



## **ICMA EUROPEAN REPO and COLLATERAL COUNCIL**

DG Financial Stability, Financial Services and Capital Markets Union  
European Commission  
Brussels  
Belgium

24 June 2016

Dear Sirs,

### **Response submission from the ICMA European Repo Council**

**Re: Commission services' targeted consultation on "*Further Considerations for the Implementation of the Net Stable Funding Ratio (NSFR) in the EU*"**

#### **Introduction:**

The purpose of this letter is to provide feedback on behalf of the International Capital Market Association's ("ICMA's") European Repo and Collateral Council ("ERCC"), concerning the Commission services' targeted consultation on "*Further Considerations for the Implementation of the NSFR in the EU*", as published on 26 May 2016.

The ICMA ERCC notes that this is a targeted consultation to gather the views of selected stakeholders (in particular financial institutions that could be impacted by the implementation of the NSFR at EU level, associations representing their interests and supervisory authorities) on specific issues that could be raised by the implementation of the NSFR at EU level. The overall scope of this is broader than the ICMA ERCC's repo and collateral market focussed remit and accordingly the ICMA ERCC looks to others to comment on the full range of questions which the consultation raises. Nevertheless, the EU implementation of the NSFR is a topic of significant concern to the ICMA ERCC, so this response submission seeks to convey the reasons underlying this concern and to address just a few of the specific questions raised in the consultation paper.

## **Commentary:**

The ICMA ERCC perceives that the cumulative impact of the pressures being imposed on the repo market, most particularly by the leverage ratio, are such that it is already a market under significant stress. The impact of the NSFR, if simply adopted exactly as outlined by the BCBS, would create significant additional stress and weaken the effectiveness of the repo market; and, given their interwoven relationship, the collateral market.

The ICMA ERCC considers that, without dropping the worthwhile effort to enhance long term financing stability through the imposition of NSFR, there are a number of ways in which its details could be calibrated in order to better smooth its effects on repo and collateral markets. To avoid driving essential cash and collateral management activity out of the money markets, which would leave central banks having to intermediate liquidity, the ICMA ERCC believes there is a need to effectively exempt short-term activity from the NSFR imposition of an element of long-term funding costs.

These concerns are fully explained in attachment 1, an ICMA ERCC paper, of 23 March 2016, *“Impacts of the Net Stable Funding Ratio on Repo and Collateral Markets”*.

## **Responses to specific consultation questions:**

*Q1. In light of previous consultations, could you describe more specifically, if appropriate, the specific activities, transactions and business models where you have evidence that the implementation of the NSFR could have an excessive impact or important unintended consequences?*

A1. As more fully explained in attachment 1, the ICMA ERCC paper, of 23 March 2016, *“Impacts of the Net Stable Funding Ratio on Repo and Collateral Markets”*, the ICMA ERCC considers that the implementation of the NSFR could, if inappropriately calibrated, have excessive impact or important unintended consequences in relation to repo and collateral markets. In order to further illustrate how NSFR would impact these markets, you will also find in attachment 2 a series of illustrative impacts. Furthermore, attachment 3 includes an attempted quantification based upon ICMA ERCC European repo market survey data. The ICMA ERCC wishes to highlight that whilst the concluding paragraph of attachment 3 describes how much of a shift of exposure would be needed in order to eliminate the net RSF, the reality will be that rather than such a shift occurring the only practical option for banks will be to respond to the impact of the net RSF by reducing volumes.

*Q6. In light of previous consultations, could you provide substantiated evidence about possible issues caused by the application of the BCBS NSFR standard to short term transactions with financial institutions at European level and which have not been taken into account at Basel level? If yes, what alternative treatment would you propose for NSFR calculation purposes to deal with the funding needs arising from short-term transactions with financial institutions? If possible, please provide the impact on your institution of the alternative treatment you propose (as compared to the BCBS standards).*

A6. Please see our response at A1. above. As also described in attachment 1, the ICMA ERCC views that:

Without dropping the worthwhile effort to enhance long term financing stability through the imposition of NSFR, there are a number of ways in which its details could be calibrated in order to better smooth its effects on repo and collateral markets. These include the possibility to further refine the applicable ASF/RSF proportions in order to rebalance their asymmetry driven behavioural effects (including potentially identifying more detailed specific treatments for special asset types such as HQLA, or in relation to desirable financing activities such as matched book repo facilitation); and relaxing the conditionality for SFT netting, and/or allowing for a more expansive interpretation of interdependent assets and liabilities, in order to allow more scope for mitigation of the impacts of NSFR. A different treatment of collateral within different types of transaction described (repo and derivative margining) regarding NSFR would have negative impacts on the interdependencies between these markets.

The IMCA ERCC believes that those responsible for NSFR's implementation should give careful consideration to its impacts, conducting full and deep impact studies prior to concluding which specific details to adopt. The ICMA ERCC's own considered view is that the best way to adapt the NSFR would be to re-calibrate it such that short-term – in this context, say those of up to six months – secured financing transactions, such as repo, are exempt. Short-term cash and collateral liquidity management activity is governed by the liquidity coverage ratio (LCR) requirements which have been imposed, already leading banks to far more carefully and actively manage their liquidity needs out to at least 90 days and affording supervisors with a high degree of visibility in relation to these activities. Such an exemption would avoid that the NSFR imputes an element of long-term funding costs into the financing of short-term assets.

The ICMA ERCC also sees that a broadly equivalent set of considerations lead logically to the conclusion that all short-term money market activities should be exempt from NSFR's imposition of an element of long-term funding costs. Money market activities will not be able to bear such costs and absent targeted relief central banks will be left having to intermediate liquidity.

On a separate note, the ICMA ERCC feels that there is some uncertainty with regards to the treatment of encumbrance on netted back-to-back collateral swaps. This nature of this uncertainty is described in the ICMA ERCC note included as attachment 4 to this response, together with a description of the treatment proposed for such netted back-to-back collateral swaps.

*Q7. If you propose special treatment for specific activities (e.g. client's short facilitations activities, prime brokerage businesses...), how would you define these activities?*

A7. The illustrative examples provided in attachment 2 quite clearly show the nature of typical examples of specific activities. In case any further clarification would be helpful, the ICMA ERCC would welcome the opportunity to further discuss these illustrations.

By way of illustration we offer the following elaboration relating to the penultimate page of attachment 2, which is headed "Pass-Through: Cash Market Short Covering". In the current NSFR version, cash proceeds received from short sales of securities receive a 0% ASF factor. This is supposedly to reflect that those proceeds do not have an explicit maturity.

This 0% ASF factor is uneconomic because it creates an imbalance between:

- the asset side related to the transaction leading to the short sale (the reverse repo or collateralised security borrowing used to source the security), which receives an RSF based on the maturity, the underlying and the counterparty of this transaction (typically, for a 3-month reverse repo with an FI on Level 1 assets: 10%); and
- the liability side, which corresponds to the short sale proceeds, and which receive a 0% ASF factor.

This imbalance does not reflect the actual economic situation, since by nature the position is hedged liquidity-wise (the bank is able to keep the cash as long as the reverse repo is outstanding, and uses this cash precisely to finance the reverse repo).

This imbalance will render uneconomic transactions which had already a low return on assets when subject to leverage ratio requirements, namely:

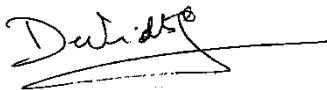
- client short facilitation;
- hedge of linear derivatives (clients selling forward cash instruments through derivatives).

As a result, banks will most likely decrease their provision of such products.

**Concluding remarks:**

The ICMA ERCC appreciates the valuable contribution made by the Commission services through its examination of the issues articulated in this public consultation document and would like to thank the Commission services for its careful consideration of the points made in this response. The ICMA ERCC underscores its belief that there will be serious adverse consequences if the implementation of the NSFR is not carefully calibrated. The ICMA ERCC remains at your disposal to discuss any of the above points.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Godfried De Vidts', with a long horizontal line extending to the right.

**Godfried De Vidts**

Chairman

ICMA European Repo and Collateral Council

# **Attachment 1**



## **ICMA EUROPEAN REPO and COLLATERAL COUNCIL**

23 March 2016

### **Impacts of the Net Stable Funding Ratio on Repo and Collateral Markets**

#### **Abstract:**

Repo and collateral markets lie at the heart of today's financial market system and are vital to its smooth functioning. This has significant implications for both financing, of business and governments, and the effectiveness of financial regulatory measures designed to provide financial stability – each of which will be adversely impacted if the operation of repo and collateral markets becomes impaired.

The cumulative impact of the pressures being imposed on the repo market, most particularly by the leverage ratio, are such that it is already a market under significant stress. The impact of the NSFR, if simply adopted exactly as outlined by the BCBS, would create significant additional stress and weaken the effectiveness of the repo market; and, given their interwoven relationship, the collateral market.

Without dropping the worthwhile effort to enhance long term financing stability through the imposition of NSFR, there are a number of ways in which its details could be calibrated in order to better smooth its effects on repo and collateral markets. To avoid driving essential cash and collateral management activity out of the money markets, which would leave central banks having to intermediate liquidity, the ICMA ERCC believes there is a need to effectively exempt short-term activity from the NSFR imposition of an element of long-term funding costs.

The benefits of making such a market sensitive adaptation would be felt by borrowers, both corporate and governmental, and investors; and would help underpin the effective functioning of other regulations designed to deliver increased financial stability.

## **Impacts of the Net Stable Funding Ratio on Repo and Collateral Markets**

### **Introduction:**

Repo and collateral markets lie at the heart of today's financial market system and are vital to its smooth functioning. This short paper analyses and illustrates the impacts on these essential markets arising from the Basel Committee on Banking Supervision's ("BCBS's") "Basel III: the net stable funding ratio" ("NSFR"), as published on 31 October 2014. These impacts add to market concerns regarding the cumulative impact of regulation on repo and collateral markets. The International Capital Market Association's ("ICMA's") European Repo and Collateral Council ("ERCC") believes that this warrants careful examination and calibration of the NSFR, as work progress to implement it at national and regional levels – alongside increasing efforts to better understand the cumulative impact of regulation.

### **Repo and collateral markets – the heart of the financial market system:**

The ICMA ERCC wishes to highlight that repo plays a vital role within the financial system. It underpins the functioning of secondary and primary capital markets, where corporate and government borrowers raise money to finance their long-term needs. The cost of borrowing in the capital markets will be increased in case there is not a well-functioning repo market. Repo is also the key component of the shorter-term money markets, which provide an essential mechanism to allow for the efficient management of short-term cash and collateral requirements. Since repo provides a secured means of financing in this market it is the instrument of choice, with market participants and public authorities keen to avoid the proliferation of unsecured counterparty exposures. In case the repo market is unable to fulfil this role, commercial banks would have no choice other than to conduct all their liquidity management through central banks.

The ICMA ERCC also observes that collateral now plays a key role in financial markets, in no small part as a result of official policy interventions designed to mitigate the risks of financial market activities. For these measures to work as intended, it is essential that there is sufficient collateral fluidity – such that the right amount, of the right type, of collateral can be available whenever and wherever needed. This needs a good infrastructure for the movement of collateral, but also a robust repo market, since the repo market provides the principal mechanism for the transfer of collateral.

### **Repo and collateral markets already face significant stresses and the NSFR will exacerbate this:**

The ICMA ERCC has published a number of papers to illustrate the importance of repo and collateral and in its most recent paper has drawn attention to the state of the repo market. The cumulative impact of the pressures being imposed on the repo market, most particularly by the leverage ratio, are such that it is already a market under significant stress. The impact of the NSFR, if simply adopted exactly as outlined by the BCBS, would create significant additional stress and weaken the effectiveness of the market. Given the role of repo and collateral markets at the heart of the financial system, this would have negative implications for the smooth functioning of broader financial markets – which would, in turn, lead to increased costs and risk for market participants, including those corporates and governments borrowing to finance their economic needs. At the same time there would also be a detrimental impact on the effectiveness of many of the measures put in place to improve the stability of the financial system, dependent as they are on high quality collateral.

### **Certain key impacts of NSFR to consider in the context of repos and collateral:**

Faced with a new requirement to hold long-term “stable” funding against short-term reverse repo assets, banks subject to required compliance with the NSFR will all face the same incentive structure regarding how they should seek to structure their activity. This will channel such activities to those combinations of counterparties and residual maturities which best fit within the NSFR construct, likely creating an element of famine and feast. It is unlikely all market participants will be able to smoothly fulfil their requirements with their first choice structures – for example because there will likely only be very limited scope available for transacting repos with Sovereigns, PSEs and non-financial corporates.

Yet not all firms will in fact be impacted by the NSFR in the same way at the same moment in time. Firms which fall under different regulatory constructs will face similar, but not identical, implementing requirements; not only in the global market context but also to some extent even within the EU. Also, firms will react to market pressures, so the impact of NSFR will run, unevenly, ahead of the official implementation timetable. Different corporate structures may have a very significant effect, especially if not all regulatory authorities adopt consistent approaches regarding the application of the NSFR at group, as opposed to individual entity, level. Furthermore, from the regulatory perspective the NSFR applies to a firm (or group) as a whole, yet to optimise the value of a firm it is necessary to assess the contribution made by different lines of business and this frequently involves the allocation of costs across business lines. Any push down of incremental costs stemming from NSFR compliance to business, or even desk, level it is likely to prompt a rebalancing of activity away from repo and collateral.

### **Carefully considered implementation of the NSFR can help to mitigate concerns:**

Without dropping the worthwhile effort to enhance long term financing stability through the imposition of NSFR, there are a number of ways in which its details could be calibrated in order to better smooth its effects on repo and collateral markets. These include the possibility to further refine the applicable ASF/RSF proportions in order to rebalance their asymmetry driven behavioural effects (including potentially identifying more detailed specific treatments for special asset types such as HQLA, or in relation to desirable financing activities such as matched book repo facilitation); and relaxing the conditionality for SFT netting, and/or allowing for a more expansive interpretation of interdependent assets and liabilities, in order to allow more scope for mitigation of the impacts of NSFR. A different treatment of collateral within different types of transaction described (repo and derivative margining) regarding NSFR would have negative impacts on the interdependencies between these markets.

The IMCA ERCC believes that those responsible for NSFR’s implementation should give careful consideration to its impacts, conducting full and deep impact studies prior to concluding which specific details to adopt. The ICMA ERCC’s own considered view is that the best way to adapt the NSFR would be to re-calibrate it such that short-term – in this context, say those of up to six months – secured financing transactions, such as repo, are exempt. Short-term cash and collateral liquidity management activity is governed by the liquidity coverage ratio (LCR) requirements which have been imposed, already leading banks to far more carefully and actively manage their liquidity needs out to at least 90 days and affording supervisors with a high degree of visibility in relation to these activities. Such an exemption would avoid that the NSFR imputes an element of long-term funding costs into the financing of short-term assets. The ICMA ERCC also sees that a broadly equivalent set of considerations lead logically to the conclusion that all short-term money market activities should be exempt from NSFR’s imposition of an element of long-term funding costs. Money market activities will not be able to bear such costs and absent targeted relief central banks will be left having to intermediate liquidity.



## Concluding remarks:

It appears clear to the ICMA ERCC that the NSFR will significantly impact short term markets. The ICMA ERCC is intensely aware of the importance of collateral to the financial system and of the vital role played by the repo market in facilitating the movement of collateral, such that it can be available when and where needed.

As outlined in this paper, the NSFR will have important impacts on repo and collateral markets, necessitating careful impact study and consideration of potential re-calibrations to NSFR.

Significant effects from these impacts will be felt by all clients of the banking industry, be they corporates, sovereigns, or buy-side firms, such as asset managers, pension funds, insurance companies, money market funds, hedge funds, represent money invested from the real economy.

