Collateral Management

A survey of the current practices and trends in the banking industry

June 2014

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Preface

Collateral management has been a key area where regulators and financial institutions have been focusing since the failure of banking institutions following the subprime and interbank crisis.

In the aftermath of the liquidity crisis, banks started overhauling their collateral management framework and focused on margin call management, working towards compulsory clearing by the end of 2014.

It is with great pleasure that we present this Collateral Management Survey, undertaken by Deloitte on an international scale, predominantly across the European banking industry.

The aim of this survey is to provide practitioners with a benchmark of readiness for upcoming challenges in the collateral management area.

We would like to express our thanks and appreciation to the participating individuals and institutions for the time that they kindly dedicated to this survey.

We trust that you will find this survey insightful and timely.

Executive summary

After the subprime crisis, many market mechanisms were overlooked due to the lack of liquidity and the blocking of the interbank market, in particular in Europe. The first impact observed was the discrepancy between the OIS and Libor/Euribor rates which impacted derivative valuation. This observation was a symptom of a deeper phenomenon: the need to evaluate the actual funding costs of the derivative business and, by extension, the need to manage the liquidity and collateral in order to optimize these costs.

Taking into account lessons learnt from recent financial events, regulators at both international and jurisdictional levels have taken a series of initiatives aimed at introducing collateral requirements in the derivatives markets, so as to reduce potential consequences of a major bank's failure. Central clearing will become mandatory to a large extent and regulatory margin requirements will apply on non-centrally cleared derivatives.

In parallel, the new accounting rules have also taken steps, for example the enforcement of IFRS13, which result in the integration of liquidity costs (Funding Value Adjustment -FVA) in derivatives valuation. Those accounting and regulatory initiatives have led many banking institutions to undertake important changes in their collateral management framework and practices.

Given the aforementioned context and since the required changes to collateral management practices are on-going, the present survey was conducted in order to gauge the current trends in the banking industry, mainly in Europe, in the three following areas:

- Collateral features focusing on nature and volumes, counterparty concentration and collateral pricing;
- Governance around collateral management;
- IT capabilities to retrieve information on collateral.

The first part of this survey sets out the volumes and nature of margin calls, how these are split among different counterparties and how these are financed. Due to the upcoming enforcement of the EMIR Clearing Obligation, there is a specific focus on CCP cleared trades.

The second part presents current challenges banks are facing with collateral governance.

Finally, the survey presents an overview of the current bank IT capabilities: since financial institutions must map various data to manage collateral daily, they need to work with efficient data processing.

The findings of the survey amount to four key messages shown below.

Collateral volume and nature

In the current context, OTC bilateral derivatives represent around 85% of the funding needs with an overwhelming use of cash.

The survey reveals that only few respondents currently use clearing services although all institutions are aware that the EMIR clearing obligation, that should come into force by the end of 2014, will force them to do so. When respondents use clearing services, the vast majority of the margin calls (90%) are borne in cash and attributed to variation margins. The remainder comes from initial margins which can be financed in securities.

Beyond EMIR clearing obligation, the BCBS standards on margin requirements for non-centrally cleared derivatives will also require an independent amount for OTC bilateral derivatives.

In this context the collateral needs will dramatically increase and it is necessary to be able to optimize collateral in a context where collateral resources are likely to become scarce.

Collateral pricing

With reference to optimisation between cash and securities, the survey illustrates that there is still room for improvement in the inclusion of the funding costs into the derivatives valuation.

At this stage it is still a cumbersome exercise to compute the actual derivatives cost of funding and to allocate the cost at various granularity levels. The majority of the respondents (70%) declare computing the cost of funding for cash, and some also for securities. The cost allocation at book level is currently the market standard even if the target is allocation at trade level.

Governance surrounding collateral management

The increasing needs of collateral also require a more integrated collateral management framework for all financial institutions.

The survey shows that governance around collateral management has been implemented by 80% of the respondents and a specific team or unit has been set-up with front office or treasury reporting. The mission of this team includes collateral optimization that is mainly performed to manage constraints instead of maximizing profits: the team is considered a cost centre.

IT capabilities

In order to effectively manage collateral it is necessary to have data available. According to the survey, some respondents have built tactical solutions based on IT architecture in which only relevant data is available and centralized in a single database. Even if 80% of participants are satisfied with the current IT capabilities a further step towards a strategic solution will be expected in the near future.

