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The 300-billion-euro Question

Survey on the Benefits of TARGET2-Securities

How T2S can provide relief from Basel III capital requirements

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The 300-billion-euro Question – Survey on the Benefits of TARGET2-Securities

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Contents

Figures 6

A Executive summary 7

B How we approached this research 9

C Current market context 11
1 Macro-economic background 11
2 Regulation 11

D The most important regulations for market participants 14
1 AIFMD and UCITS V 15
2 Basel III and the 300-billion-euro gap 15
3 EMIR and the enhanced need for collateral 16

E Key challenges for the financial sector 17

F How T2S can provide relief 19
1 Relief on the requirements from Basel III 20
2 Quantitative calculation of Basel III relief from T2S 21
3 Relief on the requirements from AIFMD 23

G What else is on network managers' agendas? 25

H Summary and conclusion 28

Contacts 30

Figures

Fig. 1 T2S's impact on Tier 1 capital needs of euro zone banks to comply with 2019 Basel requirements 8

Fig. 2 Our approach was based on combining in-depth qualitative interviews with a large number-crunching exercises at Clearstream 9

Fig. 3 The current regulatory tsunami will have a multiplier effect on capital needs 12

Fig. 4 Case study pre-T2S 22

Fig. 5 Case study post-T2S 22

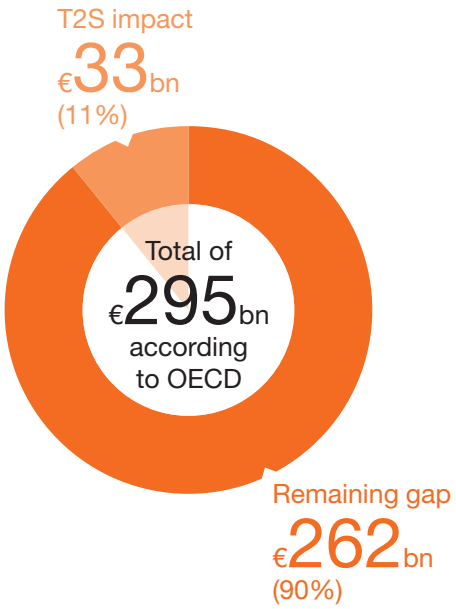
Fig. 6 Illustrative example 26

Fig. 7 New collateral streams arising by the introduction of EMIR and Dodd Franck 27

A Executive summary



Fig. 1 T2S's impact on Tier 1 capital needs of euro zone banks to comply with 2019 Basel requirements[1]



[1] Sources: PwC analysis based on Clearstream data; OECD Journal, referring to EU capital exercises target (9% of RWA).

In light of the regulatory tsunami and the current zero-interest rate environment, market participants are under huge pressure to cut costs and regain margins. One widely used approach among multi-market banks in Europe is legal entity consolidation, which allows them not only to reduce complexity, but also to pool liquidity across various markets.

With so much regulatory-driven change on the horizon, Clearstream and PwC undertook a research project to assess how financial institutions have been approaching the implementation of this regulatory agenda, how the changing economic, political and market-driven context is influencing their strategy, and which measures, if any, they have already, or plan to, set in place to cope with challenges ahead. The research also sought to establish what role TARGET2-Securities (T2S) is expected to play in this changing context and whether financial market players perceive it as supportive or burdensome.

Our survey suggests that market participants are starting to consider the effects of a pooled cash account in T2S on their balance sheet, but are struggling to quantify the impact. Clearstream SA used their own customer cross-border settlement data to estimate the impact on their own liquidity requirements of using a single central bank cash account in T2S, and deduced that it will reduce, on average, 15% of their daily cash or credit consumption during peak settlement periods (usually the overnight cycle). Transposing this to the broader settlement volume in the euro zone, we have calculated that under Basel III rules, this could translate into €33 billion of Tier 1 capital savings for all euro zone banks, ie, 11% of the shortfall estimated by the OECD using 2011 year end positions.

In addition, T2S facilitates the shortening of the custody chain. Many major Central Securities Depositories (CSDs) have announced that they will establish direct access to one another, which would enable market participants to hold their assets directly with one CSD without having to open up business relations with all of them. Instead, they can hold their assets indirectly in T2S via another CSD of their choice, which acts as an investor CSD. As a consequence commercial banks can be removed from the custody chain for both securities and cash transactions. They can still profit from their current agents' services by establishing account operator models with them to receive asset services. Certain market participants view the development of assessed links between SSSs as an important element in establishing robust custody chains that can withstand the terms of AIFMD and forthcoming regulation on UCITS and ETFs.

"Collateral is the name of the game when we talk about priorities under T2S, Basel III and EMIR."

Arno Vroom, KAS-Bank, Associate Director Network Management

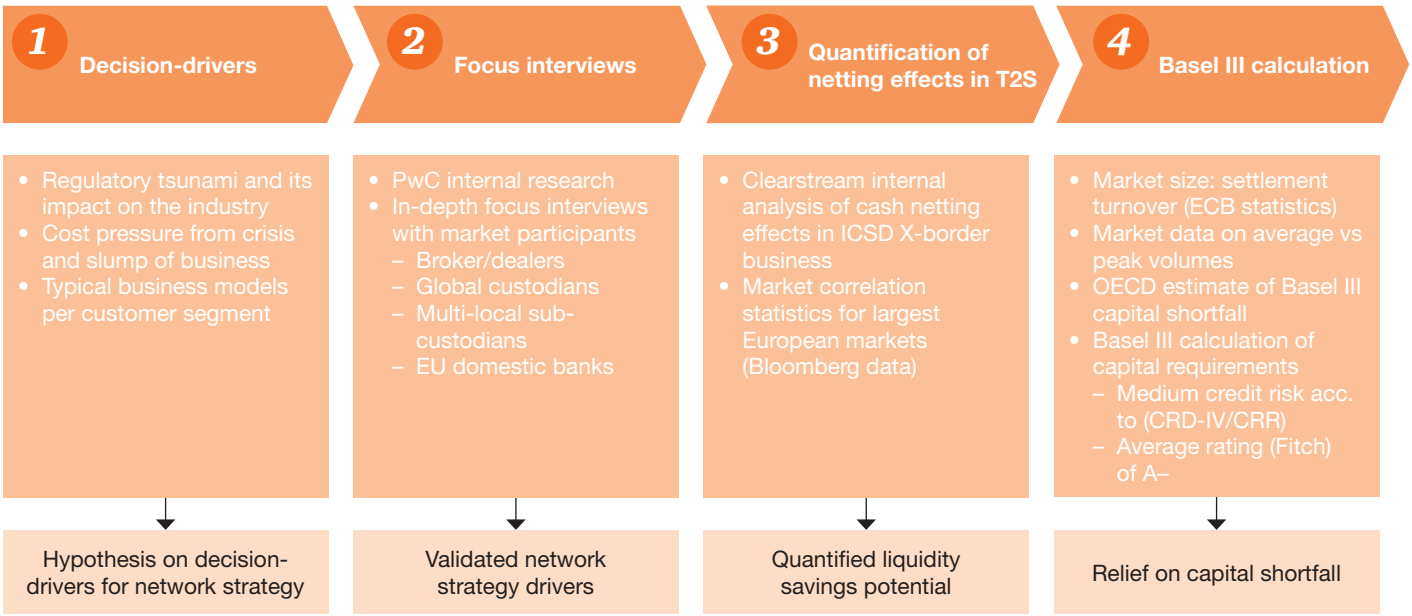
Finally, T2S will considerably facilitate the mobility of collateral. Securities in all T2S markets are technically held on the same platform, and bookings within T2S can be executed in real time. This means that if a bank needs collateral in one market and that same bank only has the securities eligible for such collateral in another market, then only one T2S internal booking needs to be executed to transfer the corresponding securities to where they are needed. Today, with separate settlement systems being involved, this is a lengthy and expensive procedure.