Examples of a few of the problems which can be anticipated include:

- Banks being forced to hold billions of longer-term funding in relation to positions taken in the European repo market, in which data shows that almost two-thirds of outstanding volumes are traded for maturities of less than one month (see ICMA survey data on page 18) – there are significant costs in funding such a cautious mismatch of maturities.
- These much increased funding costs will be passed on to corporates, sovereigns, and buy-side firms, both through their direct involvement in the repo market and through the ways in which repo and collateral markets more broadly underlie activities in financial markets (see pages 7 - 12).
- Compliance with NSFR at a Group level, where any offsets between available and required funding are maximised, does not remove the fact that actual, or implied, NSFR cost impacts will be experienced on a standalone subsidiary level and by particular business lines and trading desks (see page 15) – where corporate structures are likely to offer fewer natural offsetting effects, leading to significantly increased costs for those actually transacting with clients.
- RSF applicable to variation margin for derivatives creates specific, significant effects, which are expected to meaningfully impact behaviours (see page 17).
- ASF factors incentivise banks to conduct repos < 6 months with Sovereigns/PSEs and non-financial corporates (see pages 13 - 14) – albeit that Sovereigns/PSEs are not overly enthusiastic to engage in such repo market transactions and that non-financial corporates represent a small, and inconsistent, funding source for the repo market.
- Uneven implementation, including a number of timing issues, will distort the market, as different firms' experiences of NSFR vary (see pages 14 - 15).
- Potentially helpful mitigating factors included within the structure of NSFR are very limited in their scope (see page 16).
- The impact of NSFR cannot be considered in isolation, but rather comes as a further part in an accumulation of pressures on the repo and collateral markets (see pages 19 - 20).

The ICMA ERCC stands ready to discuss all aspects of this topic, in order to best assist authorities with the necessary process of implementing this new element within the bank regulatory framework in a market sensitive manner.

## **Annex:**

For further information, the following annex pages provide more detailed explanation of a number of aspects pertinent to the consideration of the impacts of the NSFR on repo and collateral markets:

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**NSFR Background:**

On 31 October 2014, the BCBS issued the final standard for the NSFR, which will become a required minimum liquidity standard by 1 January 2018. Yet whilst the BCBS' standard is an agreed international standard, it nevertheless needs to be implemented in various national and regional rules.

In the case of the EU the NSFR is to be implemented through provisions in the Capital Requirements Regulation ("CRR"). Currently the CRR contains "Stable Funding" provisions, but these are far less stringent than the requirements set out in the BCBS' NSFR.

On 17 December 2015, the European Banking Authority ("EBA") published its report on the Impact Assessment and Calibration of the NSFR, recommending the introduction of the NSFR in the EU to ensure stable funding structures. The EBA recommended that the NSFR should be applied on a consolidated and individual basis, with sub-consolidated requirements being subject to a competent authority's decision. The EBA's analysis did not find strong statistical evidence of significant negative impacts of the NSFR on bank lending, financial assets markets or trading book positions. Whilst generally finding that the calibration and definition adopted in Basel fit well with the European banking system, the EBA also explained that certain EU specificities should be taken into account – in particular in the cases of trade finance, pass-through models, CCPs, centralised regulated savings and residential guaranteed loans.

The EBA's report will inform the work on potential legislative proposals on NSFR of the European Commission, which is due to put forward an EU NSFR proposal during 2016.

## **Repo and collateral support essential components of financial markets:**

Financial markets bring together buyers and sellers wishing to engage in transactions in cash, such as lending and borrowing or deposit taking, or cross currency exchanges; or in financial assets such as equities, bonds and derivatives. Amongst the essential components of financial markets are money markets, capital markets and derivatives markets. Money markets primarily comprise short-term (up to one year) cash or collateral oriented activities, whilst capital markets are based upon the longer-term (greater than one year) equity and bond (debt) market activities. Derivative markets provide an overlay to both money and capital markets, with a range of derivative contracts having evolved linked to the underlying cash and securities market products. Collectively these components comprise the major part of financial market and, in combination with each other, they service the needs of companies, governments and individuals.

Given their shorter-term nature, money markets provide investors with relatively lower risk, lower return ways in which to invest and manage their risks. They can access these markets with a higher degree of confidence in the liquidity of their positions, including by investing on an overnight basis. Borrowers meanwhile can equally benefit from the possibilities these markets present for the management of their liquidity needs. For instance, short-term debt can be issued, say in the form of commercial paper, to cover needs arising in respect of operating expenses, including payroll, or working capital. Market participants can also easily be involved on both sides of the money market, as their liquidity positions fluctuate – perhaps one day borrowing some cash to meet a required outbound payment and the next day finding themselves with some surplus cash to invest following a large payment receipt.

For bank treasurers, as for those in other firms, the money market plays a vital part in allowing them to manage their daily liquidity, without falling short and needing a more expensive loan or without holding excess funds and missing the opportunity of gaining interest on funds. Without access to this market banks would be wholly reliant on central banks to provide them with any required liquidity, or to take in any surplus liquidity. Repo plays a vital part in the money market, as it offers a secure way to transact, largely avoiding the principal risk experienced in unsecured money market activities. The liquidity of high quality liquid assets (HQLA), held for LCR purposes, depends upon a robust repo market able to support the conversion of HQLA securities for cash. Also, formulation of new transaction-based indices presupposes suitable transaction volumes in money markets. And repos are the mechanism for the transmission of monetary policy from central banks to the market.

And, at the same time, repo comprising an exchange of cash for collateral securities, also serves as the conduit for collateral market activity which has taken on an increasingly important role in financial markets (as further elaborated in the growing importance of collateral further below).

On the other hand, capital markets allow governments and corporates, including banks, to raise the long-term finance which they require, either as equity or debt. Investors in these instruments typically assume more risk than in the money markets and hence also enjoy higher returns. Whilst the borrowers long term prospects and credit standing are key factors in determining how high these returns need to be in order to attract the desired level of investment, another important factor which investors need to consider is the degree of liquidity risk which they will face in making their investment. In this regard the repo market again plays a vital role, as it is the possibility to lend out such securities as collateral, or to sell them to dealers, whose risk taking depends on their own access to repo markets, which is one of the key determinants of the extent of this investment liquidity risk.

Repo and collateral markets also play an essential part in the activities of buy-side firms. For short-term funds, particularly money-market funds, reverse repos provide an important, safe way in which to invest cash. Repos may be used as a way for investors to finance inventory, or to facilitate borrowing in case short positions need to be taken to provide risk hedges. Repos may also be as a way to enhance yields, by securely lending out securities from inventory in order to earn incremental returns. Increasingly repo activities are also essential tools for the liquidity management needs of investors – cash buffers being held for liquidity purposes can safely be invested in reverse repos; and repos can be used to quickly generate cash against investment portfolio holdings, allowing the meeting of short-term cash outflows whilst avoiding the need to actually sell down portfolios (or hold larger cash buffers). The need to manage increasing margin collateral requirements, being imposed in relation to essential derivatives hedging activities, is an important factor increasing the cash management needs of investors.

Derivatives markets activities meanwhile complement activities in the money and capital markets, better enabling the tailoring of transactions to manage, risks to factors such as interest rates, foreign currency exchange rates and counterparty credit. This again improves the overall effective cost of borrowing. And, once more, repo and collateral markets play a vital role, supporting and enhancing the functioning of derivatives markets. The use of repo, both to fund long positions and cover short positions in underlying securities; and to source collateral as margin and the availability of a collateral funding curve, is fundamental to the hedging and pricing of derivatives – which are the essential tools of risk management for both financial intermediaries and end-users of the financial markets.

Collateral meanwhile is an essential element in the risk management of CCP exposures, either in relation to the provision of initial margins, required to cover exposure to the closing out of positions in case of counterparty default, or variation margins, required to cover daily fluctuations in the value of open positions. Both these components are standard and essential elements in the risk management processes of those CCPs involved in clearing derivatives, and new regulations agreed at international level are moving the derivative market to equally utilise these two margin components in relation to non-CCP cleared derivatives. Furthermore, CCPs themselves depend upon the repo market as a safe way to invest cash margin receipts, against high quality collateral; and as a way to support the rapid realisation of collateral in case this needs to be sold responsive to a default.

### **Key functions of the repo market:**

The repo market is pivotal to the efficient functioning of financial markets. A liquid and efficient repo market is a necessary precondition for an efficient functioning bond market which, in turn, is crucial to lowering issuer costs (both government and corporate) and reducing portfolio management risks for end-investors. More broadly, the repo market promotes the more efficient use of available tradable stock for collateral management, increasing the speed and efficiency of the settlement process, and mitigating disorderly or volatile price action of narrowly held bonds. Key repo market functions are:

- 1. Low-cost, widespread access to funding:** Repo represents a source of low cost funding which, because of its collateralised nature, can (a) extend more easily to counterparties that have limited access to unsecured funding; and (b) can be used to secure longer term funding than typically is on offer in unsecured markets.
- 2. Bond Market Liquidity Regulator:** Liquidity support is hugely important to the efficient functioning of bond markets, which are typically less liquid than equity or foreign exchange markets. For issuers (both corporate and government), good liquidity lowers interest payments: for end-investors, it reduces the cost of managing portfolio risk. The repo market acts as a bond market liquidity regulator of sorts, responding to shortages of bonds by automatically raising the return offered to bondholders for releasing scarce stock into the market, and lowering the return when excess demand has been satiated. Aside from directly supporting bond market liquidity through regulating the amount of tradable stock, this function provides important guidance to issuers about liquidity conditions across their respective bond maturity curves. Many regular issuers (governments, supranational and larger corporates) appreciate the value in supporting liquidity across their respective maturity curves, and the information from liquid repo markets enables them more efficiently and cost effectively to protect the liquidity of their bond curves. The role repo plays in helping to iron out short-term demand-supply imbalances in the bond market contributes to more stable valuations of government debt and smoother, more consistent yield curves, which are essential for the accurate pricing of other financial instruments, and thus the efficient allocation of capital by financial markets. In this way, repo also acts as a force against disorderly market conditions that can occur if the tradable supply of a particular bond is held with a very small number of investors, and thus “squeezed”.
- 3. Primary Dealer Support:** Primary dealers are significantly exposed to market risks through their role in allowing end-investors to trade against their balance sheets in all market conditions, which provides crucial liquidity support to bond markets. Repo plays a very important role, both in facilitating their ability to manage this risk and in lowering their operational costs. In particular, the repo market allows primary dealers to post continuous bids and offers without having to hold large inventories of stock. In addition, the repo market enables primary dealers to manage more efficiently the significant market risk their balance sheets are exposed to, both because of their commitments to post continuous bids and offers across the yield curve and their support for primary issuance. For example, a primary dealer underwriting the syndication of a new issue may sell a bond of equivalent risk, borrowed from the repo market, in order to protect its downside and ultimately lower the cost of its insurance to the issuer.

4. **Additional Benefits to Bond Holders:** Repo markets allow natural holders of bonds to extract additional value from otherwise inactive inventory holdings of bonds. This enhancement of the value that can be extracted from bond holdings tends to raise their demand and ultimately tends to lower issuer interest costs.
5. **Support for Central Bank Liquidity Management:** The collateral management framework necessary to support this market also indirectly provides support to central bank liquidity management, which is largely effected through repo, as it uses the same framework. Central bank repo feeds seamlessly into the commercial repo market.
6. **Hedging and Pricing Derivatives:** An active repo market is an absolute prerequisite for liquid markets in derivative instruments. The use of repo, both to fund long positions and cover short positions in underlying securities; and to source collateral as margin and the availability of a collateral funding curve, is fundamental to the hedging and pricing of derivatives – which are the essential tools of risk management for both financial intermediaries and end-users of the financial markets, including official debt and reserve management agencies.
7. **Preventing Settlement Failures:** Repo plays a critical role in supporting the day-to-day operational efficiency of securities markets by allowing issues to be borrowed in order to ensure timely onward delivery, where short positions have arisen unintentionally, usually because of unexpected lags between inward and outward deliveries of securities, infrastructure frictions or the tight supply of particular issues.
8. **Permitting Faster Settlement Times:** The role of repo as a means of borrowing securities has been, and will continue to be, crucial in allowing settlement periods to be shortened in order to reduce systemic risk in securities settlement systems. Faster settlement leaves less time for delivery problems to be corrected and therefore requires an efficient source of securities borrowing to prevent delivery failures. As required by the EU's CSD Regulation, standard bond settlement periods across the EU have been compressed to T+2.
9. **Collateral Management:** Trading in the repo market is key to the valuation and management of collateral, and allows collateral resources to be more fully mobilised and efficiently allocated. Collateral management is becoming ever more important. Demand for collateral for use in payments and settlement systems, as well as in the exchange-traded and OTC derivatives markets, is being compounded by regulatory pressure on market users to hold larger liquidity reserves and make greater use of (collateralised) CCPs. At the same time a loss of confidence in some sovereign debt is creating uncertainty over the future supply of high-quality collateral.
10. **Allowing More Efficient Employment of Capital:** The global economic impact of the increasing regulatory risk capital charges introduced since the 1980s was mitigated by the more efficient use of capital that was allowed by the underlying shift from unsecured to secured financing. The capital efficiency of repo will become even more important in the future as regulators increase capital charges and impose new liquidity requirements.

### **The growing importance of collateral:**

Well before the 2007 financial crisis the use of collateral to protect against counterparty risk was common practice in the repo markets. Helped by Basel II reducing the practice of unsecured interbank lending, the repo markets had been created by central banks on the continent (France and Belgium); and throughout the late 1990's all other central banks in Europe endorsed and encouraged repo transactions. Since then the use of various types of collateral has developed and the central bank community's range of eligible collateral for the purpose of liquidity provision within the Eurozone has expanded to marketable and non-marketable assets.

The importance of collateral has thus grown over many years, but has accelerated significantly since the advent of the financial crisis in mid-2007. This is in no small measure related to the shift in risk appetite of market participants, with an increased demand amongst them to secure their credit risk exposures through the taking of high quality collateral. Official policy makers have also significantly fuelled the demand for high quality collateral as they have advanced steps to make markets more robust, to reduce systemic risk and help mitigate the risks of any future financial crises.

Amongst examples of these increasing demands are:

- increased focus on covered bond issuance by banks, secured against high-quality mortgage pools, as against senior unsecured issuance;
- increased use of repo funding to finance assets, including in context of an increase in the use of central bank financing;
- Basel requirements, translated in the EU through the CRR; introducing the holding of liquidity stress buffers – collateral assets to satisfy these requirements comprise a short list of high-quality liquid assets (HQLA);
- the shift of standardised OTC derivatives to CCP clearing, as required in the EU by EMIR, which gives rise to demands for significant amounts of initial margin; and
- increased requirements to margin any bilateral OTC contracts (outside of CCP arrangements), incentivised by penal treatment of uncollateralised exposures in the EU CRR/D requirements.

With the equivalent G20 agenda demanding ever more collateral, including the need to collateralise bilateral trading between the buy & sell side, coupled with the downgrade of a substantial part of previously reasonable good collateral, the pressure to widen the collateral base is on.

Given the competing demands that exist for the use of collateral assets, the management of collateral needs to encompass the deployment of optimisation techniques. These aim to ensure that the available collateral is utilised as effectively and efficiently as possible. This will be best achieved in case minimum acceptable collateral requirements are clearly stated and, wherever appropriate, harmonised, taking due account of the different classes of potential collateral assets. At the same time, although collateral is a good mitigating tool to reduce counterparty risk, there ought also to be focus on how to reduce the risk in the system. Netting through fixed income CCPs is such a measure. Risk reduction tools, like compression in the OTC derivatives markets, are another.



