constitutes 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 allows for transferability of legal title. This could include government, agency, covered and asset-backed bonds, bills, equities, bank loans, traded funds, and even commodities, such as gold. What differentiates between forms of collateral, however, is the divide between ‘good’ and ‘bad’ collateral, where good collateral (usually investment grade) is more readily acceptable by collateral takers. Good 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 are effectively defined by the market

² 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](#)

acceptability of collateral to secure trades or as margin. This is important when we think about the available supply of collateral, not least since what constitutes 'good' collateral is not static, and is largely dynamic.

Figure 1: Users and providers of collateral



The users and providers of collateral can be equally varied. Key providers tend to be leveraged funds (hedge funds), or unlevered ('real money') financial institutions, namely securities lenders and custodian banks (such as BoNY Mellon and State Street), or pension funds, asset managers, or corporate treasuries that lend collateral as principal. The primary users are money market funds (MMFs), corporate or institutional treasuries with short-term liquidity to invest, central counterparties (CCPs) requiring margin, and central banks³. Banks are often both providers and users of collateral. Their funding desks not only borrow and lend collateral to support the

³ While central banks are usually takers of collateral through their money market operations, they can also be providers, such as the RBA's Committed Liquidity Facility.

bank's own trading activities, but they also offer and bid on collateral in order to service the funding and investment needs of their client base. These funding desks are primarily be banks' repo, stock loan, and equity finance desks, as well as possibly including functions of their prime brokerage, treasury, and operational divisions. However, for the purpose of this paper we will group these collateral and liquidity management functions under the umbrella of the 'Bank Funding Desk'⁴.

As collateral has become more important for the smooth functioning and 'lubrication' of the financial markets, so has the need for sound collateral and liquidity management, not least by the bank funding desks that sit at the heart of the system, and who are the key intermediaries driving the sourcing, pricing, and mobilization of collateral (see Box 1). As much as possible, financial regulation needs to support the prudent and efficient management and fluidity of collateral, not inhibit it.

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. Collateral equilibrium

Just as with money, in a functioning financial system collateral moves through the system supporting a whole range of transactions and investments. It is therefore critical that the available supply of collateral be able to meet the demand, so as to avoid dislocation or gridlock in financial markets. The key word here is 'available'. As we will explain, the total amount of collateral in existence is not the same as accessible or usable collateral. Related to the significance of available collateral is also the concept of 're-usable' collateral. As with money, the ability for collateral to move through the system unencumbered is an important component of the measure of supply. Thus, when we think about the demand and supply of collateral in the financial system, we also need to reflect on collateral fluidity.

⁴ An increasing trend is for banks to centralize (or 'de-silo') these various funding functions

We can adapt the equation proposed by Manmohan Singh⁵ to illustrate the equilibrium of demand and supply of collateral in a functioning financial system:

$$\text{Demand}_{\text{collateral}} = \text{Supply}_{\text{available collateral}} \times \text{Collateral Fluidity}^6$$

This simple dynamic shows us that as demand for collateral increases, so either the supply of available collateral or its fluidity (i.e. its ability to be reused) must also increase, or, ideally, both. As we will explore, interventions that cause disequilibrium by driving up one side of the equation, while restricting or reducing the other side, are likely to add to systemic risk. This should be an important consideration in the impetus for and design of financial regulation.

4. The demand for collateral

Since the start of the financial crisis in mid-2007, we have experienced a significant increase in the demand for collateral within the financial system. Much of this has been expedited by increased concerns of market participants over counterparty risk. However, we are on the verge of an even bigger acceleration in structural demand for collateral being driven by various regulatory initiatives designed to increase the robustness of the financial system. Rules under Basel III, the Dodd Frank Act, EMIR, and Solvency II require more available high quality collateral, primarily to meet initial margin requirements for CCP cleared and bilateral OTC derivatives trades, as well as to secure liquidity coverage ratios. While subject to a high degree of uncertainty, estimates of the increase in demand for good collateral over the next several years range between \$4tn⁷ and \$10tn⁸.

While becoming incrementally more difficult and expensive to source, this increase in demand for collateral need not automatically pose a threat to the efficient functioning of the financial system, so long as the supply and/or fluidity of available collateral can also increase, or, at the very least, are not inhibited.