B How we approached this research

In a world where financial institutions are being squeezed from many directions, having a clear view of relevant priorities is key. What drives decision-makers and what are their predominant areas of concern? Finally, what solutions are typically found to those problems, which measures are taken, and which projects are set up?

Starting from hypotheses on decision-drivers for a network strategy, PwC conducted a series of internal research studies and in-depth focus interviews with market participants (differentiated according to the market segmentation provided below). These provided the basis for the validation of our hypotheses. Finally, this was followed by a quantitative estimate of the effects of the Basel III balances on market participants under certain assumptions as described below.

Fig. 2 Our approach was based on combining in-depth qualitative interviews with a large number-crunching exercises at Clearstream



Of course, the pain points will depend on the market space in which a financial institution operates: different business models will be affected differently by the same regulation, and the response to challenges they introduce will correspondingly differ, too. For this reason, we divided our survey into four market segments, characterised as follows:

- Broker/dealers: their typical offering comprises brokerage services and investment bank services. They provide a wide range of financial services to a substantial and diversified client base (banks, corporations, financial institutions, governments, hedge funds, etc.), and typically aim to achieve multi-asset operational efficiency.
- Global custodians: their typical offering is centred on securities custody services. In addition to safekeeping, these services include corporate actions processing, tax treatment, market information, facilitation of settlement, liquidity management and collateral management services; some also offer tri-party collateral services. Typically, they provide their services in many geographic locations, in all parts of the world (i.e. globally).

- Multi-local sub-custodians: their typical offering comprises local agent bank services in a number of markets, often with a regional focus, and the complete asset servicing portfolio. They usually operate by setting up local subsidiaries/branches, which enables them to provide first-class market information and thus compete with the established local custodians in that market for inflow and domestic business.
- Domestic banks: their activity is typically focused on one geography; they operate many local branches in their home country with strong retail and merchant/corporate banking. They are engaged in private banking/wealth management, trade financing for local corporates and mortgaging for private and corporate clients. They issue credit cards, act as brokers for client trading, and may have online banking subsidiaries.

Since our analysis included concrete figures, we depended on some basic information, eg, assets under custody, transaction figures and total settlement turnover, etc. Such market-wide figures, if needed for our analysis, were taken from the European Central Bank (ECB) statistical data warehouse.

C Current market context

1 Macro-economic background

World trade has recovered since 2009 and is expected to grow, on average, by more than 5% per year until 2050. In the future, China and India are expected to build the most powerful bilateral trade-relationship, which will impact asset flows. In many advanced economies, like Europe's, the need for structural deleveraging across both financial and non-financial sectors, in conjunction with a high level of fragmentation in financial markets, is an additional burden on economic growth prospects. A housing bubble burst in some countries (Ireland, Portugal, Spain) and unemployment remains at record-high levels.

The general expectation is that the cost of borrowing, in both bond and bank financing, will increase in the medium term as developed countries start monetary tightening and raise the benchmark rates from their current low levels. Banks are still suffering from the consequences of the financial crisis of 2008. Economic projections reflect ongoing efforts to repair balance sheets and the closure of several banks. One key measure taken by banks to repair their balance sheets has been to get rid of risky assets and address asset quality problems. This involves provisioning for bad assets with fresh capital, which they need to raise.