**Repo and collateral markets – the heart of the financial market system:**

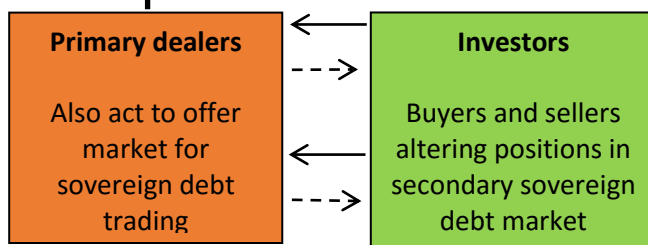
Repos underpin longer term capital market financing, having a direct role in supporting the trading of debt and equity and associated implications for the cost of originating financing in these markets. Having a more efficient and robust repo market leads to lower long-term financing costs and hence benefits real economy borrowers.

The following is a diagrammatic illustration of these relationships, based on the case of government bond financing:

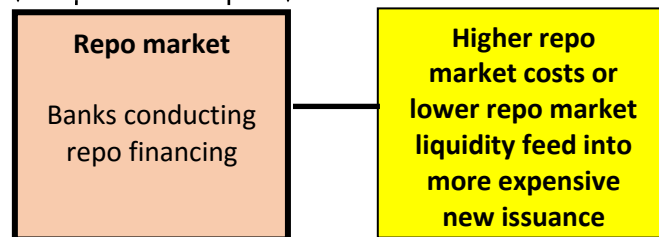
Origination



Secondary trading



Financing



—————> Cash  
 - - - - -> Securities

- New issue price reflects secondary trading prices for existing issues
- Secondary trading price depends upon the cost for the dealer to finance positions (long or short) taken to satisfy demand
- Financing cost for dealer set by repo market cost to lend or borrow sovereign securities

## Analysis of BCBS NSFR in the context of repos and collateral:

The NSFR is defined as the amount of available stable funding (“ASF”) relative to the amount of required stable funding (“RSF”). The ASF is defined as the portion of capital and liabilities expected to be reliable over the time horizon considered by the NSFR, which extends to one year. The RSF calculation is a function of the liquidity characteristics and residual maturities of the various on- and off-balance sheet assets held by a specific institution. The ratio should be equal to at least 100% on an on-going basis.

$$\text{ASF} / \text{RSF} \geq 100\%$$

Repos generate ASF, the proportion being dependent on residual maturity and counterparty type. Reverse repos generate RSF, the proportion being dependent on residual maturity, counterparty type and collateral quality. However, there is a certain amount of asymmetry between repos and reverse repos depending on the type of counterparty and the residual maturity of the transaction:

Residual maturities  $\geq 1$  year repo ASF & reverse repo RSF proportions are:

- Symmetric for Banks & Other Financial Institutions (100%)
- Asymmetric for Non-Financials (100% ASF v. 65% RSF / 85% RSF)  
(the lower 65% RSF applies for counterparties with Basel risk weights  $\leq 35\%$  and 85% RSF otherwise)

Residual maturities  $\geq 6$  months (&  $< 1$  yr) repo ASF & reverse repo RSF proportions are symmetric (50%)

Residual maturities  $< 6$  months repo ASF & reverse repo RSF proportions are:

- Symmetric for Sovereigns & PSEs (50%); Non-Financial Corporates (50%); and Central Banks (0%)
- Asymmetric for Retail & Small Business Customers (0% ASF v. 50% RSF)
- Asymmetric for Banks & Other Financial Institutions (0% ASF v. 10% RSF / 15% RSF)  
(the lower 10% RSF applies for “Level 1” collateral and 15% RSF for other collateral asset types)

Residual maturities	< 6 months		$\geq 6$ months and < 1 year		$\geq 1$ year	
	Repo ASF	Reverse RSF	Repo ASF	Reverse RSF	Repo ASF	Reverse RSF
Sovereign/PSE	50%	50%	50%	50%	100%	65%/85%
Non-fin corp.	50%	50%	50%	50%	100%	65%/85%
Central Banks	0%	0%	50%	50%	100%	100%
Bank/financial	0%	10%/15%	50%	50%	100%	100%
Retail & small	0%	50%	50%	50%	100%	65%/85%

In addition, it needs to be considered that unencumbered assets, such as cash trading desk positions, will be subject to RSF. The scale for these assets is related to HQLA (“high quality liquid assets” as defined in the Basel Liquidity Coverage Ratio, “LCR”), with the applicable RSF proportions being:

- 5% RSF for Level 1
- 15% RSF for Level 2A
- 50% RSF for Level 2B
- 85% RSF for non-HQLA (not in default and  $> 1$  year)
- 100% RSF for other assets

Where such assets are funded through the proceeds of repo financing transactions, the minimum NSFR requirement will create the need to manage gaps between the ASF generated by such financing transactions and the RSF for the applicable funded asset.

## Impacts of NSFR in the context of repos and collateral:

The differences in treatment linked to type of counterparty and residual maturity dictate that banks subject to required compliance with the NSFR will all face the same incentive structure regarding how they should seek to structure their repo and reverse repo activity. What is clear is that banks will be required to hold long-term “stable” funding against short-term reverse repo assets which will increase business costs. Accordingly, there will be a strong incentive for banks to tailor carefully their business profile given how the rules treat different residual maturities, counterparty types and collaterals. This will lead to changed market behaviour as banks seek to channel such activities to those combinations of counterparties and residual maturities which best fit within the NSFR construct. This is likely to create an element of famine and feast, as some counterparties are overlooked in favour of others, but unlikely to allow all market participants to smoothly fulfil their requirements with their first choice structures – for example because there will likely only be very limited scope available for transacting repos with Sovereigns, PSEs and non-financial corporates.

Looking at the Basel NSFR in more particular detail, for residual maturities:

1. < 6 months (which are the most typical) there is a strong incentive to transact repos with Sovereigns, PSEs and non-financial corporates (all 50% ASF), as opposed to with central banks, banks, other financials and retail & small business customers (all 0% ASF) – it is important to consider that a perverse incentive of this is the encouragement it gives for banks to repo their lower quality collateral to corporates, who are least well placed to manage taking on such risks;
2. < 6 months (which are the most typical) there is a strong incentive to transact reverse repos with central banks (0% RSF) or with banks and other financials (10%/15% RSF), as opposed to with Sovereigns, PSEs, non-financial corporates and retail & small business customers (all 50% RSF);
3. ≥ 6 months and <1 year repos with central banks, banks, other financials and retail & small business customers (all 50% ASF) are significantly incentivised compared to shorter term repos with these same counterparty types (all 0% ASF);
4. ≥ 6 months and <1 year reverse repos with central banks or with banks and other financials (all 50% RSF) are significantly dis-incentivised compared to shorter term repos with these same counterparty types (0% RSF, central banks, or 10%/15% RSF);
5. ≥ 1 year there is an incentive to transact reverse repos with Sovereigns, PSEs, non-financial corporates and retail & small business customers (all 65%/85% RSF), as opposed to with central banks, banks and other financials (all 100% RSF).

The competitive dynamic, as firms chase opportunities to transact with favoured counterparties, will lead to some degree of imbalance in the market. This will not just be because of the discrimination by favoured counterparty type but also because not all firms will in fact be acting under the same constraints. There are a number of reasons why this will be so. One such reason is timing, since not all firms will in fact be impacted by the NSFR in the same way at the same moment in time. It is an inevitable feature of implementing global standards that firms which fall under different regulatory constructs will face similar, but not identical, implementing requirements at different points in time. Within the EU the use of the CRR as the vehicle for implementing NSFR will help with this, since it is a directly applicable EU Regulation which will affect all applicable EEA banks and investment firms from whichever date is specified in the relevant CRR amendment. But this does not rule out the possibility that individual EU Member States implement rules or regulations beyond CRR, including different effective dates; and third country firms will quite likely not be impacted at the same time, their situation depending upon when their own lead local regulators (e.g. US, Japan, etc.) act.

Another important timing consideration stems from the fact that the market is dynamic and responds ahead of time, particularly when it comes to the fulfilment of known future requirements. So whilst the NSFR may be stated to apply as a binding requirement from the start of 2018 there will be a number of reasons why firms will act to be compliant before this time. An important part of this is market driven, with firms reacting to pressure from their own shareholders, in part responsive to competitive pressure from the action of other firms, to ensure that they have taken the necessary steps to comply well before the actual compliance deadline is reached. Of course to some extent this is simply prudent behaviour, as it would be rash, and indeed practically impossible, to wait up until the deadline applies and then need to try and effect significant changes overnight. But this also leads supervisors to pressurise firms to move to compliance at an early stage. Such action will be seen as a sign of a well-managed firm, whilst any sign of ill-preparedness will be seen as a sign of management deficiency. In consequence the official deadline for implementation is effectively moved forwards, yet the extent of these impacts will vary across countries with some firms thus finding themselves pressed to act sooner than others.

Another issue impacting the level playing field is structural, with not all banks subject to NSFR being organised in the same way. Different corporate structures may have a very significant effect, especially if not all regulatory authorities adopt consistent approaches regarding the application of the NSFR at group, as opposed to individual entity, level. This challenge is recognised in the text of the Basel NSFR, which says “The NSFR should be applied to all internationally active banks on a consolidated basis, but may be used for other banks and on any subset of entities of internationally active banks as well to ensure greater consistency and a level playing field between domestic and cross-border banks.” This also highlights another point relevant from the EU perspective, where the CRR is applicable to all EEA banks and investment firms rather than just those which are large and internationally active. Furthermore, different banking models will also create significant structural differences. In particular, those banks which hold a large amount of cash arising from stable retail deposits or operational deposits will, whilst still needing to fulfil applicable ASF requirements, benefit from the low RSF for such assets.

Much uncertainty also surrounds another vital factor which will significantly skew the playing field for some. From the regulatory perspective the NSFR applies to a firm (or group) as a whole, so the first and foremost challenge is to comply with this requirement. Assuming that this can be achieved without cutting out repo and collateral activities in so doing, the key question is what happens next in the determination of which business strategy to follow. In order to optimise the value of a firm it is necessary to assess the contribution made by different lines of business and this frequently involves the allocation of costs across business lines.

Assuming that firms chose to push down any incremental costs stemming from NSFR compliance to business, or even desk, level it is likely that many existing repo and collateral activities may look relatively less economic than other business activities. The upshot of this would then likely be to rebalance activity away from repo and collateral in order to try and boost aggregate returns. This potentially leads to very different outcomes compared to any firms which decide that they should centrally absorb, as an unallocated element of corporate overheads, any net incremental costs stemming from NSFR compliance. Nevertheless, even in case such an unallocated corporate overhead approach is pursued it is likely that over time there will be pressure on such firms to try and reduce such unallocated costs, which may well still lead to the same process of business model adjustment in pursuit of increased shareholder value.

## **Mitigating NSFR impacts in the context of repos and collateral:**

Given that it effectively achieves full elimination of RSF for the assets involved, the availability of netting is one essential way to potentially mitigate the impact of NSFR. Paragraph 33 of the BCBS NSFR text states that “Securities financing transactions with a single counterparty may be measured net when calculating the NSFR, provided that the netting conditions set out in Paragraph 33(i) of the Basel III leverage ratio framework and disclosure requirements document are met.” In the BCBS leverage framework these netting conditions are stated as follows “cash payables and cash receivables in SFTs with the same counterparty may be measured net if all the following criteria are met:

- (a) Transactions have the same explicit final settlement date;
- (b) The right to set off the amount owed to the counterparty with the amount owed by the counterparty is legally enforceable both currently in the normal course of business and in the event of: (i) default; (ii) insolvency; and (iii) bankruptcy; and
- (c) The counterparties intend to settle net, settle simultaneously, or the transactions are subject to a settlement mechanism that results in the functional equivalent of net settlement, that is, the cash flows of the transactions are equivalent, in effect, to a single net amount on the settlement date. To achieve such equivalence, both transactions are settled through the same settlement system and the settlement arrangements are supported by cash and/or intraday credit facilities intended to ensure that settlement of both transactions will occur by the end of the business day and the linkages to collateral flows do not result in the unwinding of net cash settlement.

These conditions describe a minimal approach to allowable netting, being focussed on the actual offset of physical cash settlements. This is the opposite end of the spectrum from the counterparty portfolio default netting which is supported under the provisions of the Global Master Repurchase Agreement (GMRA), together with its suite of applicable legal opinions, and similarly under other master agreements such as the Global Master Securities Lending Agreement (GMSLA). So it is helpful that the BCBS NSFR rules (and the BCBS leverage ratio framework) provide for SFT netting, but the extent of this mitigating factor is quite limited; and it would be quite conceivable to recalibrate these regimes by altering the decision regarding how much netting should be permitted.

Additionally, the BCBS NSFR provides, in paragraph 45, that for interdependent items, national supervisors have discretion in limited circumstances to adjust RSF and ASF factors so that they are both 0%. This is then an alternative provision under which the same effect as netting can be achieved, but the conditionality is strict. It may only apply where “asset and liability items, on the basis of contractual arrangements, are interdependent such that the liability cannot fall due while the asset remains on the balance sheet, the principal payment flows from the asset cannot be used for something other than repaying the liability, and the liability cannot be used to fund other assets.” Much discussion has taken place about different types of transaction which might be construed to come within the purview of this provision, such as short client facilitation, but it seems likely that there is little scope for flexible interpretation of paragraph 45’s conditionality. As such, it may be that negligible relief for repo and collateral related activities will be possible in this context, but this still warrants some more consideration.

As with the consideration of netting in mitigating the impact of the BCBS leverage ratio framework, this may force increased focus on the structure of repo and collateral contracts. In particular, equivalent economic outcomes may be achievable – using off balance sheet collateral versus collateral exchanges, as opposed to cash versus collateral, or by way of synthetic structures, such as total return swaps – at the same time as more favourable regulatory outcomes are achieved.