Glossary

B/O Back Office

CCP Central Counterparty Clearing House

CSA Credit Support Annex

EEPE Effective Expected Positive Exposure

EMIR European Market Infrastructure Regulation

F/O Front Office

FVA Funding Value Adjustment

KPI Key Performance Indicators

LCR Liquidity Coverage Ratio

MTA Minimum Transfer Amount

OIS Overnight Index Swap

OTC Over The Counter

Survey methodology

This survey has been jointly conducted by Deloitte across banking organizations significantly active in the derivatives markets in Europe and South Africa.

The survey was led through a questionnaire method which included a multiple choice and a qualitative section. The number of open questions was deliberately limited to areas where qualitative information was particularly relevant and to ensure greatest comparability of answers.

During the last quarter of 2013, 14 banks from several EMEA countries were surveyed. The responses provided reflect the participants' situation prevailing at that time. Changes may have occurred in the period since then.

The participant responses differ with regards to the level of details provided in relation to all sections and questions, especially regarding quantitative answers. In addition, the responses received reflect the type of operation and complexity of participants at that point in time. The answers have been anonymised and analysed in order to identify main market trends and the upcoming challenges.

The survey respondents are made up of different types of financial institutions. The participants were split between Tier 1 (50%) and Tier 2 (50%) based on the size of the balance sheet as well as the role of Capital Market activities within each business model. The split between Tier 1 and Tier 2 has been shown whenever it was relevant.

The survey results are provided in 3 sections: firstly, quantitative background information concerning the volumes and nature of margin calls, the counterparty concentration and the collateral pricing, secondly, collateral management governance and relationships of the collateral management function with other supporting functions and business lines and thirdly, collateral management IT capabilities, including IT architecture in place, data availability and enhancements required in this area.

Introduction

Over the last few years the way of trading OTC derivatives has evolved: non-collateralized OTC transactions have decreased, leaving space for cleared and collateralized (via CSA) OTC transactions. Participants involved in OTC derivatives transactions rely more and more on collateral as a risk mitigation technique.

The financial crisis has highlighted major deficiencies within the OTC derivative market, with relevant issues in terms of counterparty credit risk and systemic risk. These include inadequately collateralized bilateral exposure, lack of transparency, and difficulty of both the regulators and the market to accurately gauge any deterioration in the credit worthiness of OTC derivatives counterparties.

These deficiencies gave birth to a new regulatory landscape where policy makers and regulators have proposed new regulations to channel all OTC derivative contracts. This will be done through:

- exchange traded markets with clearing through central counterparties,
- increased capital requirements for non-centrally cleared contracts,
- collateralisation for non-centrally cleared derivatives.

These new regulations have raised new issues that need to be carefully considered and addressed by all concerned market players:

- capital requirements for counterparty risk have been strengthened under Basel 3 (CVA, stressed EEPE, etc.) but may be significantly reduced, in accordance with the collateral received,
- collateral posted may lead to additional capital requirements,
- central clearing and margin requirements will compete with liquidity requirements for high quality liquid assets and collateral requirements will increase liquidity needs.

As a consequence of the new regulatory landscape, banks will have to strengthen and optimize their internal collateral management processes and reduce collateral traps as much as possible.

This survey was designed to gain a complete perspective of the financial institutions' readiness for upcoming regulatory and operational requirements and changes.

The scope of interest is consequently to assess the participants' ability to monitor and optimize the collateral consumption borne by their derivatives activities in the new regulatory landscape covering all asset classes through margin calls within bilateral OTC, cleared OTC, as well as listed derivatives.

Out of scope are the transactions performed only with the aim of refinancing the derivatives business, namely repos (Cleared & OTC bilateral) and equity lending and borrowing as these activities are optimized by nature.

Survey findings

1. Collateral features

The section provides an overview on main collateral features, focusing on volumes and nature of margin calls, counterparty concentration and collateral pricing. Due to the upcoming enforcement of the EMIR clearing obligation, there is a specific focus on CCP cleared trades.