⁵ [Singh M, 2013, 'Collateral and Monetary Policy', IMF Working Paper, WP/13/186](#)

⁶ Singh uses 're-use rate' or 'velocity' in his equation. Here we feel that 'collateral fluidity' illustrates the concept better

⁷ Based on a BIS report: [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](#)

⁸ [ISDA, 2012, 'Initial Margin for Non-Centrally Cleared Swaps: Understanding the Systemic Implications', November 2012](#)

5. The supply of collateral

As already discussed, there are a number of potential providers of collateral into the market, most significantly leveraged funds (hedge funds), collateral custodians, real-money financial institutions such as asset managers and corporate treasuries, as well as (increasingly) central banks.

The total supply of high quality collateral (estimated to be in the region of €53tn globally⁹) is determined largely endogenously of demand. The principal source of supply of high quality assets comes from sovereign issuers in the form of government, central bank, or government guaranteed bonds or other types of instrument. This is supplemented by the securities of highly rated corporate entities. Further supply can be created by banks through the pooling and securitization of balance sheet assets (such as ABS or MBS), although this is largely contingent on investor risk appetite, and not all pooled assets can be securitized. Accordingly, this supply is driven by public and private funding needs, which are largely cyclical.

However, there are a number of factors that can, do, and will restrict the available supply of both HQLA and HQA collateral. Some of these factors are market driven, while others are corollaries of new legislative initiatives. A shortage of HQLA and HQA collateral, even in the short-term, would likely cause systemic pressures and market dislocations, leading to higher premiums for such collateral, while also undermining central bank control of monetary policy¹⁰.

Market Driven

(i) Eligibility

For collateral markets to work effectively, as much as possible collateral needs to be fungible (i.e. equally substitutable and readily acceptable). However, this is rarely the case, as different collateral takers will often have varying eligibility criteria. These criteria can vary across key market participants, including central banks, CCPs, MMFs and other cash investors. Often, official credit ratings are the key determinant, but also security type, currency, or country of issuance, are considerations.

⁹ [CGFS, 2013, 'Asset encumbrance, financial reform and the demand for collateral assets', CGFS Papers, No.49](#)

¹⁰ See: [Bech and Kesister, 2013, 'On the Economics of Committed Liquidity Facilities', Conference Paper, Reserve Bank of Australia Liquidity and Funding Markets Conference, August 19-20 2013](#)

(ii) Credit ratings

Credit ratings are a key variable in assessing the quality and eligibility of collateral. Most collateral takers, including central banks and CCPs, are likely to have minimum rating criteria as awarded by the major rating agencies. This adds a pro-cyclical dynamic to supply, since credit ratings are likely to be marked lower during times of financial and sovereign stress, reducing the supply of acceptable collateral.

(iii) Central Bank monetary policy

Quantitative Easing (QE), or QE-like operations, being conducted by a number of central banks including the US, Japan, and the UK, directly reduce the stock of available quality collateral by silo-ing asset purchases on the central bank's balance sheet. To some extent, the full impact of this collateral drain is being ameliorated by central bank 'reverse repo' facilities such as the Reserve Bank of Australia's Committed Liquidity Facility. Through accepting lower quality assets in its Long Term Repo Operations (LTROs), the ECB has also explicitly aimed to keep the good:bad collateral ratio in the Eurozone high. However, more may need to be done to ensure that this silo-ed good collateral finds its way back into the system.

(iv) Other sovereign purchases of assets

High quality assets are also being drained from the supply pool by non-domestic central bank or sovereign demand. Central bank foreign reserves are used to Hoover up good quality assets such as US Treasuries and German Bunds, the Swiss National Bank being a notable case in point. These purchases not only target the highest quality and most liquid collateral, but they silo them, making them unusable elsewhere in the system.

(v) Counterparty risk

In times of market stress, providers of collateral may become more sensitive to counterparty credit risk, either refining their counterparty base, or choosing not to lend their better quality assets and so reducing the supply of eligible collateral.

Regulation driven

(vi) Liquidity Coverage Ratios

As already discussed, LCR requirements under Basel III force banks to hold a greater stock of HQLA collateral on their balance sheet, which cannot be re-used. This effectively drains the supply of available quality collateral that could otherwise be used to provide liquidity to the

market. Furthermore, during times of market stress banks are likely to increase their liquidity buffers, further diminishing supply.