### NSFR impacts relating to collateral used in the context of derivatives:

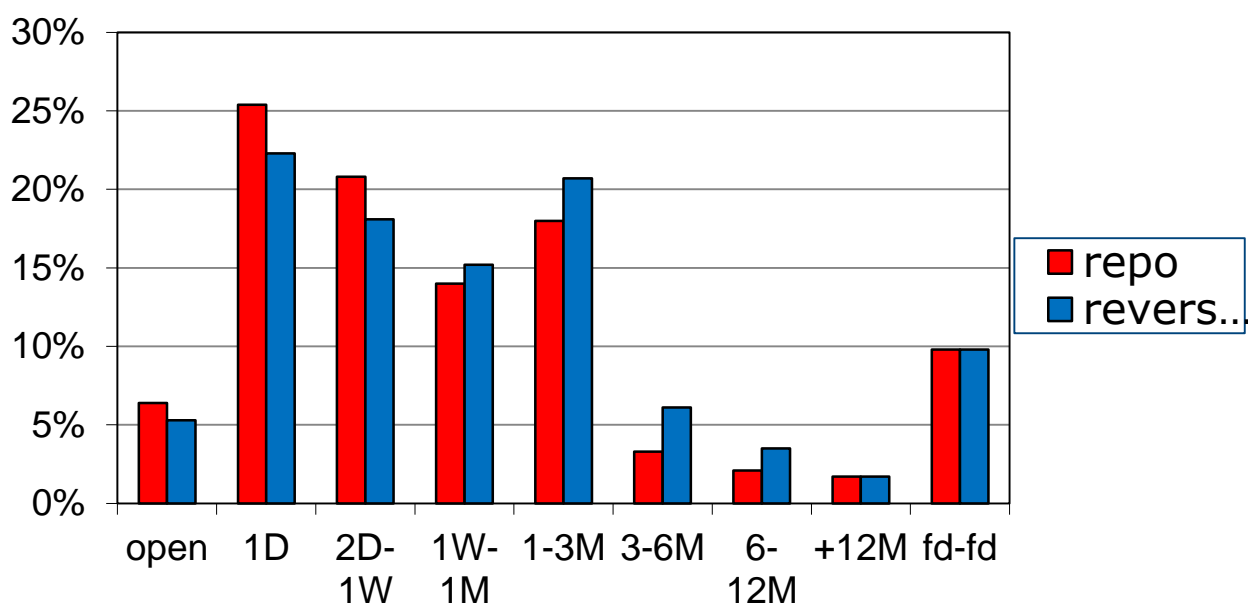
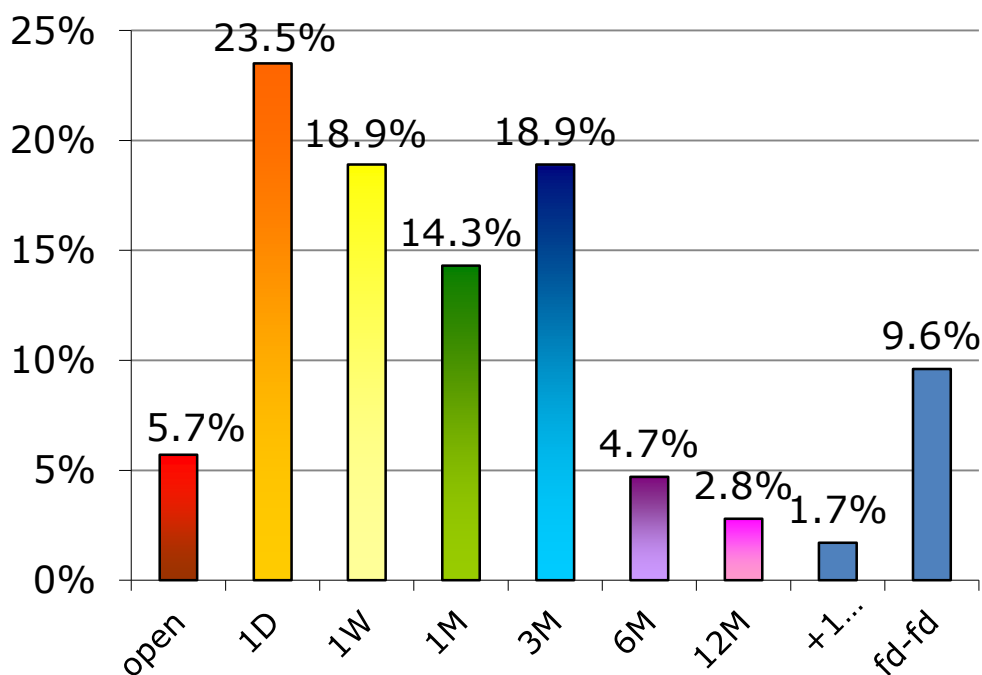
Under the NSFR, as adopted by the BCBS, gross variation margin posted will trigger 20% RSF. This will quite clearly generate repercussions within collateral markets, in terms of availability and/or cost. Furthermore, akin to the asymmetries described earlier in this paper, there will also be significant effects arising from asymmetry in the collateral treatment stemming from variation margin posted or received. For instance, the NSFR limits fundable collateral to cash collateral that is also nettable under the Basel leverage ratio conditions. Therefore, HQLA received as derivatives margin will not generate ASF whereas HQLA posted as derivatives margin does trigger RSF. Since the NSFR levels, and therefore the funding requirements, of firms will vary significantly depending on the collateral management strategy used these asymmetries are expected to meaningfully impact behaviours. The following table illustrates a range of outcomes associated with different collateral management approaches:

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Derivative NPV	€1,000mm	€1,000mm	€1,000mm	€1,000mm
Collateral	1,000mm EUR cash	1,000mm EUR cash	1,000mm HQLAs	1,000mm HQLAs
Use of Collateral	Invest in €1,000mm HQLAs	Reverse in €1,000mm HQLAs	Leave HQLAs unencumbered	Repo HQLAs for cash with a financial cpty for <6 months
Implied RSF	5%	10%	100%	100%
Balance Sheet Treatment	<ul style="list-style-type: none"> <li>■ Derivative receivable on B/S: 0</li> <li>■ HQLAs Firm Inventory on B/S: 1,000mm</li> </ul>	<ul style="list-style-type: none"> <li>■ Derivative receivable on B/S: 0</li> <li>■ Reverse repo agreement (with a financial cpty) on B/S: 1,000mm</li> </ul>	<ul style="list-style-type: none"> <li>■ Derivative receivable on B/S: 1,000mm</li> <li>■ Unencumbered HQLAs off B/S: 1,000mm</li> </ul>	<ul style="list-style-type: none"> <li>■ Derivative receivable on B/S: 1,000mm</li> <li>■ Cash on B/S: 1,000mm</li> <li>■ Repo agreement on B/S: 1,000mm</li> </ul>

### Analysis of the maturity profile of the European repo market:

The ICMA European repo market survey is performed every six months, providing analysis of the repo business outstanding at the survey date. The 30<sup>th</sup> such survey was published on 11 February 2016 and is available at <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/repo/latest/>

Amongst other details, the survey reveals the maturity profile of the European repo market, which can clearly be seen from the following depictions of the latest data to be predominantly six months or less.



## **The essential need for collateral fluidity:**

Whilst numerous studies have attempted to estimate whether there is an adequate supply of collateral to meet these rising demands or whether there might be a shortfall, inevitably nobody actually has the exact answer. Yet with the supply of safe assets dwindling at the same time as demand for them is rising, it is plainly essential that high-quality collateral be managed as a scarce resource. The ICMA ERCC considers that the aggregate amount of collateral is likely to prove large enough to meet the demands, but sees the risk of suffering from more localised demand-supply imbalances. These will arise in case it is not possible to ensure that the right amount of the right type of collateral is available at the right time, in the right place to meet applicable requirements.

Given this, the ICMA ERCC has already done much over the last couple of years to emphasise the importance of collateral fluidity, which allows collateral to move around the system to meet varying demand requirements across the financial markets landscape. Concretely, at the beginning of 2012, ICMA convened the Collateral Initiatives Coordination Forum (“CICF”), which was conceived as a joint trade associations’ body, in order to facilitate appropriate coordination across the private sector of all collateral-related initiatives. Whilst it has not proved easy to maintain the impetus for such a broad ranging body to act, this CICF initiative did lead to the production of the CICF’s [Collateral Fluidity White Paper](#), which was published on 7 November 2012.

A further ICMA ERCC paper, [Collateral is the new cash: the systemic risks of inhibiting collateral fluidity](#), was published on 3 April 2014. This describes the increasing importance of collateral and calls for regulators to consider the impact of financial regulation on the movement of collateral, highlighting the potential risks of inhibiting collateral fluidity. The paper explains why it is that achieving an adequate degree of collateral fluidity requires the simultaneous existence of robust and efficient settlements infrastructure (the “plumbing”), as well as bank funding desks that are able to source, price, manage, and mobilise collateral (the collateral “pump”).

Yet in the European markets both these elements evidence significant need for improvement. Notwithstanding the efforts made over many years, currently most visible in the process of transition to the use of T2S by many of the EU’s CSDs, the European market settlements infrastructure remains subject to many inefficiencies associated with its historic evolution in individual EU Member States. The ICMA ERCC is closely involved in work to address this, albeit that the European Commission has shockingly failed to fully involve the ERCC in its latest infrastructure review effort, being conducted by the newly formulated European Post-Trade Forum (“EPTF”). At the same time, the ICMA ERCC’s November 2015 study into the state of the repo market (see next page) records growing concern that the cumulative impact of various prudential and market regulations, along with extraordinary monetary policy, could be affecting the ability of the European repo market to function efficiently and effectively. Uncoordinated measures by public authorities are radically altering the short term secured financing market, degrading the performance of the pump, which may even compromise the success of regulatory measures such as EMIR which depend on the fluidity and availability of collateral.



## **Cumulative effect on repos and collateral when adding NSFR to other requirements:**

In November 2015, the ICMA ERCC launched a study "[Perspectives from the eye of the storm: the current state and future evolution of the European repo market](#)", which looks at how the repo market in Europe is changing in response to regulatory pressures. This study is a qualitative assessment of the current state and future evolution of the European repo market, based on interviews with a wide range of market participants and stakeholders, including bank repo desks, fund managers, inter-dealer brokers, electronic trading platform providers, agency lenders and triparty agents. The study records growing concern that the cumulative impact of various prudential and market regulations, along with extraordinary monetary policy, could be affecting the ability of the European repo market to function efficiently and effectively. This could, in turn, have wider repercussions for the broader capital markets and so for the real economy.

In chapter 1 of the study, regarding the various BCBS rules, there is a section specifically regarding NSFR, which starts with the following quote from a repo trader "Once NSFR comes in, then it's game over. We can all go home." It then goes on to report that "Of the four tenets of Basel III, none seems to cause as much consternation and existential angst in the interviews as much as the prospect of the implementation of the Net Stable Funding Ratio (NSFR) before 2018."

Whilst commenting on the expected impacts of NSFR, the study notes that "The potential implications for short-term funding markets are difficult to estimate, particularly as every bank's funding structure and counterparty make-up will be different." And then, following some further reflections on NSFR impacts, this section of the study closes with the following sentences: "As one repo desk manager explained, the irony of NSFR is that it will make banks less reliant on the relatively stable and predictable funding provided by financial institutions, and more dependent on relatively flaky non-financial funding flows. However, what seems to cause the most disquiet among interviewees is the uncertainty of how NSFR will interplay with the other tenets of Basel III, not least the Leverage Ratio, and to what extent perseverance with matched-book trading will remain a commercially viable option."

A further important complication is that there is an ongoing effort to introduce bank structural reform, leading to some greater degree of separation of trading type activities from banking (loan and deposit) type activities. This process is progressing in the UK, and several other EU Member States (including Belgium, France and Germany) as well as other countries, including the United States, have already enacted, or are in the process of enacting, structural reforms for their respective banking sectors, especially to address concerns related to the largest and most complex financial institutions. Responsive to this, on 29 January 2014, the European Commission proposed an EU Regulation on structural measures improving the resilience of EU credit institutions, which is still being debated by the co-legislators. Linked to NSFR, the concern is that these structural reforms will lead to significant extra funding requirements in relation to trading activities which get moved to entities separate from currently co-existing banking activities.

# Appendix:

## ICMA ERCC Background

Since the early 1990's, the [International Capital Market Association](#) (ICMA) has played a significant role in promoting the interests and activities of the international repo market, and of the product itself.

The European Repo Council (ERC) was established by the ICMA in December 1999, to represent the cross-border repo market in Europe and has become the industry representative body that has fashioned consensus solutions to the emerging, practical issues in a rapidly evolving marketplace, consolidating and codifying best market practice.

Consistent with the fact that it is repo desks which can increasingly be equally considered to be collateral desks, it has been the ICMA ERC which has served to guide the ICMA's work on collateral, providing support to its broader efforts and driving many of the ICMA's specific collateral related initiatives. Thus, just as repo and collateral are intimately related in the market, so the ICMA ERC and the ICMA's work on collateral are also intimately related. In recognition of these intimate relationships, with effect from 4 December 2015, the ICMA ERC has been renamed as the ICMA ERCC, the "[European Repo and Collateral Council](#)".

The ICMA ERCC also plays a significant role in nurturing the development of the repo market and supporting its wider use in Europe, particularly among banks, by providing education and market information. The ICMA [bi-annual survey of the European repo market](#) has become established over more than a decade as the only authoritative indicator of market size and structure and the dominant trends.

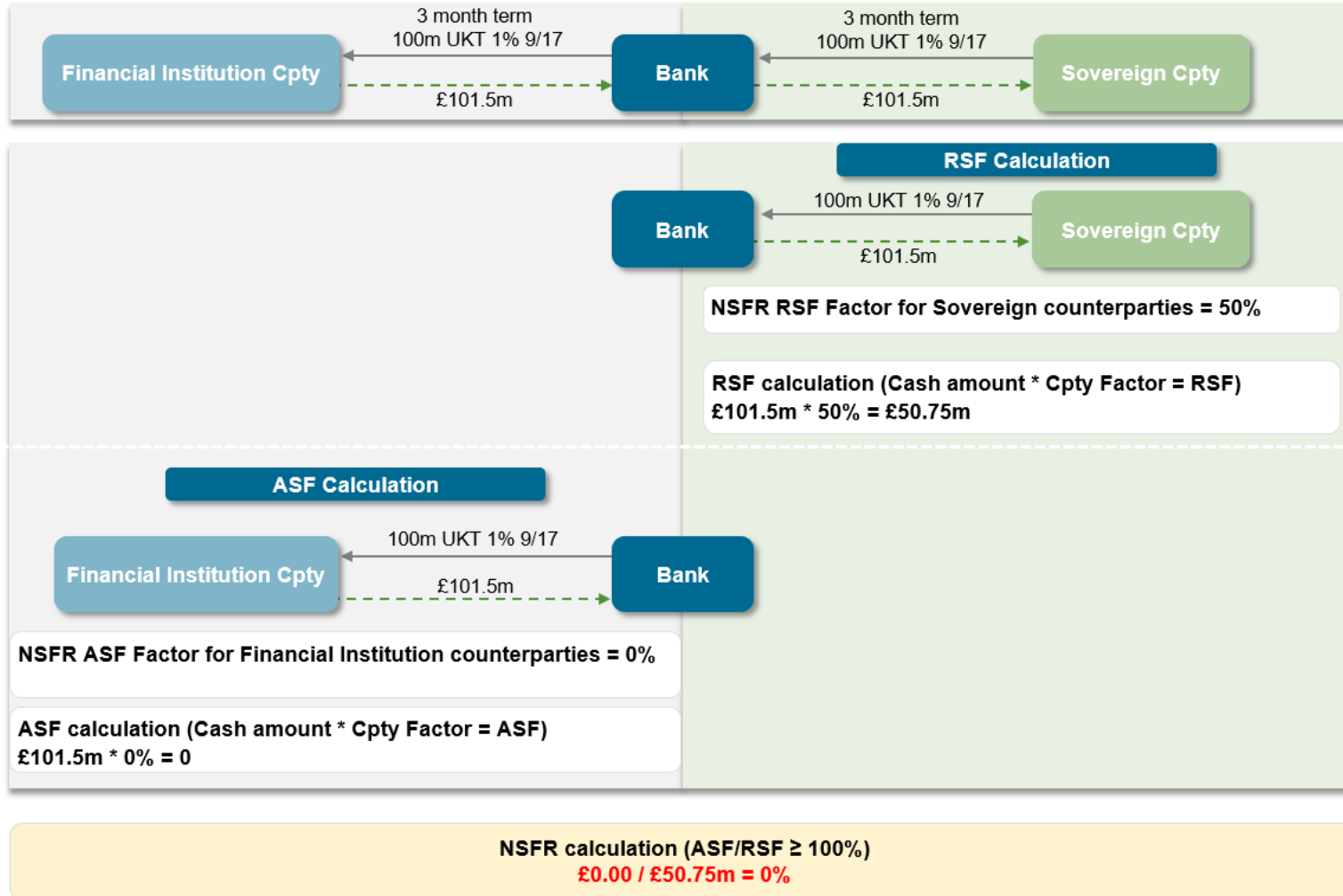
ICMA is an active force in the standardisation of repo documentation. [The GMRA](#) is the most predominantly used standard master agreement for repo transactions in the cross border repo market.

[Membership of the ERCC](#) is open to ICMA members who transact repo and associated collateral business in Europe. The ICMA ERCC currently has about 90 members, comprising the vast majority of firms actively involved in this market.