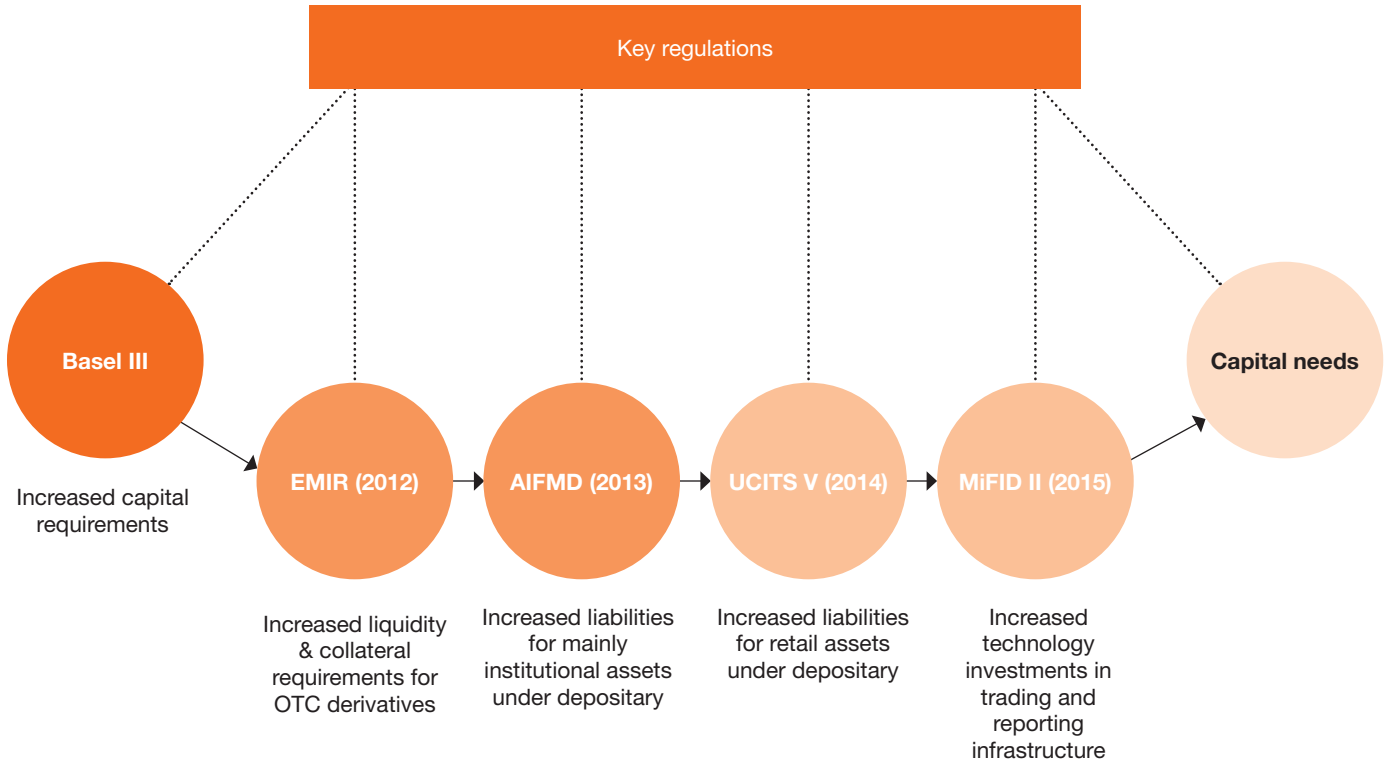
This is forcing banks to reassess their risk management and strategic direction as the public sector, which paid for the failures with hundreds of billions of euros, will not be able to prop up the financial systems again. They will also need to reject further bail-outs like they did in the case of Lehman.

Currently, the recovery process has been slowed down due to the fact that financial reforms and regulations (see below) have been held back or postponed. In some cases, the coordination process might be the trigger, in other cases it is recognised that banks' adaptability and flexibility are too low for fast changes.

2 Regulation

The most important challenge, in decision maker's views, is presented by **Basel III**, which will raise capital requirements in many businesses by a factor of two to three. In particular, it will raise the quality, consistency and transparency of the capital base. This includes common equity, Tier 1 capital of risk-weighted assets, and the introduction of additional capital buffers. Common equity requirements will more than double to 4.5%, the Tier 1 capital quota will increase, and, on top of that, a capital conservation buffer will be introduced, increasing the common equity to 7% in total. In addition, the assets which can enter into the calculation of common equity will be revisited (i.e. reduced), rendering achievement of the limits even more challenging. Consequently, banks are reducing their risk-weighted assets, as well as the size and structure of their balance sheets. Other significant effects are increased counterparty credit risk charges, and liquidity and funding requirements.

Fig. 3 The current regulatory tsunami will have a multiplier effect on capital needs



The **AIFMD** and **UCITS V** will enforce strict liability clauses for assets held in sub-custody. While relief on liability is only possible under AIFMD under very narrow circumstances (*force majeure*, etc.), the regime under UCITS V is even more stringent, since these exemptions do not exist and liability for assets held in sub-custody becomes unconditional (see next chapter, p. 15, for more details).

The **EMIR** introduces a mandatory clearing obligation for standardised OTC derivatives (IRS, CDS). All OTC derivatives must be reported to a trade repository. An institution can either access a Central Counterparty (CCP) directly or via a clearing broker[1]. This causes major process changes and often introduces new players into the value chain (clearing brokers, collateral managers), thus creating additional cost burdens to market players who had not been affected by these obligations in the past (in particular asset managers). At the same time, it also creates additional opportunities for those who are offering the services that will be needed by a much larger customer base and for many more transactions than previously.

"Our decision to change the geographical footprint of our network and cash pooling is mainly driven by the depositary liability question due to AIFMD and UCITS V."

Head of Network Strategy of a global custodian

[1] Cf. PwC and Goethe University, Frankfurt am Main (ed.), The Future of Capital Markets, http://www.pwc.de/de/finanzdienstleistungen/future-of-capital-markets.jhtml.

The **MiFID II** introduces organised trading facilities (OTFs) to the MiFID framework, while the original MiFID only covered multi-lateral trading facilities. In addition, it will impose new safeguards for algorithmic and high-frequency trading activity, and additional and reinforced powers of supervision of derivatives markets, which coordinates with the European Securities and Markets Authority (ESMA). Finally, there will be stricter requirements for portfolio management, investment advice and other investor protections.

A **Financial Transaction Tax (EU FTT)** for a group of 11 European countries could be implemented in 2014. According to the current draft by the EU Commission, trades in bond and share instruments could be taxed at 0.1% and trades in derivatives at 0.01%. The EU Commission has yet to decide whether the tax will also cover securities issued by a company within a participating country. If implemented in its currently discussed form, the EU FTT will significantly change market behaviour. Products with high turnover (eg, repo trades, which will not be exempt according to the current draft) will be affected most significantly.

The **Securities Law Directive (SLD)** will provide a clearer legal framework for the holding and disposition of securities held in securities accounts. This will alter governance of the exercise of investors' rights that flow from securities held through a chain of intermediaries, in particular in cross-border arrangements.

D The most important regulations for the market participants



1 AIFMD and UCITS V

AIFMD will enter into force as of July 22nd 2013. Amongst other regulations, it will bring along a much stronger liability of depositaries for assets held in custody/ sub-custody. Depositaries will be held liable for all losses of assets with only very few exceptions. Major liability cases include:

- Liability for loss of assets at sub-custodians to which custody has been delegated
- Liability for breach of operational duties, fraud or unintentional behaviour

This includes liability or provision of immediate replacement in case of loss by the depositary or any third party, except if the depositary can prove that the loss could not possibly be avoided, i.e., that there is a reversal of evidence. Exemptions for *force majeure* are possible, but under very narrow circumstances. Similarly, liability in case of fraudulent behaviour (despite strong due diligence processes) may not be considered force majeure.