(vii) Increased margin requirements

While the shift to CCP clearing for OTC derivatives trades being driven by EMIR is intended to improve the stability and transparency of these markets, it also increases the amount of collateral that needs to be tied up at CCPs in the form of initial margin, again reducing overall supply within the system. A further concern is how margin requirements of CCPs may change in times of market stress, both in terms of absolute levels as well as sensitivity to particular credits or asset types. The impact of more stringent margin requirements is also likely to stretch to non-CCP cleared derivatives trades, based on BCBS and IOSCO recommendations for international margin requirements for bilateral OTC trades.

(viii) Mandatory haircuts for repos

While applying haircuts (effectively a form of initial margin) to repurchase agreements is often prudent, and a common market practice in some instances, 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 minimum haircuts may be flawed¹¹. While the FSB does 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 custodian banks and securities lenders would also act as an economic deterrent to supply. Furthermore, enforcing mandatory haircuts in the interbank repo market would have virtually no net impact, given that banks both borrow and lend securities with each other.

Accordingly, the flexibility for regulated market participants to agree the appropriate level of haircuts is essential to the efficiency, liquidity, and commercial viability of the repo market. Enforcing fixed mandatory haircuts in the market, as proposed by the FSB, would only serve to undermine this flexibility, make collateral more expensive, and so reduce the available supply of collateral in the system.

¹¹ For example see: [European Parliament, 2013, 'Shadow Banking –Minimum Haircuts on Collateral', Economic & Monetary Affairs Committee, IP/A/ECON/NT/2012-29, July 2013](#)

(ix) Mandatory buy-ins

ICMA secondary market cash securities trading rules provide flexibility in the buy-in procedure to be followed in the Event of a transaction fail, and are based on sound principles that support an orderly and liquid market. In the case of repo transactions, the GMRA (and similarly the GMSLA for stock-loan transactions) allows counterparties the flexibility of ‘mini-close-outs’ for failed trades should the aggrieved counterparty feel that they have been economically disadvantaged¹². The proposal for mandatory buy-ins under CSDR, applicable to CCPs, CSDs, and trading platforms, would undermine this flexibility while adding a new level of risk to transacting in repo and stock-loan, particularly where the potential penalties associated with failing outweigh the economic benefits of the transaction. Such rigid buy-in rules are likely to provide a disincentive for counterparties to lend or recycle collateral, so reducing supply¹³.

(x) Defining asset ‘encumbrance’

There is still significant confusion among some commentators and regulators regarding the legal treatment of repo (and stock-loan) transactions, as opposed to ‘pledging’ collateral, and so the concept (and measure) of ‘asset encumbrance’. Unlike pledged collateral, where title remains with the pledging party, so encumbering that collateral, repo (and similarly stock-loan) transactions involve an outright ‘sale’ of the underlying collateral for cash: legal title is effectively transferred¹⁴. What underlies much of the confusion is the accounting treatment of repo and stock-loan transactions, which remain on the balance sheet of the lender, so giving the illusion of ‘encumbrance’. In fact, this is due to the commitment to repurchase the assets at a future date. Thus, while the accounting treatment accurately represents the economic substance of the underlying transaction, it does not represent the legal form. In the event of default, it is the legal transfer of title that is the relevant consideration; not who is the beneficial owner of the asset, or the length and composition of the collateral chain. It is therefore critical to the supply of available collateral that regulatory initiatives and treatment of repo and stock-loan transactions correctly distinguish between legally encumbered and un-encumbered collateral¹⁵.

¹² And then usually only in the case of persistent fails

¹³ Somewhat perversely, this is also likely to increase the incidence of market fails, which, currently, are mainly caused by a disconnected CSD infrastructure rather than due to insufficient collateral supply

¹⁴ The exception would be where haircuts are applied to repo and where the over-collateralized portion of the trade is effectively encumbered

¹⁵ For more on this, see: [ICMA 2013, ‘EBA Consultation Paper on Draft Implementing technical Standards \(ITS\) on Asset Encumbrance Reporting’, EBA/CP/2013/05, March 2013](#)

Thus, we can see that while there is, in theory, a large pool of assets that could constitute acceptable collateral, there are also a number of factors that restrict this supply, particularly in times of market stress and when the demand for quality assets is most likely to increase, either to collateralize loans or to shore up liquidity buffers¹⁶. This would suggest that collateral fluidity is paramount in ensuring functioning financial markets.