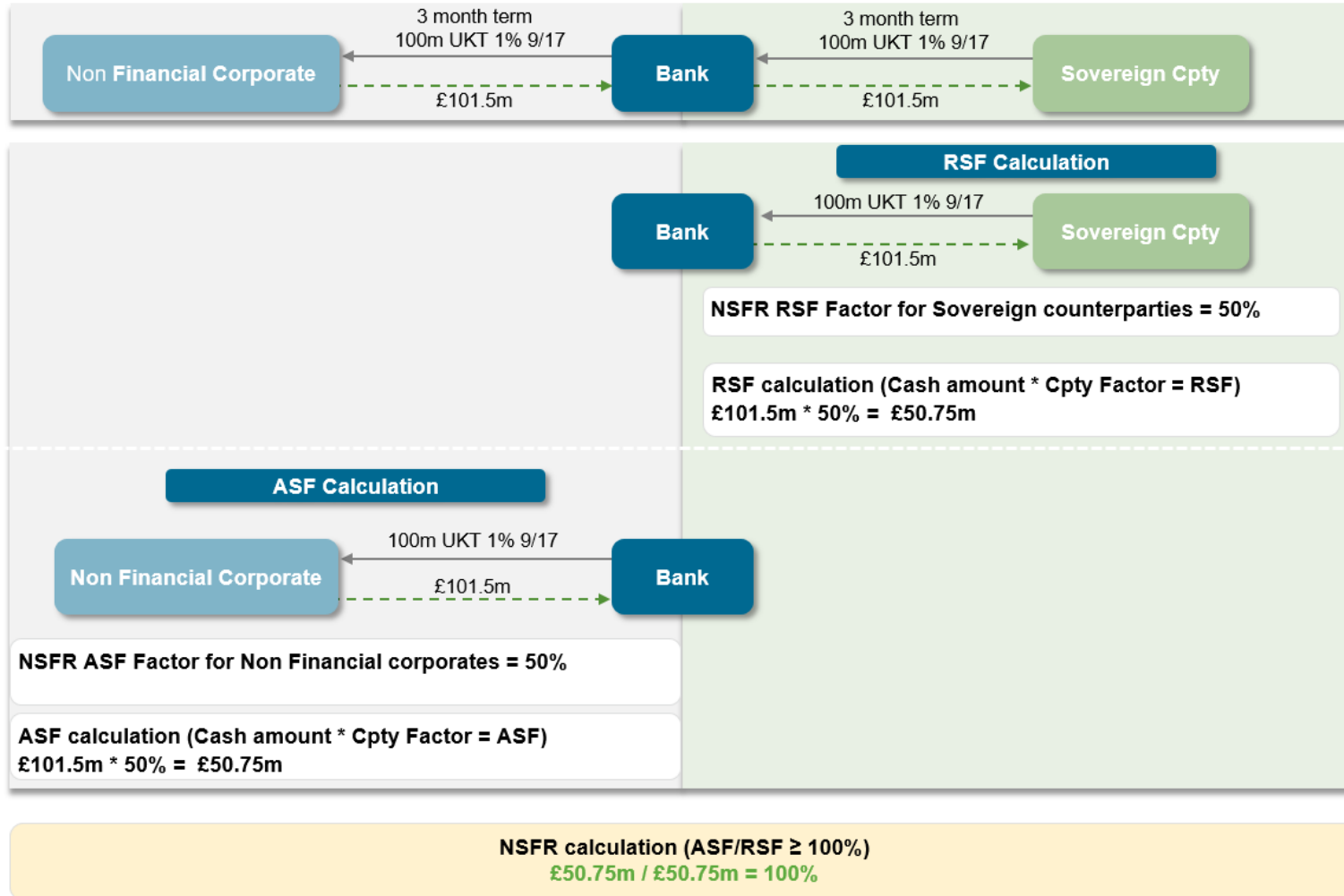
## **Attachment 2**

**NSFR: Example Trades  
Unencumbered Assets (Cash Trades) & SFTs**

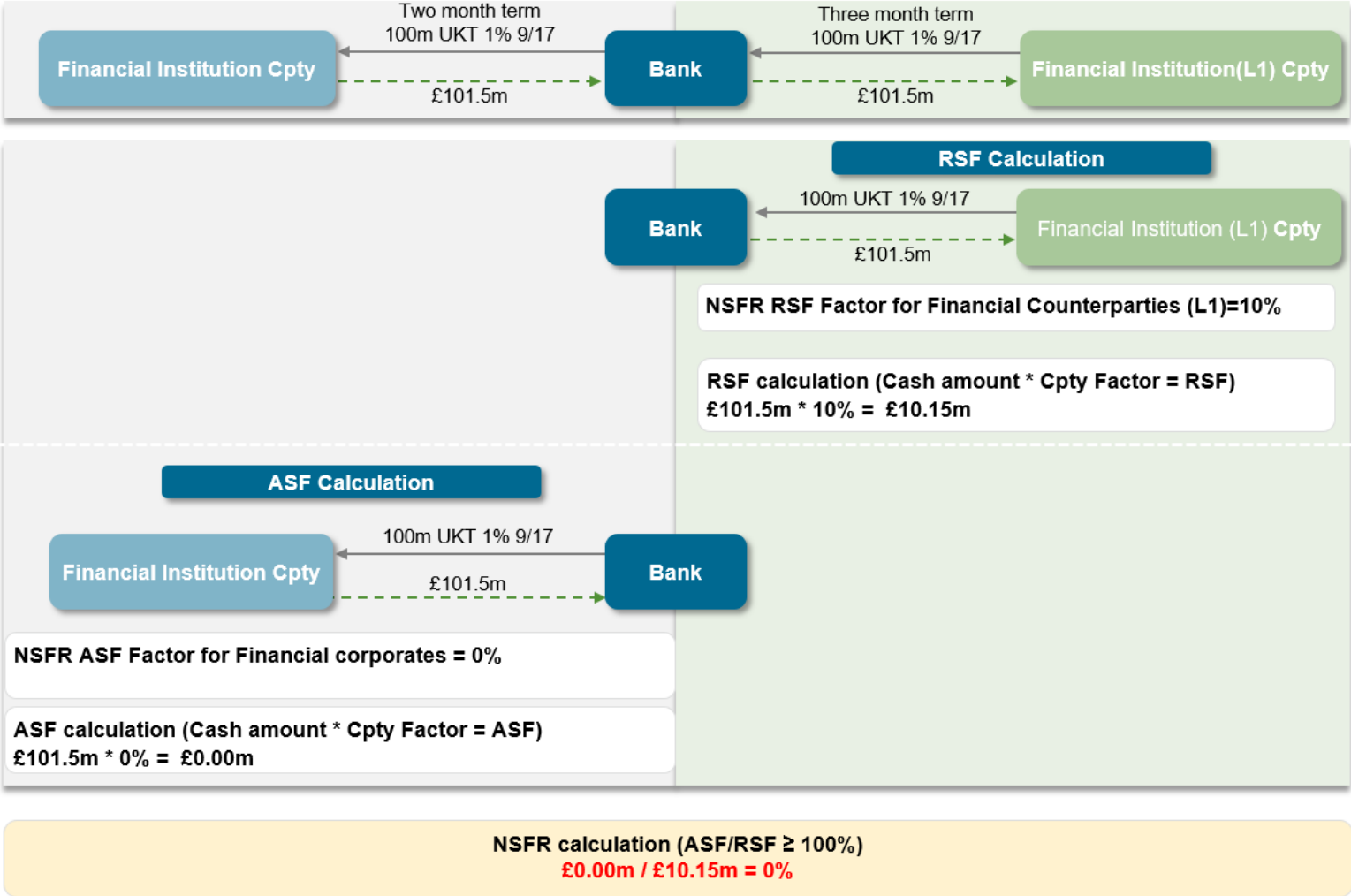
## NSFR Example #1: Sovereign vs Financial



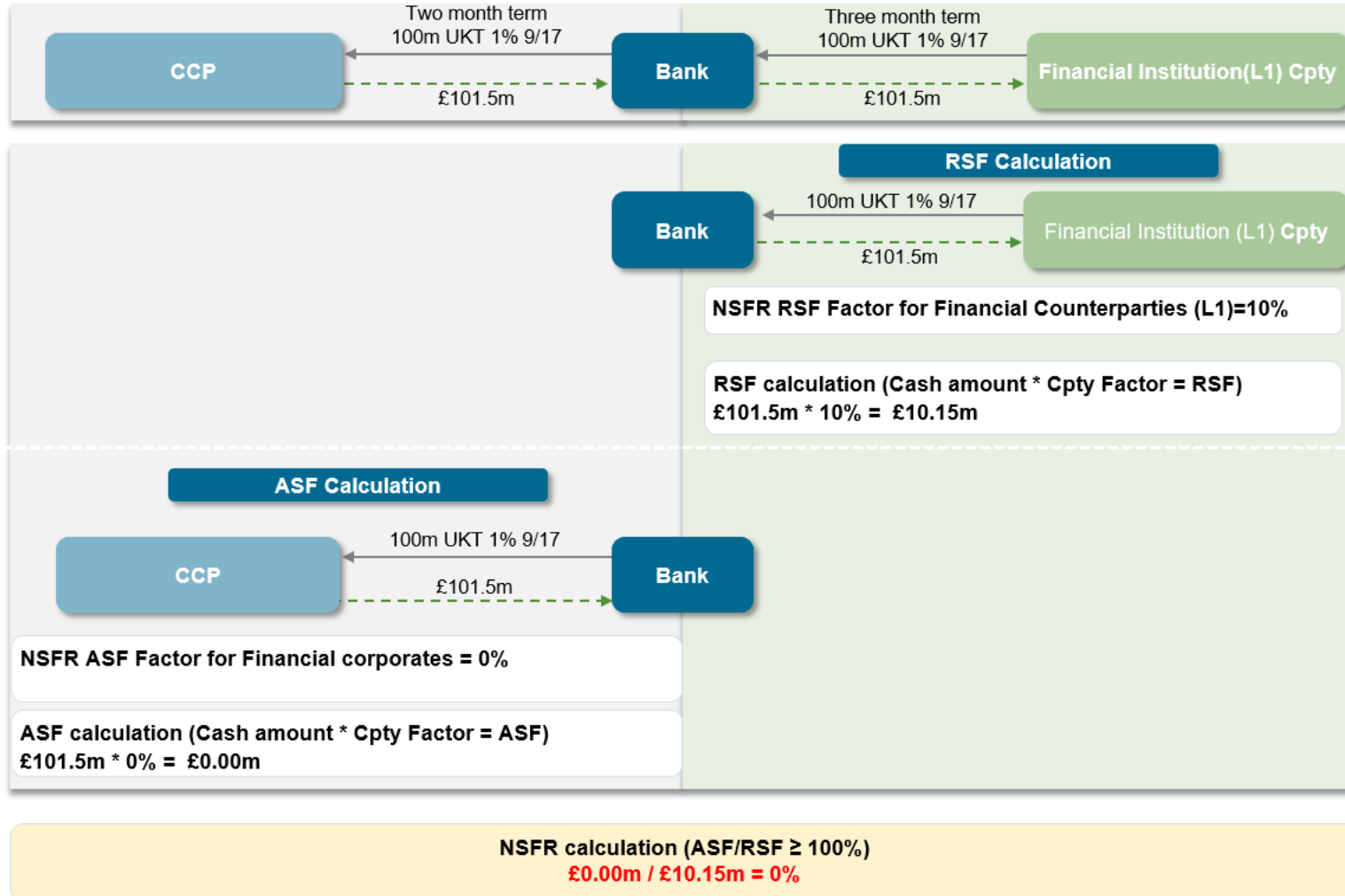
## NSFR Example #2: Sovereign vs. Non-Financial