Liability can be contractually excluded, but this will certainly not be easy to achieve in a market where margins for depositaries are continuously under pressure anyway. While AIFMD still provides some exemption cases, UCITS V, which is intended to enter into force by the end of 2014, may not provide such relief any more. Where the custody of assets has been delegated to a sub-custodian in a third country, a depositary under UCITS V will not be allowed to discharge its liability through a contractual arrangement – even where such delegation is mandatory under the rules of that third country.

In addition to this liability clause, AIFMD also imposes very sophisticated due diligence inspections to be held frequently with all sub-custody providers. Such inspections alone will already cause custodians to put in a significant effort.

As a result, liability will be a major topic of concern for depositaries for years to come. Global custodians and multi-local sub-custodians see this liability as a major threat to their business, at least in the sense that it will decrease their business case and impose additional capital requirements in their Basel III balance. The consolidation of the sub-custody chain, both vertically (i.e., less actors involved per instrument) and horizontally (i.e., consolidation across geographies), has the potential to remedy. If the liability cannot be mitigated, its scope could become tremendous, since equity capital of global custodians and multi-local sub-custodians is typically only a very small fraction of the assets held under custody.

2 Basel III and the 300-billion-euro gap

Essentially, Basel III was one of the major measures set in place after the 2008 financial crisis, intending to make banks more robust against similar events. The most important measure is the increase of Tier 1 capital requirements for assets under risk, which has two effects: (i) it creates a buffer to cope with losses of assets and (ii) it increases the costs for having risky assets and thus pushes banks in the direction of reducing the overall risk in their portfolios.

Overall, this puts banks under pressure to increase their capital. Figures on the size of the shortfall vary in general. One source estimates the amount of additional capital needed to be approximately €300 billion in the euro area:

Estimates of Core Tier 1 Capital Needs in EU Banks	
Increase, based on end-2011 position, required to meet	in bn of €
Core Tier 1 capital	
2019 Basel rules (7% of RWA)	18
EU capital exercise target (9% of RWA)	**295**
5% pa RWA growth through 2015	563
FDIC "well-capitalized" (5% of non RWA)[1]	716
5% pa asset growth through 2015	1075
Common equity	
Industry (IIF) estimate to 2015, "Core Regulatory Change"	678

[1] Note that this is more stringent than the **actual** FDIC standard, which uses Tier 1 capital.

Source: OECD (ed.), Deleveraging, Traditional vs Capital Markets Banking and the Urgent Need to Separate and Recapitalise G-SIFI Banks: *OECD Journal: Financial Market Trends*, 1/2012.

Other methodologies even conclude on much higher numbers; for the subsequent calculations we used the OECD figure. This shortfall is tremendous and it underpins the significance which decision-makers now assign to Basel III and, as a consequence, to their risk portfolio.

Banks have set diverse measures in place to improve their capital ratio and thus reduce the shortfall described above. Measures typically tackle both the increase of the capital (eg, by increasing the revenue basis) and the decrease of risk (by reducing risky assets). The pain points identified during our study clearly reflect this significance of Basel III.

3 EMIR and the enhanced need for collateral

EMIR has introduced the obligation to collateralise any kind of OTC derivatives. While all non-standardised OTC derivative trades will have to be secured by a bilateral exchange of collateral, standardised OTC derivatives will even have to be cleared at a central counterparty. This means that market participants have to establish a relation to a CCP or they will have to commission a clearing broker. Centrally cleared trades must be collateralised according to the rules set by the respective CCP. These rules impose strict requirements on collateral, both as an initial margin (either cash or securities) and a variation margin (cash in the underlying currency).

E Key challenges for the financial sector

The regulatory agenda is putting pressure on financial institutions in a number of ways, with a varying degree of impact depending on their business model and the market segment in which they are active.

Capital: Basel III and its European version of the regulation, the Capital Requirement Directive IV (CRD), will significantly increase capital requirements for most financial institutions in Europe and beyond. Broker dealers are expected to be most affected by it, and this is currently driving their management to review their business portfolio for ways of doing business with lower capital requirements.

Domestic banks, with their large credit books and sizeable capital markets business centred on the client and treasury activities, face a similar challenge in managing their capital. Risky assets have already become more expensive due to new regulations, especially Basel III, and compliance with capital requirements is challenging and requires a variety of measures.

"Asset safety and provision of liquidity will be the predominant topics for the next years to come"

Justin Chapman, Northern Trust, Global Head of Industry Management, Operations & Technology

Risk profile: Right now a top priority for global custodians is to safeguard their risk profile. Typically, global custodians hold their assets with sub-custodians optimised for the respective markets where the assets are held. The diversity of sub-custodians results in a variety of interfaces with high complexity. In the case of a sub-custody provider's default, this complexity might result in failure of a timely proof of ownership and therefore also in long delay in accessing the assets held. Economically, from some investors' points of view, this is equal to a loss of assets, triggering liability clauses under AIFMD/UCITS V. In addition to forming an important challenge in itself, this liability risk is gaining much additional momentum again from Basel III with its increased capital requirements imposed on any position held in the bank's own books, which again enforces the trend to risk-aversion. Simply speaking, AIFMD creates new risk positions, and Basel III makes it very expensive to have them. These effects may be cascaded down to multi-local sub-custodians which are expected to take on the delegation of the liability under AIFMD and UCITS V. Wherever there is a commercial bank acting as a sub-custodian between the depositary and the actual place of settlement in the sub-custody chain, the multi-local sub-custodian will incur an additional layer of (counterparty) risk and could be expected to assume liability for it.

Sell-side firms, having already faced a downgrading by rating agencies, are now faced with increased borrowing costs, and thus looking for ways to reduce their borrowing costs and needs.

Liquidity: Apart from the measures initiated by central banks, the crisis demonstrated the importance of liquidity for the survival of the banks in stressed market situations. During the crisis, refinancing through the capital markets was almost impossible. The regulatory environment trend of demanding either an implicit (higher RWA/CVA charges) or an explicit collateralisation of almost every business (OTC-CCP, bilateral OTC) led to an increasing demand for high-quality liquid bonds. Furthermore, the Basel III/CRD IV framework will introduce additional liquidity ratios with the objective of promoting short-term resilience by

ensuring sufficient high-quality liquid assets to survive a significant stress scenario and to promote resilience over a longer time horizon.

EMIR and Dodd Frank, in particular, with their requirements to collateralize OTC derivative trades or even clear them centrally on a CCP, will have a strong effect on liquidity consumption. In addition, liquidity will be kept safe and not widespread into the markets. Although the ECB is providing liquidity to the markets at larger volumes than ever before, market players return the received liquidity immediately back to the ECB, thus keeping markets 'dry'. The combination of an increased need for liquidity and a strong aversion to setting liquidity free into the market are causing liquidity to shrink and, in addition to collateral, it is becoming one of the most important scarce assets.