6. Collateral fluidity: the plumbing

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, 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'.

Regarding the plumbing, fifteen years after monetary union there is still no 'single' European financial market. As the European Union expands, so does the number of distinct Eurozone bond and securities markets and disconnected CSDs. Effectively, the plumbing that is supposed to support the pan-European financial markets, and the efficient flow of liquidity and collateral, remains a mish-mash of bespoke designed and poorly connected pipes and fittings¹⁷.

There are in place a number of regulatory and market driven initiatives to meet the various challenges that currently inhibit the efficient movement of collateral¹⁸. 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

¹⁶ A further consideration is that in times of market stress, the price of most 'risk' assets will fall, requiring more collateral to maintain the market value of the related transaction or pledge

¹⁷ These 'barriers' were initially highlighted in the 'Giovannini report' of 2001: [The Giovannini Group, 2001, 'Cross-Border Clearing and Settlement Arrangements in the European Union', Brussels, November 2001](#)

¹⁸ For a good overview of the various challenges and initiatives related to the infrastructure for collateral fluidity, see: [CICF, 2012, 'Collateral Fluidity', A White Paper prepared by the Collateral Initiatives Coordination Forum](#)

However, a number of significant challenges persist in the somewhat forlorn attempt to construct an integrated European settlements system:

- There remain inconsistencies and inefficiencies in the link between commercial bank and central bank settlements across the Eurozone. While T2S will coordinate and standardize the processes for central bank settlements, this does not address the different technical standards, business practices, and legal and regulatory requirements determining the settlement processes across European commercial banks.
- The increase in CCPs, that will result from the regulatory drive for centrally cleared OTC derivatives trades, will add to the strain on an already unconnected and uncoordinated settlements system.
- Fragmentation is likely to persist between European centers and securities markets, not least driven by the variety of credit, liquidity, and perceived risk of the diverse Euro denominated sovereign bond markets. This has led to a range of uncoordinated private initiatives to create indices or 'baskets', and is perhaps best exemplified by the failure of the 'Eurepo' project.

7. Collateral fluidity: 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 funding desk is the 'pump'.

As with most secondary financial markets, there is no reason why various market participants cannot trade repo or stock-loan with each other, and avoid transacting through an intermediary bank or broker-dealer. Already a number of non-bank financial institutions transact with each other directly, or through CCPs, and this trend in bank disintermediation is likely to continue, particularly with the development of peer-to-peer trading platforms for repo and securities financing trades (SFTs). However, it would seem important for entities that take on the role of 'collateral pump' be subject to adequate regulation and management of liquidity risk¹⁹. Again,

¹⁹ 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](#)

such regulation should reinforce the critical role that bank funding desks play in the liquidity and functioning of the funding market, which is often overlooked and unlikely to be replaced.

8. The role of the bank funding desk

Funding desks can serve a number of crucial functions:

- a) 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 structures;
- b) Interfacing with the central bank in money market operations as part of bank liquidity management;
- c) Managing the bank's liquidity buffers and stock of high quality liquid assets;
- d) Providing liquidity²⁰ and pricing to the bank's diverse client base for their various short-term funding and investment needs.

It is this last market making function that is at the heart of collateral fluidity, and is explained in more detail in Box 2.

Added to this diverse list of functions could be the scope for collateral sourcing, which is the sourcing of specific securities or asset types from clients to enhance supply and liquidity, as well as 'collateral transformation'. The latter is the substitution via repo of clients' bad collateral for sourced good collateral (at a market driven spread), which further enhances collateral supply and fluidity.

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 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. The conduct and control of central bank monetary policy would also become more difficult in the absence of active and functioning bank funding desks, given that the repo is the primary policy tool. Furthermore, active bank funding desks ensure that the bulk

²⁰ Here we define a liquid market 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

of repo and SFT activity remains in a highly regulated and relatively transparent trading environment, rather than thriving in the opacity of the shadow-banking sector.