### NSFR Example #3: Financial (L1) vs. Financial

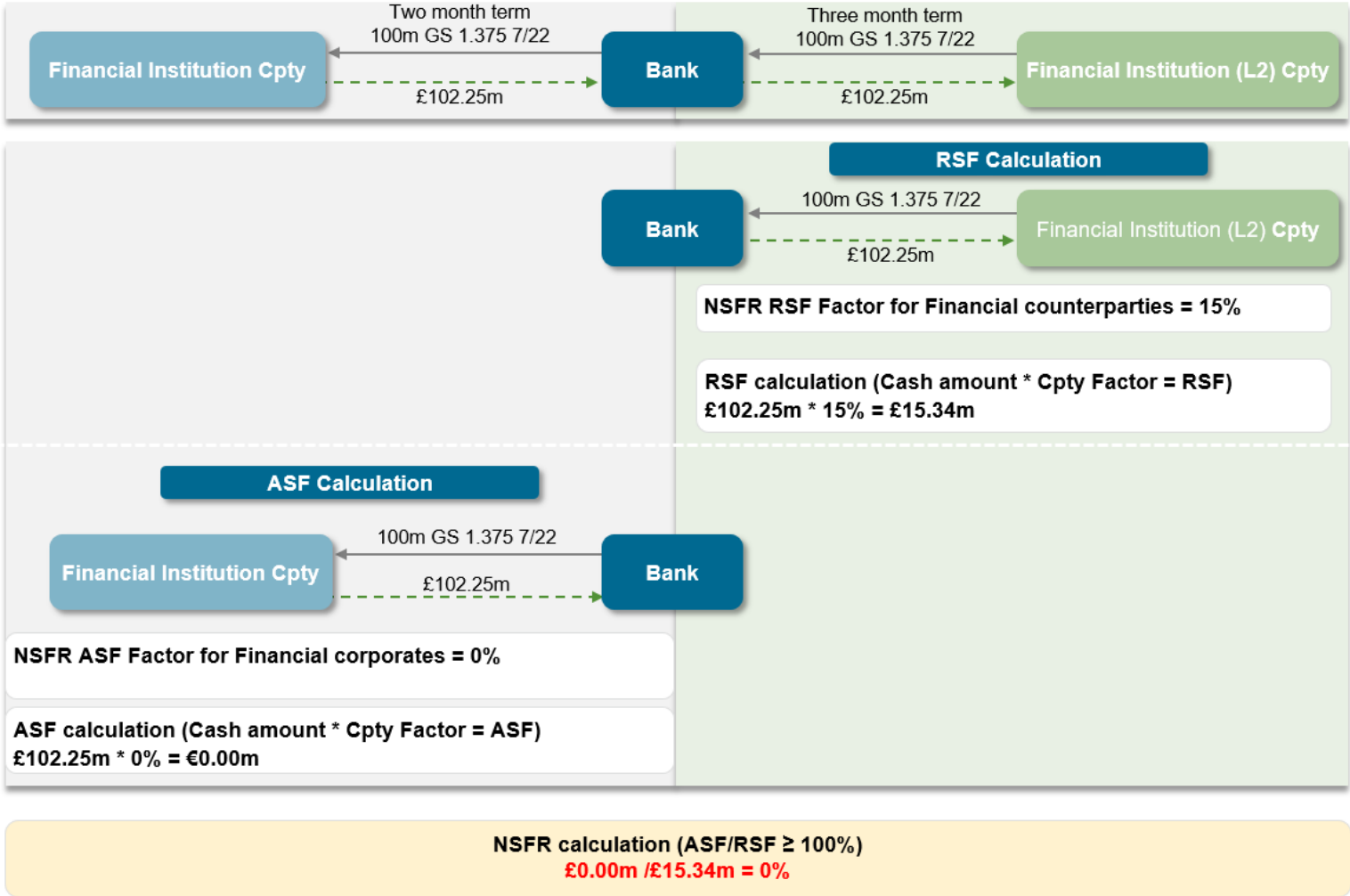


## NSFR Example #4: Financial (L1) vs. CCP (Financial)

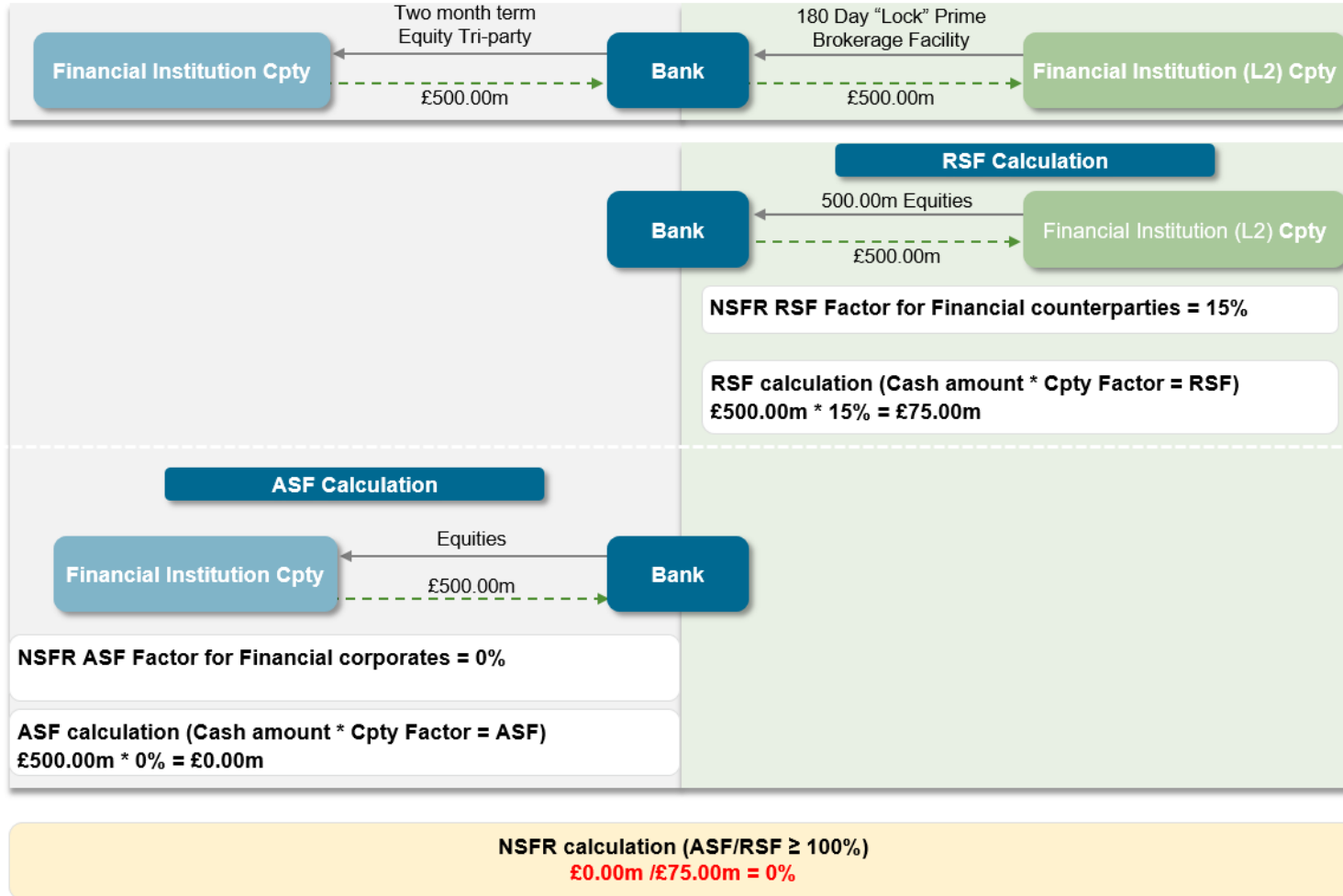




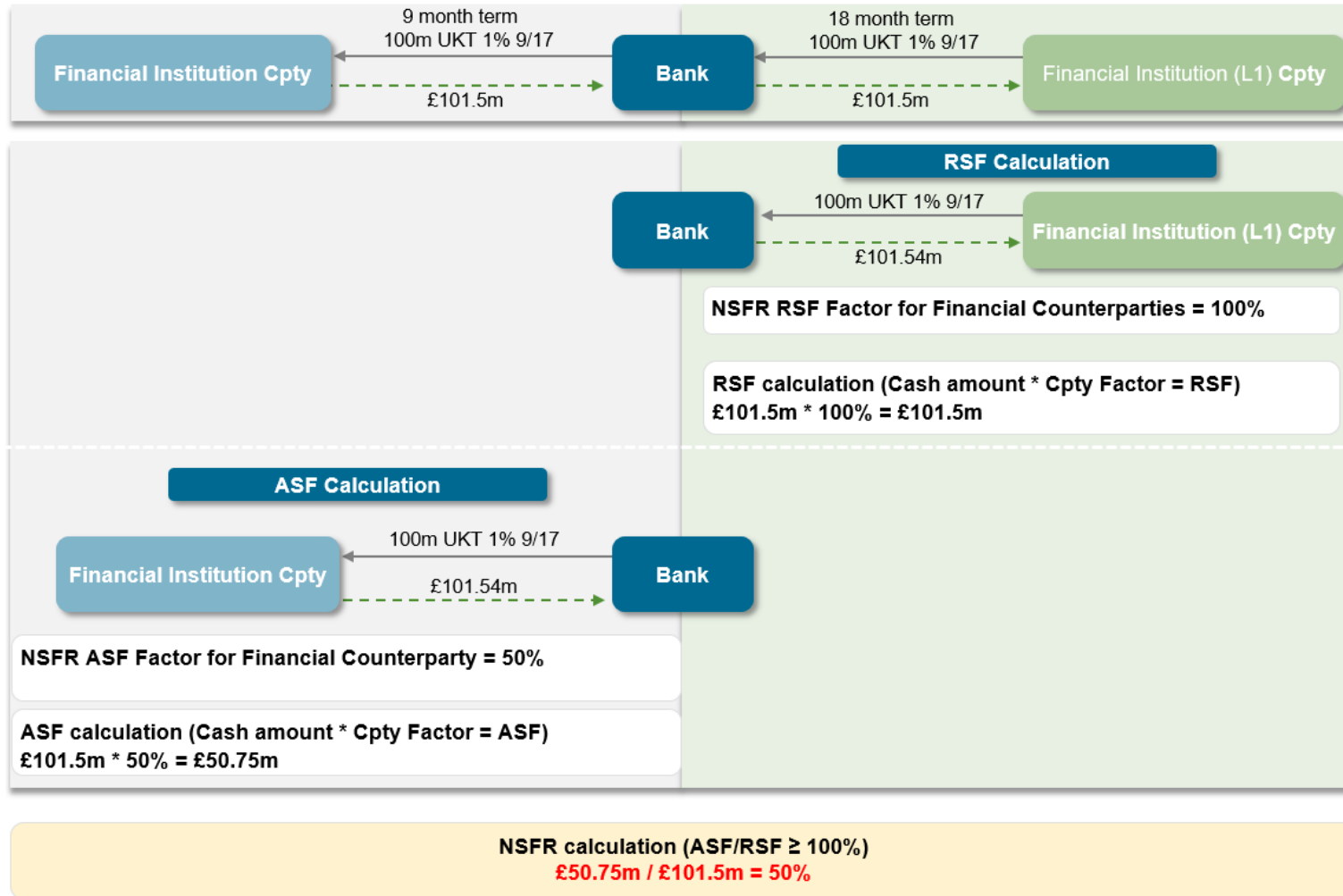
### NSFR Example #5: Financial (L2:Credit) vs. Financial



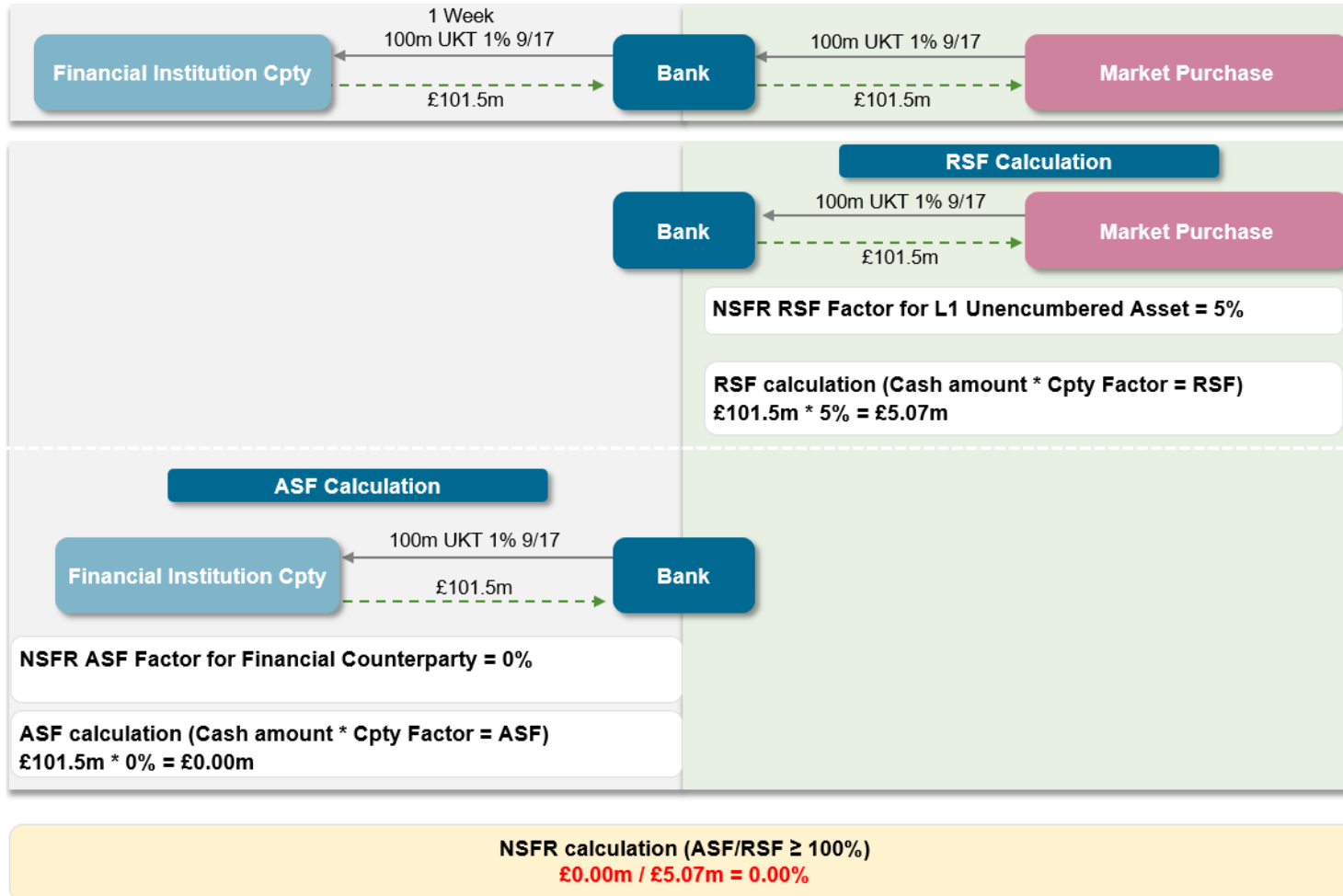
## NSFR Example #6: Financial (L2:Equity) vs. Financial



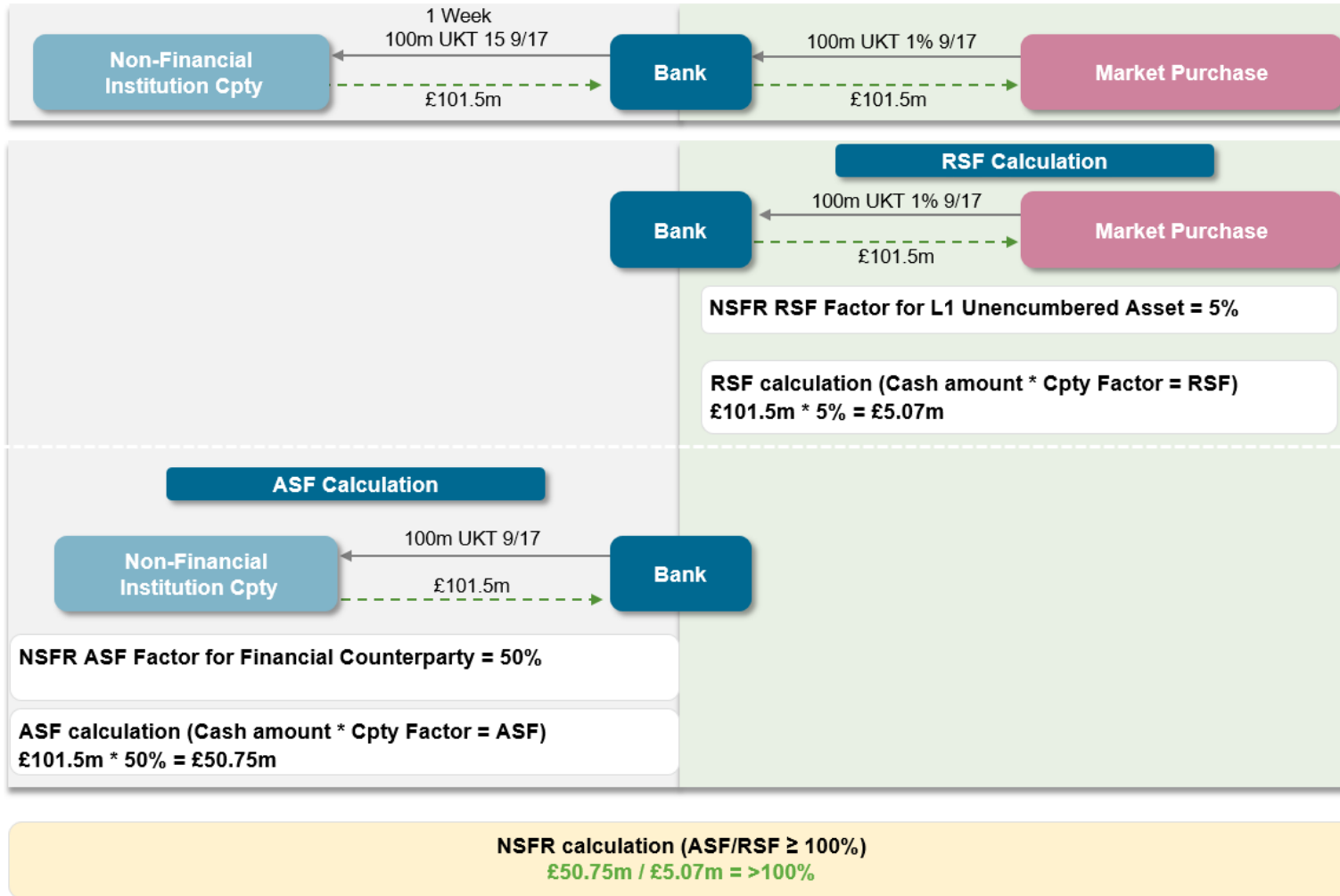
## NSFR Example #7: Financial (L1) vs. Financial – Long term