"T2S is seen as 80% strategy and 20% technical adaptation"

Arno Vroom, KAS-Bank, Associate Director Network Management

Cost pressure: Regulatory initiatives associated with the financial crisis are leading to a strong pressure on all margins and, as a consequence, to cost pressure for all institutions in the financial industry. For global custodians and multi-local sub-custodians, assets under custody have decreased since the crisis and are recovering only at a moderate pace; cost pressure from customers and downstream market participants have an impact on the global custodians not least through very tough price negotiations. As a consequence, cost savings initiatives are ubiquitous in the custody sector.

Domestic banks are likewise faced with shrinking margins because of the low interest rate environment and strong competition for the same customers. Simultaneously, they are being confronted by a decreasing number of client transactions and weak economic activity throughout most of the EU. Various regulatory requirements have not only increased the costs for several products (in consequence of rising capital costs), but also caused high implementation costs for IT infrastructure and process adjustments.

Revenue creation is one of the means to support capital, but it is also a topic of its own. Contribution of interest income has become more important for domestic banks. Commission income decreased as investors, reluctant to trade despite rising stock markets, turned to deposit products. Accordingly, the number of securities transactions by clients strongly decreased because of the risk aversion and the European-wide recession. Some previously high-margin products are not profitable anymore. Therefore, the challenge in this environment is to generate sustainable revenues while not absorbing too much of the valuable capital.

From the multi-local sub-custodians' point of view, the current environment threatens the margins of traditional custody products, intensifying the ongoing provider consolidation. Due to the fact that the safekeeping of assets and trade settlements are considered commoditised products more and more, sub-custodians will have to add new services to their portfolio to maintain the profitability of their business model.

Collateral availability, finally, is of major importance, especially for derivative trading and funding. Following EMIR and the end of unsecured interbank credits, the need for high-quality collateral has increased significantly. Sourcing collateral has thus become one major challenge, in particular for brokers and dealers. Another challenge is providing the collateral at the right time and place: collateral mobilisation is becoming more and more important, and T2S might be a solution to this challenge due to its facilitation of cross-border settlement.

F How T2S can provide relief



"One of the biggest benefits of T2S will be the possibility to pool liquidity for settlement in the T2S zone via a single central bank money cash account."

Eric de Gay de Nexon, Société Générale Securities Services, Head of Strategy Market Infrastructures

1 Relief on the requirements from Basel III

If Basel III and the capital requirements imposed by it in connection with risk-weighted assets are the major concerns in the industry today, the question arises of how T2S and the liquidity improvement following it can provide relief. One aspect of relief for the market as a whole is the reduction of credit lines in the context of settlement financing.

The idea behind is to relate the capital needs for the risk associated with credits in settlement funding to the reduction of liquidity needs from T2S. Basel III may require uncommitted credits used for settlement funding today to be turned into secured committed credit lines in order to fulfil the needs for the net stable funding ratio (NSFR). Such credits can be valued under Basel III, if an assumption is made on the credit-worthiness of the borrower. By factoring in the figures used to calculate the risk positions according to Basel III, capital requirements will be fulfilled in the course of settlement funding. Relief on Basel III is then calculated from the reduction of funding needs if liquidity pooling under T2S is exploited. The figure that emerges is huge, due to the substantial amount of liquidity saved for settlement funding.

The detailed argumentation goes as follows: today, settlement providers often provide uncommitted credit facilities to support their customers' settlement funding. Such credit facilities are neither fixed nor made transparent: the settlement service provider simply guarantees the settlement positions to be processed the very same day. Such uncommitted credit facilities are not subject to Basel III considerations (an advantage for the lender) and they spare the borrower from entering into credit negotiations. In the context of NSFR reporting, the requirements are now expected to be altered such that uncommitted credit facilities will no longer be accepted as contributions to NSFR reporting, thus forcing market participants to negotiate and contract fixed credit lines for their settlement funding or to ensure they have alternative funding sources readily available to replace the uncommitted credit line. The driver behind this requirement is the market authorities' aim to enforce the robustness of the market participants' funding stability. Uncommitted credit facilities are typically cancelled without notice during stress periods, while committed credit lines cannot be cancelled immediately due to their contractual cancellation period.

Under Basel III, committed credit lines will be valued according to CRD IV and the cash reserve ratio (CRR) and will thus have to be backed by core Tier 1 capital. Taking note of the fact that banks value each other on average as a "medium" risk, such credit lines will enter into the Basel III balance at 50% of their volume. This must then be multiplied by the risk weight factor, which can, eg, be done using the internal rating based approach (IRBA), which was already established in conjunction with Basel II some time ago.

The estimation of the savings in additional capital requirements under Basel III is based on the following data:

- Market size: The total settlement turnover can be taken from the ECB statistical data warehouse. For the euro zone, the total settlement turnover in 2011 was at €823 trillion, corresponding to a daily average of €3.3 trillion. Assuming an average to peak ratio of approximately 5, this yields a peak daily settlement

volume of €16.5 trillion, which is the sum that needs to be secured by credit lines according to the new Basel III NSFR requirements.

- Clearstream's internal analysis of the netting effects of pooling cross-border settlement in major markets: We have performed this bottom-up analysis by reviewing the net cash funding requirements over a 153 day period, in intervals of 15 minutes during the full settlement day, and based on cross-border settlement activity in Germany, France, the Netherlands, Belgium and Italy. The analysis then assessed the impact of pooling cash settlements in individual markets to a single cash account. The analysis did not estimate the impact of the harmonisation of settlement cycles in those same markets with T2S, which is expected to increase the netting effects even further. We found that the amount of liquidity that could have been reduced if liquidity pooling had been possible over an entire year (as it will be with T2S), the amount that could have been saved was never (i.e. at no single day) less than 15%.
- Market correlation statistics/market adversity data for the largest European markets (Bloomberg data) to quantify the liquidity savings potential: Market adversity can be estimated from market correlations. For stock markets (as taken from the major stock market indices) in Germany, France, Italy and Spain for the year 2011 market correlation avarages to 83.4% (Bloomberg data), which would result in a market adversity of 17%. The largest part of the settlement notional value however, stems from bond trading. For bonds (again taken from Bloomberg data on major bond indices), the total weighted average correlation is at –21%.
- Rating: an average Fitch rating of A– for market participants, which implies the probability of default to be assumed at 1:1.111 or 0.09% and the risk weight factor RW_{IRBA} to be at 29.55% (Fitch)
- Credit conversion factor (CCF) according to CRD IV/CRR: based on the assumption that banks consider each other, on average, a "medium" risk, we assumed CCF to be 50%.
- The 2012 OECD estimate of the Basel III capital shortfall for a Basel III calculation of capital requirements (taking into account the calculation prescription from CRD IV/CRR and assuming medium credit risk)