Box 2: The funding 'Matched-Book'

Often overlooked is the market making service that funding desks provide. Were they 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 – and inaccurately - known as the 'matched-book'²¹) 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 function that funding desks provide that gives them their value, and which ensures a functioning and liquid market for collateral, as well as enhancing liquidity in the broader capital markets.

9. Turning off the pump

In many instances financial regulation has the unenviable task of walking a fine line between shoring up the financial system, reducing systemic risk, and mitigating the risks of future crises on one hand, and not compromising the efficiency, liquidity, and the effective functioning of the capital markets on the other. As we have seen already, while much of the new regulation is driving a significant increase in the demand for collateral, there are elements of it that could inadvertently reduce both supply and fluidity, so creating disequilibrium and the potential for blockages in the liquidity of capital markets and the effective functioning of the financial system.

²¹ 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'.

However, some proposed legislation directly threatens the effective functioning of the collateral markets by restricting and even 'switching off' the pump, none more so than the proposal for an EU11 Financial Transaction Tax, and, until very recently, the initially proposed treatment of repo in Basel III's Leverage Ratio calculation.

(i) The Financial Transaction Tax

The EU Member States' proposed FTT has drawn considerable concern from across the financial and economic spectrums, and it would unquestionably cause untold harm to the European financial markets and beyond. While either directly, or indirectly, no aspect of the European capital markets is likely to remain unscathed, the repo and stock-loan markets would be hardest hit, primarily due to the flat rate nature of the levy to be applied to SFTs²². Conservative estimates suggest that of the €3.7 trillion portion of the €5.6 trillion European repo market that would be taxable under the FTT proposals, only €1.2 trillion would survive, with virtually no trade existing under 6 months' maturity (currently 66% of the market)²³.

The result would be an unprecedented loss of liquidity in the short-term funding markets, making regulatory objectives such as meeting liquidity buffers or sourcing margin for CCP trades harder to achieve. As collateralized funding markets became unviable as a source of short-term liquidity, and as banks struggled to fund themselves, so the financial system would become ever more dependent on central bank liquidity, while monetary policy would become harder to execute. Further knock on effects would be severe impediments in the raising of capital, both in corporate and sovereign markets, as secondary market liquidity and pricing broke down. The ensuing costs to government, corporate, and bank funding would be felt throughout the real economy, and these would most likely outweigh any potential tax revenues or redistributive benefits that might be generated. The anticipated loss of depth and liquidity in the capital markets would serve only to increase their fragility in times of stress, further undermining economic stability²⁴.

²² The impact of a flat fee would have a disproportionate impact the shorter the maturity of the transaction, to the point of absurdity. On an overnight trade, for instance, the 0.10% levy would equate to an additional cost of 36%. Given that the tax is levied on all sides of a transaction, this would mean a 72% charge for an overnight match-funded trade.

²³ See: [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](#)

²⁴ For a further discussion on the risks and potential impacts of the FTT, see:

(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) Basel III Leverage Ratio

Until January 2014, the BCBS proposal for the gross treatment of repo and SFTs in the calculation of the Basel III Leverage Ratio posed another existential threat to the collateral pump and the economic viability of much of bank funding desks' market making activities. Had SFTs been measured gross in the calculation of the ratio denominator (exposure method), irrespective of enforceable netting agreements that ensure banks are not exposed to gross risk, this would have significantly exaggerated banks' balance sheets in leverage calculations to the point where the Leverage Ratio, rather than being a 'back stop', would instead become the primary constraint on banks' assets. The result would have been a sharp increase in the cost of capital for SFTs (irrespective of underlying collateral quality), and would have prompted huge deleveraging, increased repo costs, reduced liquidity, and a shift from high volume, high liquidity, low risk funding activity by banks into high risk, low liquidity assets.

While the level of the leverage ratio has the potential to weigh on repo market making activity²⁵, and the inclusion of cash and HQLAs in the denominator still creates a perverse incentive to minimize quality assets in favour of 'bad collateral', the BCBS's conclusion to recognize netting agreements can be viewed as averting a significant risk to collateral fluidity and the effective functioning of the financial markets.

Accordingly, this serves as a welcome example of where broad consultation and an assessment of unintended economic consequences have helped to inform and enhance the quality of financial regulation in order to better serve its objective.