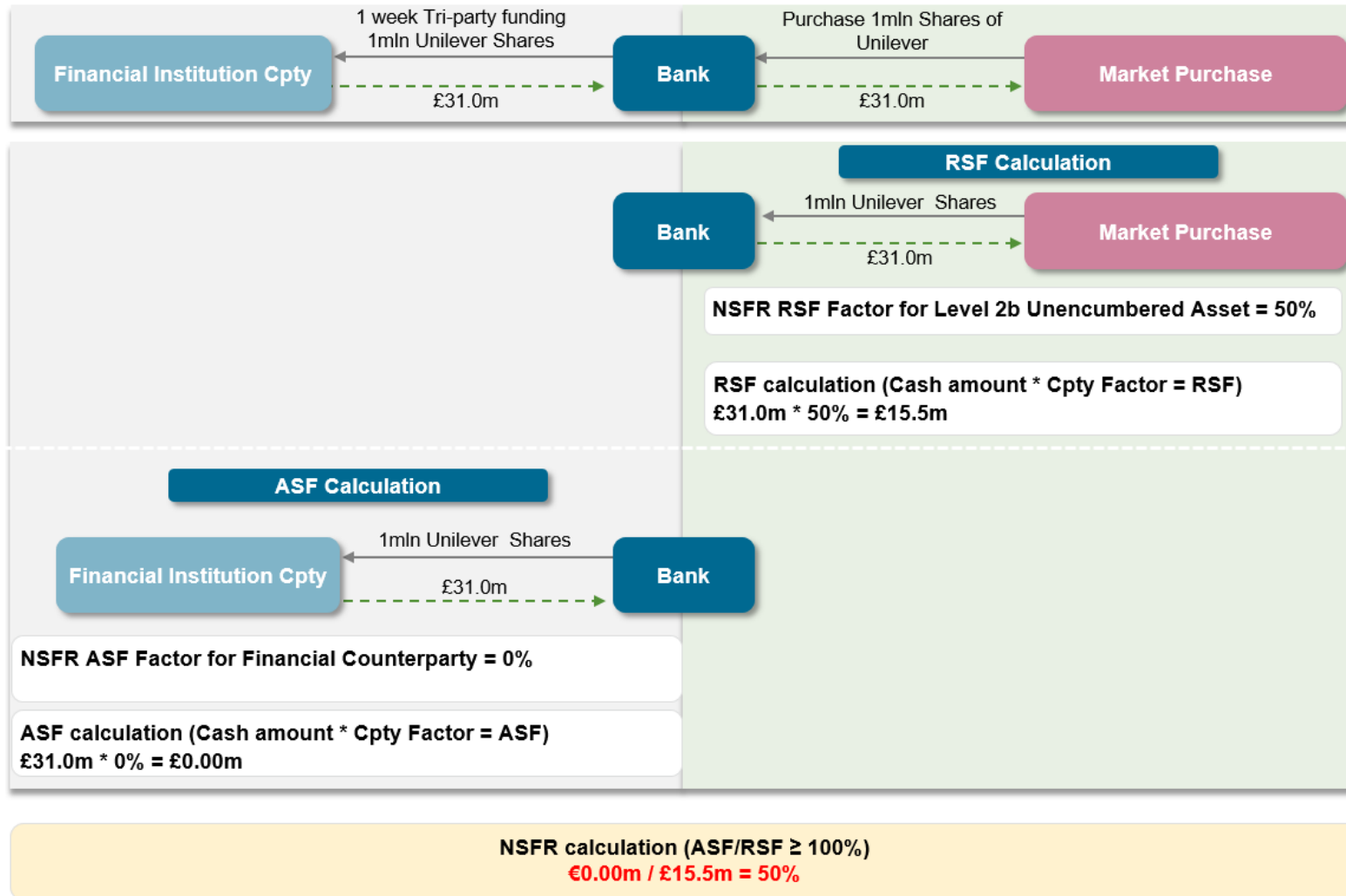
## NSFR Example #8: Unencumbered Assets – Level 1 vs FI



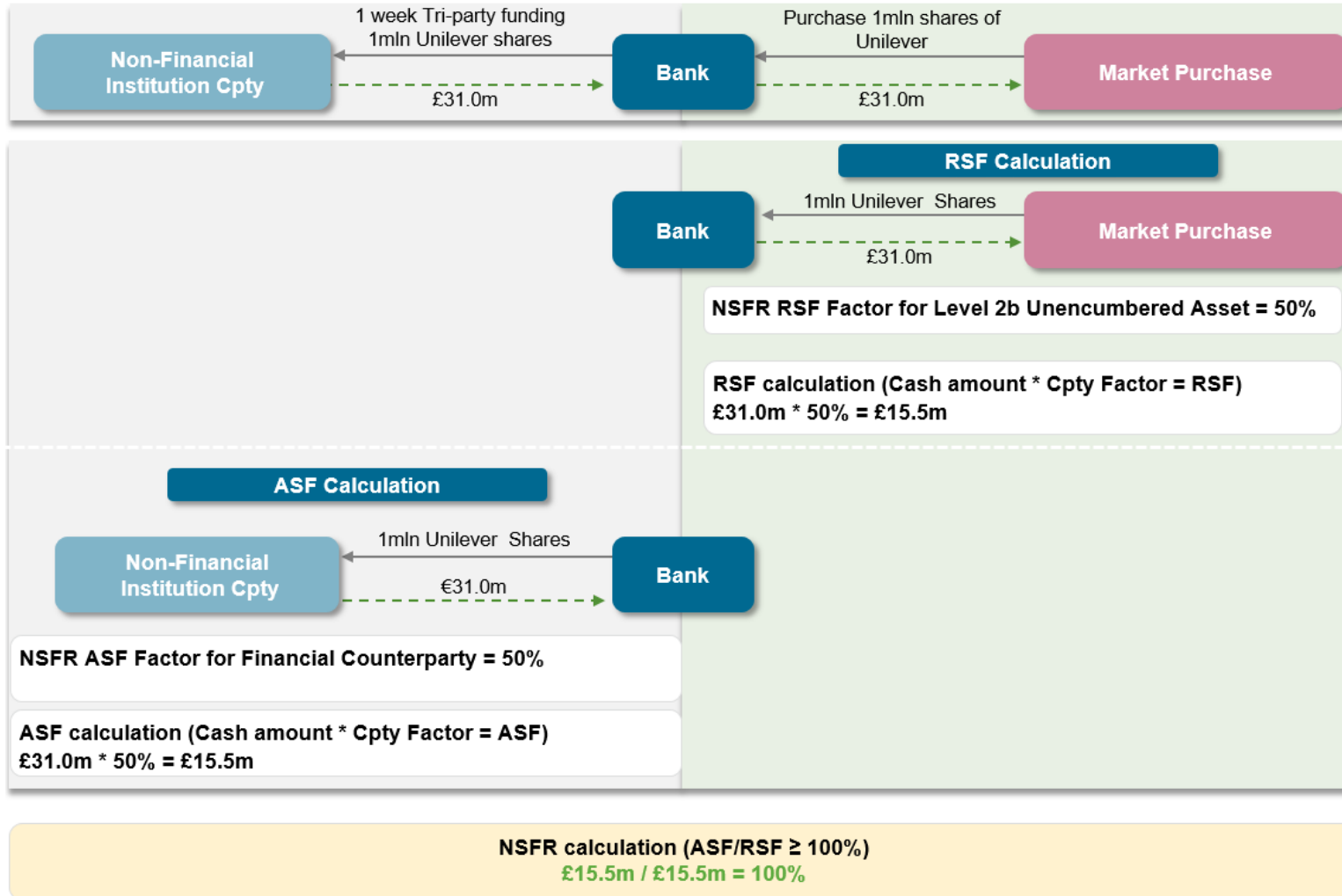
## NSFR Example #9: Unencumbered Assets – Level 1v Non FI



## NSFR Example #10: Unencumbered Assets – Level 2b vs FI



## NSFR Example #11: Unencumbered Assets, Level 2b vs non-FI



## NSFR Sample Portfolio: Outcome

Viewing the previous example as a simple sample portfolio and assuming NSFR is managed at a group level, the following table illustrates the spirit of NSFR, the impact of non-compliance and consequences regarding levered balance sheet

	NSFR Counterparty Combo	NSFR Ratio (≥ 100%)	Compliance	Additional >1year Funding Required
<b>SFT Transactions</b>				
<b>Example #1</b>	Sovereign vs. Financial	0%	No	€50.75m
<b>Example #2</b>	Sovereign vs. Non-Financial	100%	Yes	€0.00m
<b>Example #3</b>	Financial (L1) vs. Financial	0%	No	€10.15m
<b>Example #4</b>	Financial (L1) vs. Financial (CCP)	0%	No	€10.15m
<b>Example #5</b>	Financial (L2b: Credit) vs. Financial	0%	No	€15.34m
<b>Example #6</b>	Financial (L2b:Equity) vs. Financial	0%	No	€75.00m
<b>Example #7</b>	Financial (L1) vs. Financial – LT	50%	No	€50.75m
<b>Total SFT Portfolio Requirement</b>				<b>€212.14m (Deficit of Stable funding)</b>
<b>Unencumbered Assets (Cash Desk Positions)</b>				
<b>Example #8</b>	Unencumbered Level1 vs. Financial	0%	No	€5.8m
<b>Example #9</b>	Unencumbered Level1 vs. non-Financial	>100%	Yes	-€45.68m (Excess Stable Funding)
<b>Example #10</b>	Unencumbered Level2b vs. Financial	0%	No	€15.5m
<b>Example #11</b>	Unencumbered Level2b vs. non-Financial	100%	Yes	€0.00m
<b>Total Unencumbered Assets (Cash Trading Position) Portfolio Requirement</b>				<b>-€24.38m (Excess Stable Funding)</b>
<b>Total Portfolio Requirement</b>				<b>€ 187.76 (Deficit of Stable funding)</b>



## NSFR Sample Portfolio: Consequences – Cost & Balance Sheet

- Non-Compliance of NSFR requires firms to increase their long term funding, > 1year funding
- In this example portfolio

£1.375Bln of Balance Sheet Transactions

Requires

£187.76 of > 1year of Funding

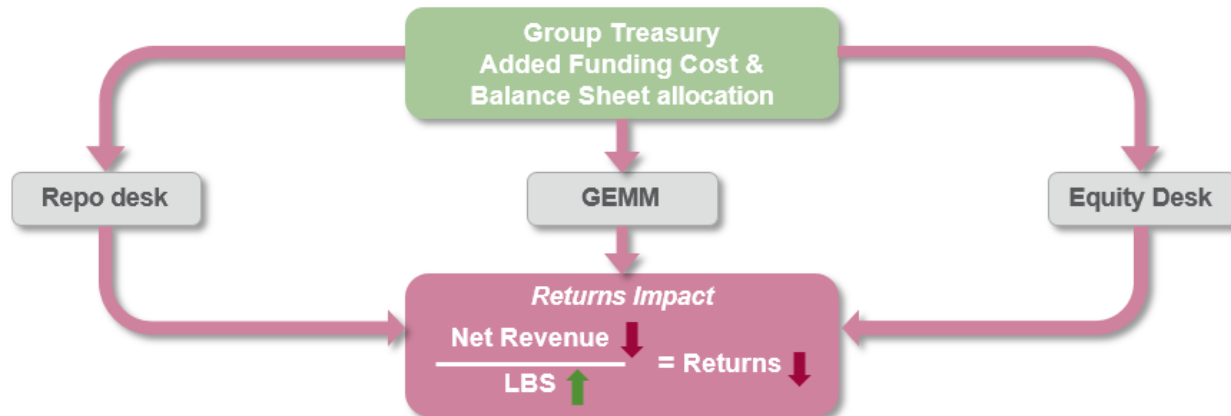
- Assuming NSFR is managed at a global level, the additional funding would lead to an increase of HQLA holdings which would have obvious implications on leverage balance sheet

+ £187.76 of New 1 year Liabilities

Bank's Balance Sheet  
**Impact**  
£187.76m or 13.7% Increase

+ £187.76 of New HQLA

- As banks become more sophisticated in passing through regulatory costs to the end user, the 'cost' associated with the extra liquidity requirements could impact return metrics both in the form of additional funding cost and associated balance sheet allocation



## Distortion of Market Dynamics & Behavioural Consequences

In most cases regulation is intended to change behaviour. Unfortunately given the complexity of the market and number of participants, it's difficult to anticipate every reaction so at times it leads to unintended behaviour

- **Bifurcation of the Secured Liquidity markets**

- Different ASF factors will influence the cost of obtaining funding from 'preferred' liquidity providers and may force 'less preferred' liquidity providers to lend their funds at a discount

Funding Counterparties (<6 months) ASF Factors	
Winners	Losers
Sovereigns & PSEs	Banks & Other Financial Institutions
Non- Financial Corporate	Central Banks
	Retail & Small Business Customers

- **Minimizing NSFR Impact: Optimal Trades:**

- L1 Unencumbered Asset (Long cash trading position) vs. NFC = Excess NSFR
- Non-L1 Assets (Less Liquid Assets) vs. NFC = Minimizes the NSFR
- Availability of non-financial corporate (NFC) funding in the secure funding markets.
  - ♦ This type of funding is growing as a result of banks forcing non-regulatory compliant liquidity off their balance sheets, driving it into MMF and direct participation in the repo mkt via tri-party.
  - ♦ Currently the majority of this cash only accepts level 1 assets and availability is not stable. Finally, NFC funding as a percentage of total funding is very small compared to funding from other sources and would estimate it at < 5%.

- ASF counterparty factors will motivate banks to seek funding with counterparts that have higher ASF factors, especially for lower rated assets (i.e. Equities and Credit)



## NSFR Paragraph 45: Potential Game Changer

### Paragraph 45 Interdependent Asset and Liabilities

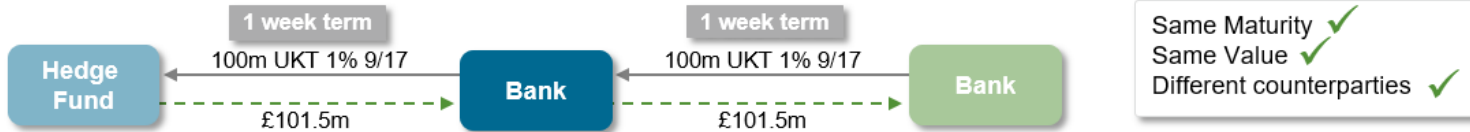
National supervisors have discretion in limited circumstances to determine whether certain asset and liability items, on the basis of contractual arrangements, are interdependent such that the liability cannot fall due while the asset remains on the balance sheet, the principal payment flows from the asset cannot be used for something other than repaying the liability, and the liability cannot be used to fund other assets. For interdependent items, supervisors may adjust RSF and ASF factors so that they are both 0%, subject to the following criteria:

- The individual interdependent asset and liability items must be clearly identifiable.
- The maturity and principal amount of both the liability and its interdependent asset should be the same.
- The bank is acting solely as a pass-through unit to channel the funding received (the interdependent liability) into the corresponding interdependent asset.
- The counterparties for each pair of interdependent liabilities and assets should not be the same.
- Before exercising this discretion, supervisors should consider whether perverse incentives or unintended consequences are being created.
- The instances where supervisors will exercise the discretion to apply this exceptional treatment should be transparent, explicit and clearly outlined in the regulations of each jurisdiction, to provide clarity both within the jurisdiction and internationally.