2 Quantitative calculation of Basel III relief from T2S

The shortfall relief R_B is calculated as the product of daily settlement turnover (T_S), the amount to which markets go in opposite directions (market adversity C_X), the Basel III credit conversion factor (CCF), the Basel III Risk Weight Factor (RW_{IRBA}) and the 9% that need to be backed with proper capital:

$$R_B = T_S \cdot C_X \cdot CCF \cdot RW_{IRBA} \cdot 9\%$$

For the total settlement volume of the euro zone, we use the value of €823 trillion as mentioned above; market adversity, taken at the mean value of our bottom-up and top-down estimates, is CX=15%. Assuming that banks classify each other's risk on average as 'medium', as per Art. 162 of CRR, leads to a credit conversion factor CCF = 50%, and the average rating of all relevant banks is 'A-' leading to RW_{IRBA} = 29.55%. Inserting those values, the overall calculation looks as follows:

$$R_B = € 16.5 \text{ tn} \cdot 15\% \cdot 50\% \cdot 29.55\% \cdot 9\% = € 33 \text{ bn}$$

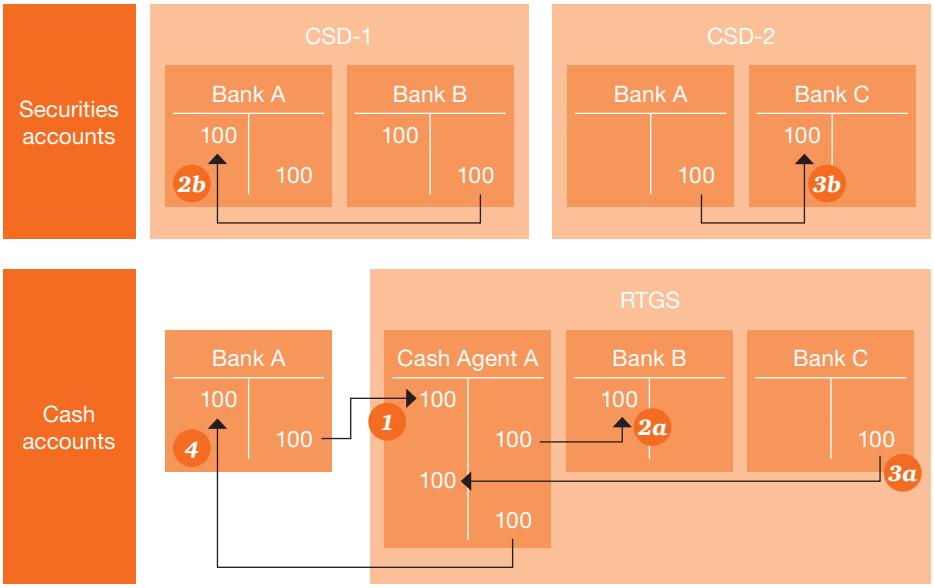
i.e., the amount saved ('total relief') in the cumulated Basel III capital requirements would be estimated at €33 billion. Compared to the estimated total shortfall of €300 billion, this means that T2S would be able to provide relief for about 11% of the total Basel III shortfall.

Fig. 4 Case study pre-T2S

Bank A 1 purchases €100m of nominal French government bonds from Bank B and
2 sells German equities against €100m to Bank C

All banks have direct CSD accounts; Bank A uses an Agent for RTGS cash settlement

Pre T2S: Settlement runs in different CSDs at different schedules on different platforms;
Overnight credit facility needed to fund purchase; credit released the next day after sale



SD–1 18:00
1 Credit consumption: funding by Bank A of bond purchase through liquidity transfer to Cash Agent's A RTGS account

SD–1 19:30
2a Transfer of cash between Cash Agent and Bank B to pay for the settlement of Bank A's bond purchase in CSD-1
2b Settlement of the bond purchase (RVP) in CSD-1

SD–1 23:00
3a Transfer of cash proceeds between Bank C and Cash Agent A in connection with Bank A's equities sale in CSD-2
3b Settlement of the equities sale (DVP) in CSD-2

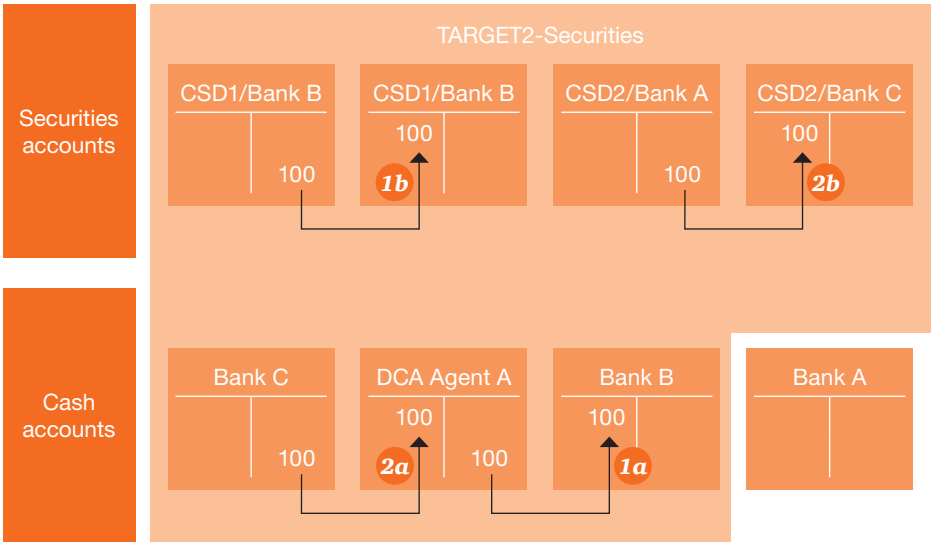
SD 10:00
4 Credit release: Credit of equities sales proceeds by Cash Agent to Bank A's account