What becomes clear from the potential unintended economic outcomes of both of these initiatives, is the importance of the market making function of bank funding desks, not least for high-quality assets. If restricted, liquidity in collateral markets and the health of the financial markets will be jeopardized. Other liquidity enhancing activities such as collateral sourcing and

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- (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) [Hill 2013, 'Robin Hood or King Ludd? A discussion of the implications of the proposed EU 11 Financial Transaction Tax on the Euro Repo Market', May 2013](#)

²⁵ 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 bank holding companies (BHCs) adhere to an even higher Supplementary Leverage Ratio (SLR) of 5% is proposed for Bank Holding Companies, and 6% for the Largest Bank Holding Companies

collateral transformation would also become too expensive for banks to perform. Somewhat perversely, and counter to the intent of most regulatory initiatives, banks would instead be economically incentivized toward providing lower quality, high risk, high margin funding trades. Meanwhile, it is likely that some of the market making activities and services of banks could be taken on by less regulated, and more opaque, financial institutions.

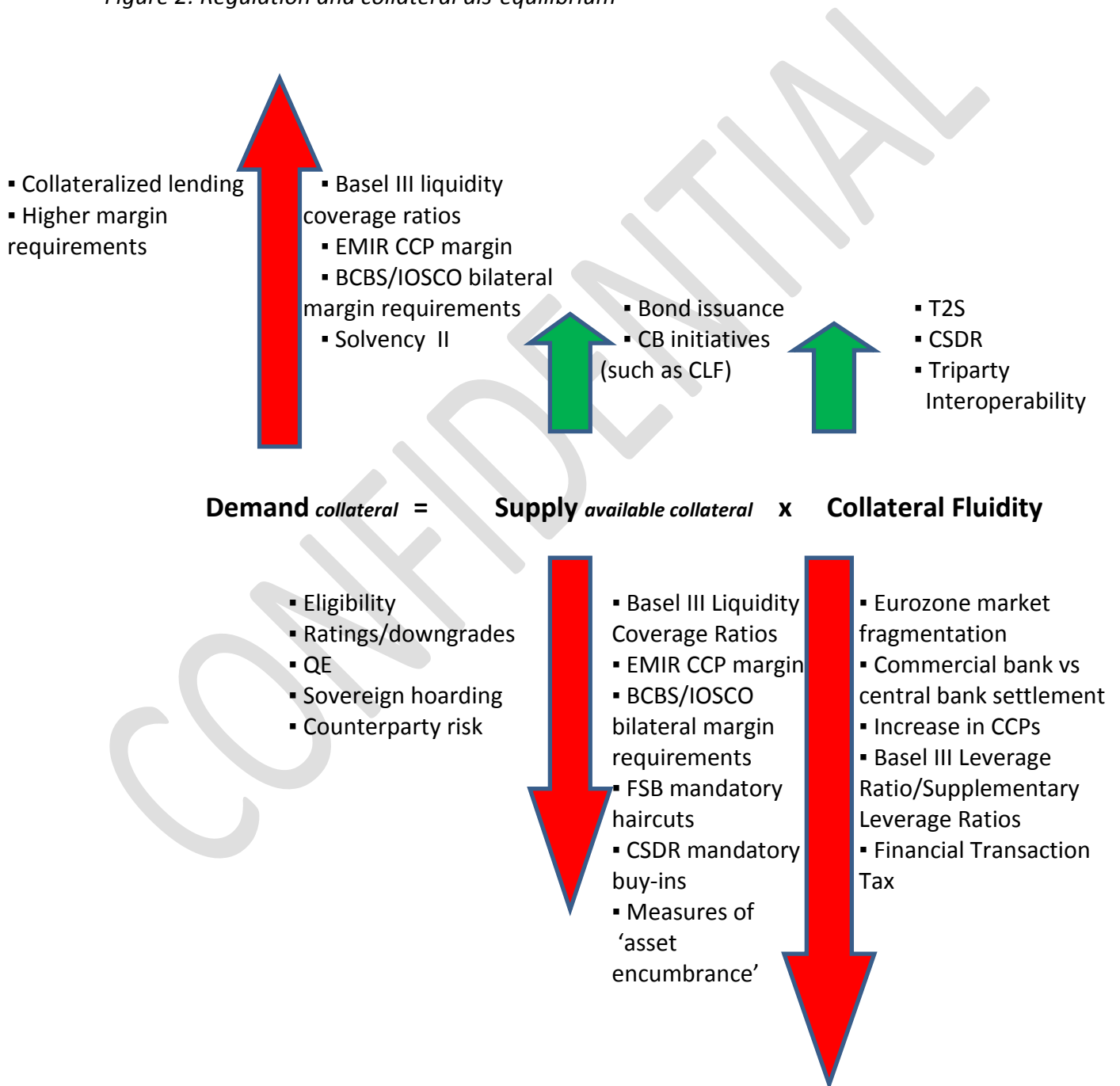
At a systemic level, with the pump impeded, one could reasonably expect reduced liquidity and higher costs for high quality collateral, an increase in lower quality assets and risk on banks' repo books, and a marked shift in repo activity from the regulated environment to shadow banking: essentially, everything that the policy intent of regulation sets out to negate.