## SFT Pass-Through Transactions

A narrow interpretation on paragraph 45 could bring client short covering activity (a basic function of any repo desk or equity finance desk) into scope and applicable to NSFR. Thus what starts as a short covering trade becomes a funding trade

### SFT Pass Through – Narrow Interpretation



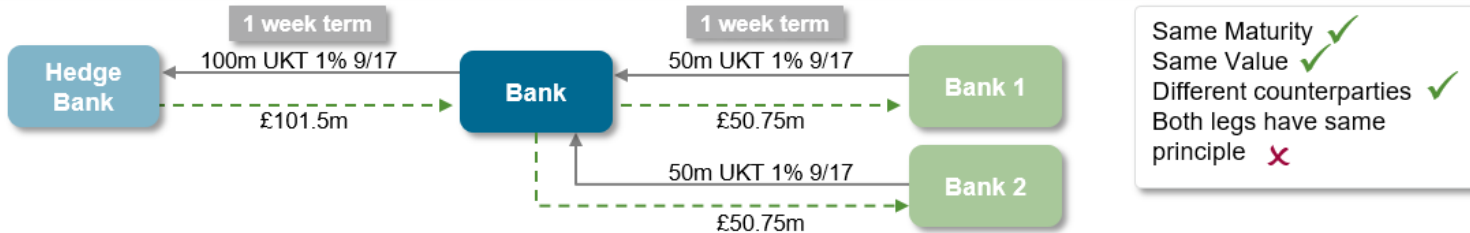
Same Maturity ✓  
Same Value ✓  
Different counterparties ✓

### Fails Interpretation NSFR Measure Applies



Same Maturity ✗  
Same Value ✓  
Different counterparties ✓

### Fails Interpretation NSFR Measure Applies



Same Maturity ✓  
Same Value ✓  
Different counterparties ✓  
Both legs have same principle ✗

#### AFS Factor

Financial Institution = 0%

ASF calculation (Cash amount \* Cpty Factor = ASF)  
£101.5m \* 0% = £0.00m

#### RFS Factor

Financial Counterparty = 10%

RSF calculation (Cash amount \* Cpty Factor = RSF)  
£101.5m \* 10% = £10.5m

NSFR Calculation ASF/RFS > 100%)

£0.0m / £10.5m = 0.0%

## Pass-Through: Cash Market Short Covering

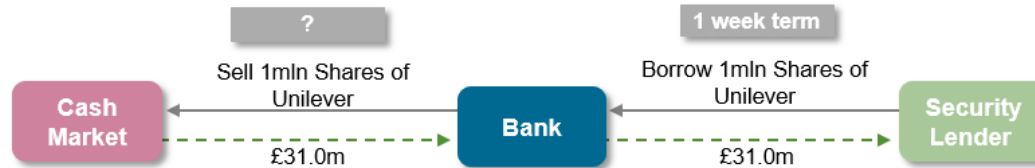
As part of gov't bond market making activities, trading books may be outright short requiring temporary short covering in order to make good delivery. Current interpretation of the NSFR means the short sales proceeds would attract a 0% ASF factor, but the short cover (reverse repo or stock borrow) would be subject to the standard RFS factors, even though the borrow itself is fully funded. The examples below illustrate the additional ASF needed to support market making franchises.

### Level 1a outright short -sell



AFS Factor Financial Institution = 0%	RFS Factor Financial Counterparty = 10%
ASF calculation (Cash amount * Cpty Factor = ASF) £101.5m * 0% = £0.00m	RSF calculation (Cash amount * Cpty Factor = RSF) £101.5m * 10% = £10.5m
NSFR Calculation ASF/RFS >100%) £0.0m/ £10.5m = 0.0%	

### Level 2b outright short -sell

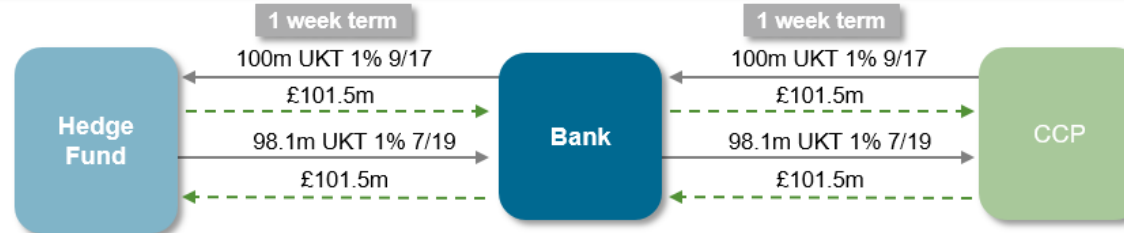


AFS Factor Financial Institution = 0%	RFS Factor Financial Counterparty = 10%
ASF calculation (Cash amount * Cpty Factor = ASF) £31.0m * 0% = £0.00m	RSF calculation (Cash amount * Cpty Factor = RSF) £31.0m * 50% = £15.5m
NSFR Calculation ASF/RFS >100%) £0.0m/ £15.5m = 0.0%	

## NSFR vs. Repo Netting

Currently NSFR rules call for respecting account netting.  
 Trades that net on balance sheet would not be subject to NSFR funding requirements. If this approach were to change, a classic Gilt relative value trade which is net balance sheet flat would attract NSFR funding. Not only will the funding cost increase but also a potential further £21m of balance sheet, ~ 5% of the implied balance sheet (£406m)

### Long - Short Gilt RV Trade



	AFS Factor Financial Institution= 0%	RFS Factor Financial Counterparty = 10%
<b>UKT 1% 9/17</b>	ASF calculation (Cash amount * Cpty Factor = ASF) £101.5m * 0% = £0.00m	RSF calculation (Cash amount * Cpty Factor = RSF) £101.5m * 10% = £10.5m
	NSFR Calculation ASF/RFS (>100%) £0.0m/ £10.5m = 0.0%	

	RFS Factor Financial Counterparty = 10%	AFS Factor Financial Institution= 0%
<b>UKT 1% 7/19</b>	RSF calculation (Cash amount * Cpty Factor = RSF) £101.5m * 10% = £10.5m	ASF calculation (Cash amount * Cpty Factor = ASF) £101.5m * 0% = £0.00m
	NSFR Calculation ASF/RFS (>100%) £0.0m/ £10.5m = 0.0%	

# **Attachment 3**

## Estimated quantitative impact of NSFR

### Summary

For the sample of firms responding to the December 2015 ICMA European repo market survey, the quantitative impact of NSFR is estimated to be a shortfall in Required Stable Funding (RSF) of about EUR 72-260 billion, compared to aggregate outstanding non-forward repo transactions of EUR2,408 billion (ie 3.0-10.8%). The required adjustment has to focus on funding rather than lending. It could require a one-off shift out of short-term repo (less than six months) of the order of 40% or more.

Available Stable Funding (ASF) is far more sensitive than RSF to assumptions about the share of business with financial counterparties. This is because of the asymmetry of treatment of repo compared to reverse repo where counterparties are financial institutions and transactions are for less than 6 months. The estimate of the impact of NSFR is very sensitive to assumptions about the share of triparty repo with financial counterparties.

### Methodology

Calculations are based on data from the December 2015 survey, which provides the value of outstanding transactions, on the basis of which it is possible to make stable funding calculations (this would not be possible with turnover data). ASF calculations use the repo data from the survey and Required Stable Funding calculations use the reverse repo data. The following assumptions have been made:

- All **electronic and voice-brokered** transactions are interbank and are therefore counted as transactions with 'financial institutions', which means:
  - Electronic and voice-brokered repos have ASF factors of 0% for under 6 months, 50% for 6-12 months and 100% for over 12 months;
  - Electronic and voice-brokered reverse repos have RSF factors of 10% against Level 1 HQLA or 15% for other collateral for less transactions of less than 6 months, 50% for 6-12 months and 100% for over 12 months (it has been assumed that reverse repos consist of 70% Level 1 HQLA, which results in a weighted average of about 12%).
- The size of voice-brokered transactions has been halved to eliminate **forward repos**, which are not subject to NSFR. The size of non-triparty direct business has been reduced by 7% for the same reason.
- A 15% share of **triparty transactions** has been shifted to electronic transactions to account for EGCP, which is assumed to be all interbank and therefore counted as transactions with financial counterparties'.
- **EGCP-adjusted triparty and other direct transactions** can be with financial and non-financial counterparties. For ASF calculations, non-financial counterparties include non-financial corporates and official entities such as sovereigns, official development banks and public sector entities, but not central banks. Central banks are an important constituency for triparty services, so their inclusion in the financial sector is helpful. However, some development banks use triparty, eg EIB. For RSF calculations, the non-financial official sector includes central banks, BIS, IMF and European Union. On the basis of discussions with triparty agents, it is assumed that 5% of their business is with non-financial corporates. It is also assumed that 30% is with central banks and 20% with official development banks. This means that it is assumed, for ASF calculations, that 75% of triparty business is with financial institutions (the other 25% being with official development banks and non-financial corporates) and, for RSF calculations, it is assumed that 65% is with financial institutions (the other 35% being with central banks and non-financial corporates).



- Transactions have been adjusted for **netting** but it has been assumed that netting impacts only one-day transactions that have been executed directly (25% netting impact for transactions with financial counterparties and 5% impact for others), electronically (50% netting impact) and via voice-brokers (netting impact 50%). No triparty transactions are bilaterally netted. Netting overall is assumed to achieve a reduction of about 17%.

The estimation is very sensitive to assumptions about the composition of triparty repo (see the Appendix).

On the basis of the above assumptions, the estimated net RSF of the sample of banks would be EUR 182.1 billion. Of this, some EUR 142.8 billion would be due to direct transactions. To eliminate the net RSF, firms would have to switch about EUR 364 billion of direct repos from below 6 months to 6-12 months. This would be a 50% reduction in outstandings of less than 6 months and an increase of almost 21 times in outstandings of 6-12 months. Switching all reverse repo from over to under 6 months would eliminate only about EUR 37 billion of the net RSF.

*Richard Comotto*  
*20 June 2016*

## Appendix --- sensitivity of estimation to counterparty composition of triparty repo

The net RSF is very sensitive to changes in the share of triparty transaction assumed to be with financial counterparties. This is because, in triparty, repo is about three times the size of reverse repo and most triparty repo is under 6 months. Repo under 6 months is subject to a 0% ASF factor, whereas reverse repo under 6 months is subject to a 10/15% RSF factor, a uniquely adverse asymmetry of treatment. Moreover, the relative importance of triparty repo is boosted from 15% to about 22% of total repo by the adjustment of other types of transaction for netting (as it is assumed that no triparty transactions are bilaterally netted).

net RSF		% of triparty users who are financial institutions				
		EUR bn	0%	25%	50%	75%
% of direct users who are financial institutions	100%	-72,309	-107,294	-142,278	-177,263	-212,248
	75%	-84,221	-119,206	-154,191	-189,175	-224,160
	50%	-96,134	-131,118	-166,103	-201,088	-236,072
	25%	-108,046	-143,031	-178,015	-213,000	-247,985
	0%	-119,958	-154,943	-189,928	-224,912	-259,897

It can also be seen that, from the tables below, as the relative shares of financial and non-financial counterparties varies, the resulting change in ASF is far stronger than the change in RSF. Thus, increasing the share of direct financial counterparties from 0% to 100% reduces ASF by between 68% and 91% (depending on the share of financial counterparties in triparty), while the RSF is only reduced by between 59% and 63%. This reflects the drop in the ASF factor for financial counterparties from 50% to 0% when maturity falls below 6 months, compared to a drop in the RSF factor from 50% to 10/15%.

ASF		% of triparty users who are FI				
		0%	25%	50%	75%	100%
% of direct users who are FI	100%	230,442	183,369	136,296	89,224	42,151
	75%	327,184	280,112	233,039	185,966	138,894
	50%	423,927	376,855	329,782	282,709	235,636
	25%	520,670	473,597	426,525	379,452	332,379
	0%	617,413	570,340	523,267	476,195	429,122

RSF		% of triparty users who are FI				
		0%	25%	50%	75%	100%
% of direct users who are FI	100%	302,751	290,663	278,575	266,487	254,399
	75%	411,406	399,318	387,230	375,142	363,054
	50%	520,061	507,973	495,885	483,797	471,709
	25%	628,716	616,628	604,540	592,452	580,364
	0%	737,371	725,283	713,195	701,107	689,019

# Attachment 4



## **ICMA EUROPEAN REPO and COLLATERAL COUNCIL**

24 June 2016

### **NSFR Treatment of Collateral Swaps**

#### **Uncertainty with regards to the treatment of encumbrance on netted back-to-back collateral swaps:**

Back-to-back collateral swaps are the combination of two collateral swaps on the exact same assets being swapped, i.e. the bank:

- Borrows Security A from Counterparty X against lending Security B to Counterparty X;
- Lends Security A to Counterparty Y against borrowing Security B from Counterparty Y.

Under US GAAPs and IFRS norms, collateral swaps are generally netted (provided they meet certain criteria listed by accounting norms), which means that banks do not account any asset or liability related to these transactions.

A netted collateral swap may involve a security that is currently on a bank's balance sheet; in that case, the netted collateral swap will be reflected in the bank's accounts by a transfer of the security from its previous accounting sub-portfolio to a new sub-portfolio generally named "securities provided in collateral of repo transactions" or "securities lent". However, because it is netted, this collateral swap will not require the recording of an additional asset or liability for the bank.

In comparison, netted back-to-back collateral swaps involve securities that do not appear on a bank's balance sheet: in the above example, neither Security A nor Security B appears on the bank's balance sheet; furthermore, because they are netted, neither collateral swap gives rise to an asset or a liability on the bank's balance sheet.

By nature, securities sourced in one netted collateral exchange are re-hypothecated in the other collateral exchange. As a result, netted back-to-back collateral swaps generate encumbrance, as per NSFR reasoning.

However, this encumbrance is not treated in the current BCBS texts on the NSFR. This is because the NSFR is explicitly relying on the accounting balance sheet, while precisely these netted back-to-back collateral swaps are not reflected in the banks' accounting balance sheet.

The absence of an explicit treatment of such transactions creates uncertainties which may hinder the development of those transactions, despite them being an important tool for collateral fluidity across financial markets, with very limited associated risks.

### **Treatment proposed for netted back-to-back collateral swaps:**

Because netted back-to-back collateral swaps cannot be treated based on the accounting balance sheet, we suggest that they be excluded from NSFR requirements.

- Indeed, reconciliation between the NSFR requirements and the accounting balance sheet is one of the over-arching principles of the NSFR;
- Linking securities sourced within one netted collateral swap to their rehypothecation in another netted collateral swap would be especially complex since both collateral swaps do not appear on the bank's balance sheet;
- At the same time, netted back-to-back collateral swaps do not violate the NSFR principle (mentioned in the instructions for the Basel III monitoring exercise published by the BCBS in 2015) "that a bank cannot derive liquidity benefit from assets that they have encumbered", which is the principle justifying the identification and treatment of encumbrance within the NSFR;
  - o This is because netted back-to-back collateral swaps do not bring ASF to the banks nor reduce banks' RSF
  - o Therefore, it can be said that a bank does not derive liquidity benefit from assets it encumbers through netted back-to-back collateral swaps. For this reason, it is not illogical to exclude netted back-to-back collateral swaps from the NSFR encumbrance scope.

The US regulators have identified this difficulty in their draft implementation text of the NSFR<sup>1</sup>. Within their question number 34 to the industry, they ask: "Is it appropriate to apply any encumbrance treatment to transactions involving off-balance sheet collateral?"

If regulators still wanted to identify some encumbrance related to netted back-to-back collateral swaps (despite such encumbrance not being caused by the principle that "a bank cannot derive liquidity benefit from assets that they have encumbered", since banks actually do not derive liquidity benefit from netted back-to-back collateral swaps before the imposition of any encumbrance treatment), we would suggest to use the alternative treatment proposed by the US regulators in their question number 31 to the industry:

- In this treatment, an RSF factor would be applied to the off-balance sheet security that is being encumbered, using the traditional encumbrance RSF factors (i.e. 0% between 0 and 6 months; 50% between 6 and 12 month; 100% over 12 months);

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<sup>1</sup> [https://www.fdic.gov/news/board/2016/2016-04-26\\_notice\\_dis\\_c\\_fr.pdf](https://www.fdic.gov/news/board/2016/2016-04-26_notice_dis_c_fr.pdf)

- At the same time, an ASF factor would be applied to the obligation to return the security (through the reverse repo leg of the netted collateral swap), based on the maturity of this obligation (i.e. the maturity of the netted collateral swap through which the security was sourced) and using the same ASF factors as for funding instruments provided by FI counterparties.