Fig. 5 Case study post-T2S

Bank A 1 purchases €100m of nominal French government bonds from Bank B and
2 sells German equities against €100m of to Bank C

All Banks have direct CSD accounts; Bank A uses an Agent for RTGS cash settlement

Post T2S: All securities settlement bookings simultaneously in one single settlement run within T2S;
All payments within the same batch run within T2S vs one single dedicated cash account (DCA)



SD–1 19:30
1a Transfer of cash between Cash Agent and Bank B to pay for the settlement of Bank A's bond purchase.
1b Settlement of the bond purchase (RVP) in T2S-CSD-1 accounts
2a Transfer of cash proceeds between Bank C and Cash Agent A in connection with Bank A's equities sale
2b Settlement of the equities sale (DVP) in T2S-CSD-2 accounts

Reduction of credit lines for settlements will thus provide relief to the lenders' Basel III balance. Since these credit lines will exist only to back the NSFR quota, borrowers will immediately reduce such credit lines if their funding ratio decreases, i.e., if they manage to reduce their liquidity needs in a sustainable way. Many of the current regulations, however, point in the opposite direction. In particular, EMIR will increase the need for liquidity due to CCP clearing and subsequent margin requirements (where variation margin must be provided daily in cash). Thus the cash pooling enabled by T2S, which in effect will support the break-up of the current silo between securities and cash location for settlement purposes, will be of major importance.

T2S cash pooling will reduce liquidity in a sustainable way and by a significant amount, essentially by allowing the re-use of cash received from securities sales for securities purchases in the same settlement run. Opening up the cash pooling scope for 23 CSDs participating in T2S enlarges what is already possible today for some of the single markets individually. In the future, it will be possible to purchase securities in eg, Italy and fund these payments with the revenues generated from eg, securities sold in Spain on the same day. Any market participant can assess from his (historic or projected future) market exposure the amount of liquidity that can be saved through this effect.

3 Relief on the requirements from AIFMD

As pointed out earlier, AIFMD imposes liability risks on custodians for loss of assets. This risk is significant, since the equity capital of custodians is usually very small compared to the sum of assets they hold under custody. While AIFMD still leaves some (very narrow) ways out of this liability (eg, due to force majeure), these will not be possible any longer under UCITS V. Exemptions from the liability can be contractually arranged under very narrow conditions, eg, if the custodian has no choice for delegation of custody in the respective country and if the investor does not forfeit his entitlement for compensation through this exemption. Practically speaking, custodians will have to face this liability, and this is actually exactly where they seek to prepare themselves accordingly.

One challenge with the calculation of asset liability is that the probability of loss is very low, while the damage in case of loss would be very high – potentially much higher than any custodian could stand. Such 'fat-tail-risks' are always difficult to calculate, and the difficulties further reinforce the fact that there are very few empirical examples from where one could deduct robust figures for risk calculation.

„T2S is seen as a major opportunity for network provider consolidation in Europe"

Uwe Loose, Commerzbank, Head of Funds & Custody Services

If assets are held with a Securities Settlement System as defined in the Settlement Finality Directive, this is explicitly not considered a delegation in the sense of AIFMD, thus the chain of custody delegation always ends at the CSD. This opens the opportunity for custodians to reduce their liability risk or even avoid the quantification of such a risk (given the difficulties with the calculation mentioned before) if they hold the assets directly with the CSD.

The market study we have undertaken revealed that many custodians have started projects to analyse exactly this scenario, i.e., there is a trend of shortening the sub-custody chain as a consequence of AIFMD. Of course, this has some side effects: sub-custodians perform more services than the intermediation of safekeeping, and decisions to undergo sub-custody and to avoid opening up direct connectivity with many CSDs were taken for good reasons at the time.

However, the arguments for such decisions have changed on both ends of the argumentation chain. First, given the arguments laid down before, the custody delegation has become less attractive. Second, with the advent of T2S, establishing direct connectivity with a CSD will become much less cumbersome than it was in the past – at least for those markets that form part of T2S. This will, in part, be supported by some CSDs' plans to establish mutual links with each other and to enable increased centralisation of the safekeeping of assets across a reduced number of CSD locations in combination with the demand for an account operator model to continue to access the extended services of an agent bank.

G What else is on network managers' agendas?

While the survey we undertook indicated that challenges perceived by the decision-makers are very similar, the answers to these challenges in terms of measures set in place differ according to their business and to their position in the market. In many cases, the measures currently receiving highest priority were due to internal programmes, like cost-cutting or the overhaul of their IT systems. Yet, the latter is often related to the topics described in the last section, since many are seeking for ways to downsize their systems, which had been designed at times of growth and are now too big (and too costly) at times of consolidation after the crisis.

Others are engaged in far-reaching restructuring and legal entity consolidation exercises in Europe, i.e., they push for a concentration of business to their main European hub. The main objective behind this consolidation is to decrease the regulatory burden, streamline operations, pool capital and liquidity (which requires one single account, i.e., one single entity behind) and reduce liability risks.

Prerequisite for such kind of pooling is to have the accounts on one single entity, which is one of the drivers for the consolidation processes currently running in many firms. Subsidiaries currently located in many European countries are turned into branches of one single hub for all of the EU resp. Eurozone business. Nonwithstanding and complementing this consolidation we also see an increased trend for nearshoring from the remaining single European hub to improve operational and IT related cost efficiency.

Next to risk reduction, sourcing and managing collateral is the most important area of focus for financial institutions which are expending many efforts to improve its availability and optimise its usage. T2S creates additional opportunities in this space not only through the liquidity savings described in earlier chapters, but by also improving the mobility of collateral to where it is needed. Indeed, by internalising settlement and harmonising processing cycles across 23 CSDs, T2S will remove much of the cost and labour associated with moving securities cross-border, eliminating some of the fragmentation and over-collateralisation that characterise the market today. This will be a critical improvement in an environment where EMIR and Dodd Franck are expected to create additional pressure on collateral availability, and will introduce some buy-side institutions to the requirement for the first time to source and deliver margin collateral to a clearing broker or CCP.