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10. Summary: regulation and collateral disequilibrium

Figure 2 illustrates the various market and regulatory forces that are likely to affect the demand, supply, and fluidity of collateral, particularly under conditions of market stress.

Figure 2: Regulation and collateral dis-equilibrium



11. Proposals to improve the effectiveness of regulation

It is in the interests of all market participants, as well as the wider real economy, that financial markets remain robust, that as much as is possible systemic risk is reduced, and that the risks of future financial crises are mitigated. As a corollary to these objectives of prudent financial regulation, it is also important that markets remain liquid, efficient, competitive, transparent, and able to function effectively in times of stress. With this common purpose in mind, we outline below a number of recommendations to support the coordination and efficacy of certain key regulatory proposals.

a) Financial Transaction Tax (EU)

The full impact of the proposed FTT on European capital markets and, more pertinently, on the wider economy warrants further debate, as does a thorough and rigid scenario analysis of the likely outcomes with respect to the proposed objectives (including revenue generation). Furthermore, it is imperative that repo and SFTs of all types be exempt from such a levy if the Eurozone funding and collateral markets are to continue to function efficiently, and without risks of gross distortions and market failures. Such a tax on repo and SFTs would also inhibit the effective attainment of other regulatory objectives, such as shoring up liquidity buffers and meeting margin requirements for centrally cleared derivatives transactions, while making banks (and the whole economy) ever more dependent on central bank liquidity. (See Section 8.)

b) Margin requirements (EMIR; BCBS/IOSCO)

As much as possible, initial margin requirements for CCP and bilateral trades should be appropriately risk-based, so accounting for risk off-sets, to prevent distortions in the supply and pricing of collateral. It should also be remembered that the calling of variation margin (daily or even intra-daily), is already an established practice in the short term funding markets and serves to mitigate a significant amount of counterparty risk. (See Section 5 (vii).)

c) Mandatory minimum haircuts (FSB)

Much as with mandatory initial margin requirements, imposing mandatory haircuts on repo and SFTs distorts the price and liquidity of collateral. As much as possible, market counterparties that are prudentially regulated for capital and liquidity should be left to determine and impose appropriate haircuts. Furthermore, where minimum haircuts are mandated for non-prudentially regulated entities, the scope of transactions covered by

the proposed methodology should be consistent with the proposed scope for numerical floors. (See Section 5 (viii).)

d) Mandatory buy-in rules (CSDR)

Mandatory buy-in rules for CCPs, CSDs, and other market counterparties, should not be enforced, with GMRA/GMSLA providing the pertinent legal framework for both cash market and SFT related fails. (See Section 5 (ix).)

e) Collateral eligibility (ECB; EMIR)

As much as possible within appropriate prudential limits, the definition of HQA should be broadened for eligibility both with central bank monetary operations, and for pledging margin with CCPs. There should be consistency in the collateral that various Eurozone central banks will accept as part of liquidity ratio calculations, with the government debt of the issuer country being a minimum requirement, and harmonization across the various regulatory jurisdictions with regard to collateral eligibility. Consistency of eligible collateral across CCPs would further enhance liquidity and fluidity of collateral.

f) Asset encumbrance (EBA; BIS)

A clearly defined understanding, at both the legal and economic levels, of what is meant by asset encumbrance and the acceptable reuse of unencumbered collateral needs to be broadly agreed upon by regulators, particularly as it relates to repo and stock-loan transactions. (See Section 5 (x).)

g) Europe's market infrastructure (EC; ECB; CESAME; COGESI)

Greater effort, support, and coordination are needed in harmonizing CSD interoperability, commercial bank settlement processes, and the Eurozone's fragmented securities markets. (See Section 6.)

h) Central bank collateral liquidity measures (ECB)

HQLA and HQA supply and fluidity could be enhanced through central bank intervention (similar to the RBA's CLF) to recycle stockpiles of assets held on the balance sheets of member central banks. Such a facility could be broadened to include eligible assets held by CCPs and even money funds. (See Section 5 (iii))

12. Conclusion

While market participants fully recognize and support the intentions and importance of sound financial regulation, it is apparent that some initiatives or policy detail, whether by themselves or cumulatively, have the potential to produce unintended, counterproductive outcomes. In some aspects, these may also be building systemic risks that threaten the very functioning of the capital markets, and which could be at the root of a future financial crisis.

Key to the effective functioning of financial markets is collateral, not least high quality, liquid collateral, which is used to securitize loans, collateralize secured lending (repos and securities lending), margin derivatives trades, and transmit monetary policy (through central bank repo). The users and providers of collateral are varied, and connecting these entities are typically the bank funding desks (the 'pump'). Spurred by regulation, demand for collateral is increasing, and will continue to increase. Meanwhile, a range of factors, both market driven but also as a result of regulatory policy, are exerting downward pressure on the available supply of good collateral. This in itself is not a problem, so long as collateral fluidity is not inhibited and good collateral can be sourced and moved to the right place at the right time, smoothly and efficiently. Herein lays a systemic danger.

Collateral fluidity requires functioning and connected 'plumbing'; that is, the market infrastructure to facilitate the efficient flow of collateral between market participants, depositories, and jurisdictions. Within the EU, a number of significant challenges to the interoperability of different settlement systems, a lack of standardization across jurisdictions, and the absence of a single market all pose a serious threat to the efficient fluidity of collateral. It is also needs to be recognized that collateral does not move by itself. This requires a functioning 'pump', which is essentially the bank funding desks that are responsible for the sourcing, pricing, and mobilization of collateral. Again, regulatory initiatives (the FTT not least amongst them) threaten to switch off the pump. The alternatives to the bank funding desks in this vital capacity lay in the shadows, and beyond prudential regulation.

In conditions of market stress, when the demand for good collateral increases and the available supply decreases, the impact of inhibiting collateral fluidity will be to compound this disequilibrium, putting further strain on financial markets, and heightening the risk of another systemic crisis.

For regulation to be effective and to achieve the objectives of reducing systemic risk and mitigating the risks of future crises, it is essential that it recognizes the importance of collateral

and collateral fluidity for the financial system. As much as possible, regulatory initiatives should seek to avoid creating potential disequilibrium, whether caused through creating demand and supply imbalances, or by inhibiting collateral fluidity. The recent revision by the BCBS to provide for netting of SFTs in the calculation of leverage ratios is a welcome example of such recognition of potential disequilibrium. Even better would be policies that directly support and enhance collateral fluidity.

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Annex: Acronyms

ABS	Asset Backed Securities
BCBS	Basel Commission on Banking Supervision
BIS	Bank for International Settlements
CB	Central Bank
CCP	Central Counterparty
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 (see RBA)
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
EU	European Union
FSB	Financial Stability Board
FTT	Financial Transaction Tax
GMRA	Global Master Repo Agreement
GMSLA	Global Master Stock Loan Agreement
HQA	High Quality Assets
HQLA	High Quality Liquid Assets
ICMA	International Capital Market Association
ICSD	International Central Securities Depository
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
ISDA	International Swaps and Derivatives Association
LCR	Liquidity Coverage Ratio
LTRO	Long Term Repo Operation (see ECB)
MBS	Mortgage Backed Securities
MMF	Money Market Fund
OTC	Over The Counter
QE	Quantitative Easing
RBA	Reserve Bank of Australia

SFT
T2S

Securities Financing Transaction
Target2-Securities

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