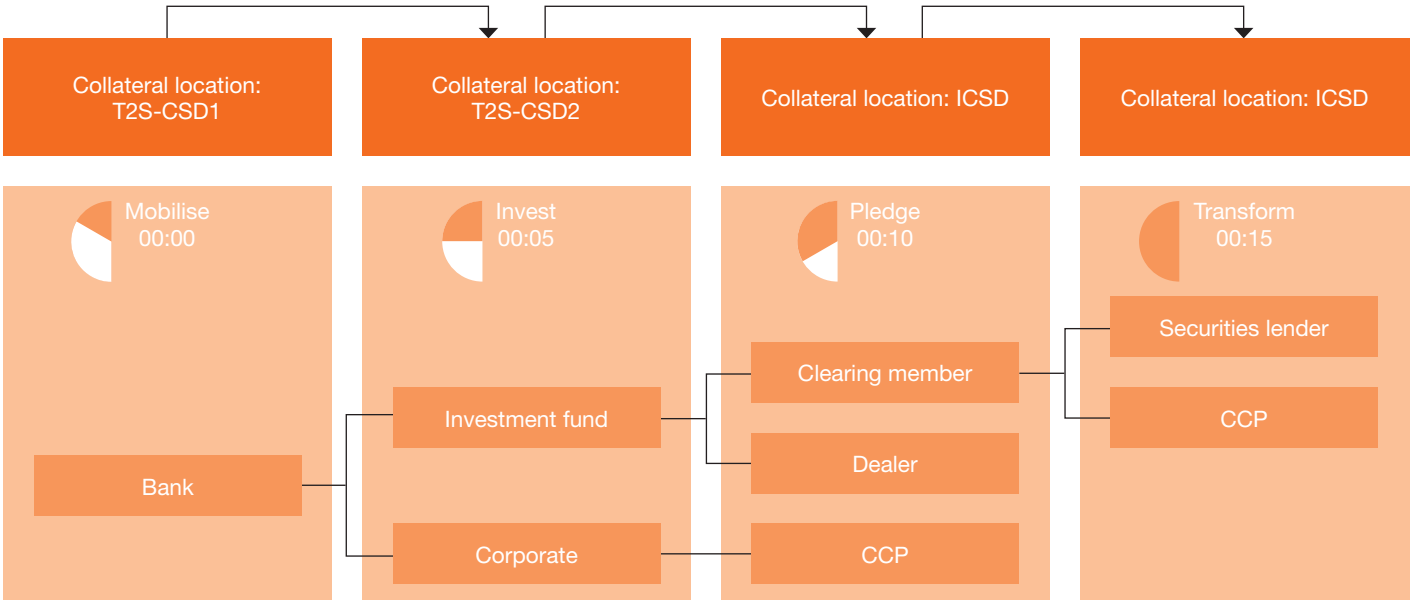
Fig. 6 Illustrative example



Currently, consolidation processes to turn subsidiaries into branches. Often this results in one single hub for all of the EU resp. Eurozone business.

Lastly but equally important, the availability of the auto-collateralisation feature in T2S to finance trade settlement activity based on flow in addition to available stock, which today is not uniformly available or used in all participating CSDs, will provide market participants with an additional tool to optimise their collateral allocation and consumption. The challenge of quantifying the efficiency effects of T2S on collateral allocation is probably one of the main reasons this has received little attention so far, but our analysis demonstrates that opportunities exist to achieve significant capital savings in this area too.

Fig. 7 New collateral streams arising by the introduction of EMIR and Dodd Franck



Case study: In response to the additional collateral requirements under EMIR and Dodd Franck, banks are looking more and more to mobilise assets and to increase access to buy-side liquidity to diversify their funding sources. Buy-side institutions, in turn, are looking to leverage the collateral received from the banks to re-use and cover CCP/third-party margin obligations. In some cases, this may need to be supplemented with a collateral transformation trade to meet the collateral eligibility criteria of the third party. Inter CSD settlement of a chain of collateral movements can be settled in a matter of minutes in a world with T2S.

H Summary and conclusion



We conducted a market survey in the securities post-trade processing sector based on internal research and limited focus interviews with market participants that were divided into four market segments. We elaborated on the main decision-drivers for each of these market segments and the effects these drivers had on the market participants. We found out that Basel III and AIFMD/UCITS V are the most important topics for decision-makers these days due to their influence on the risk positions held by market participants. In particular, both these regulations will impact capital needs to back the corresponding risk positions, and we have referenced an OECD study which quantifies the shortfall resulting from these risk positions on the overall market at €295 billion for the euro zone.

We related this shortfall to the credit needs of banks to fund their settlement activities, assuming that the banks would rate themselves as a "medium risk", assuming an average rating of "A–" (Fitch). These credit needs will have to be backed by agreed upon credit lines according to Basel III's NSFR requirements, which means that they will also enter into the lenders' Basel III balances.

In order to assess the potential relief that T2S can provide to this challenge, we examined both a bottom-up analysis and a top-down estimate of the liquidity that could be saved in settlement funding according to the pooling effect provided by T2S. Both estimates indicated that the liquidity savings potential enabled by T2S will be at least 15% of the total settlement turnover. Assuming that the saved liquidity for settlement funding will be immediately used to reduce the corresponding credit lines, and considering the assumptions on average credit-worthiness referenced above, we calculated a potential reduction of the markets' overall aggregated Basel III positions at €33 billion or 11% of the shortfall identified by the OECD study in 2011. The positive effect T2S had on liquidity and on the capital needed under Basel III is significant in our opinion and, as far as we could observe during the market study, not sufficiently appreciated by the market participants in their strategies with respect to T2S.

Liability, as it will be imposed under AIFMD and UCITS-V, was another major topic discussed in the market. First of all, this is a problem in itself, since assets held in custody are often huge compared to the custodians' capital bases. In addition, such liability risks feed back into the Basel III balance, where they must be backed with Tier 1 core capital, making it extremely expensive for custodians to have such risks in their balance. T2S can bring relief here by offering an option to establish consolidated CSD connectivity, i.e., to become direct with all assets held without the need to establish business relations with all 23 CSDs participating in T2S.

Finally, an area where T2S could provide a major contribution is the mobilisation of collateral, responding to another predominant challenge in the financial markets. Liquidity, as pointed out above, is the key resource in today's markets and collateral is the facilitator to mobilise it, eg, for auto-collateralisation, repo trades, etc. In addition, collateral is even more demanded by EMIR with its obligation to collateralise bilateral, OTC-derivative trades and to centrally clear standardised OTC-derivative trades, which again is only possible if sufficient collateral is mobilised at the right time and place.

In summary, rather than just providing a solution to lower cross-border settlement costs, T2S should be seen as a core element to any financial institution's reviews of their target operating models to support their revised business model formulated in response to the new regulatory environment.

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