1.1. Volume and nature of collateral

In the survey the collateral needs of the participants are investigated in order to have a view of their overall collateral availability (cash and securities). This considers bilateral OTC, cleared OTC and listed derivatives.

A large majority of respondents to the survey were actually in a position to provide quantitative information regarding OTC derivatives, both bilateral and cleared. This was not the case however for listed derivatives, for which almost no responses were provided: in 3 banks only, the collateral management unit was in a position to provide such figures.

Collateral needs mainly come from bilateral OTC which amount to 85% of the overall margins, either posted or received. On bilateral OTC, the average yearly amount of received and posted collateral averages about €13bn that can be divided in €17bn for respondents in Tier 1 group and €10bn for Tier 2 institutions.

Figure 1: *What is on average, over the past two years, the order of magnitude of yearly margin calls involved in your derivatives business activities?*

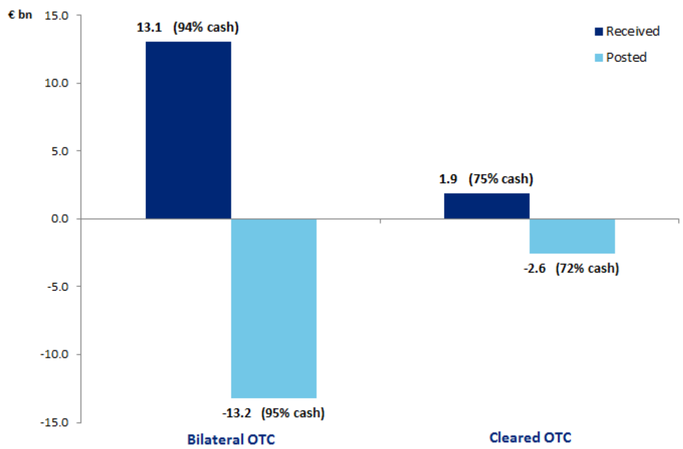


Figure 1.a: *What is on average, over the past two years, the order of magnitude of yearly margin calls involved in your derivatives business activities with Focus on Tier 1 institutions?*

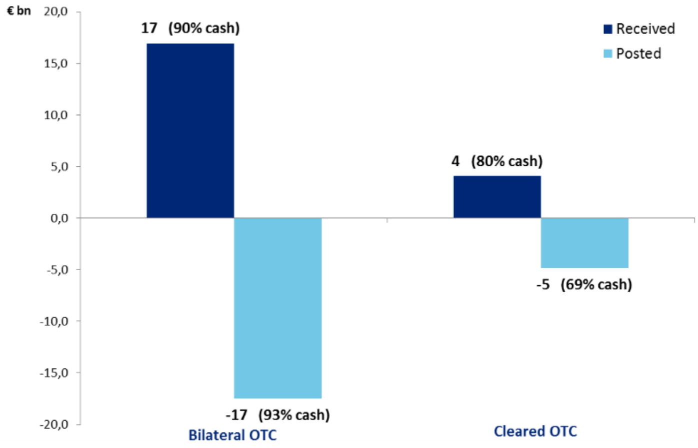
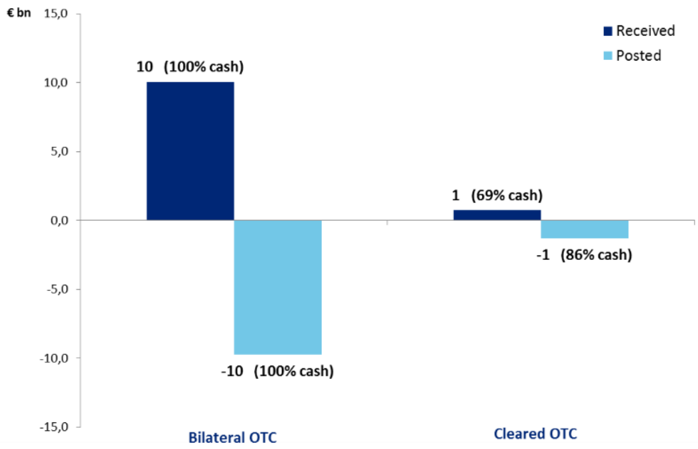


Figure 1.b: *What is on average, over the past two years, the order of magnitude of yearly margin calls involved in your derivatives business activities with focus on Tier 2 institutions?*

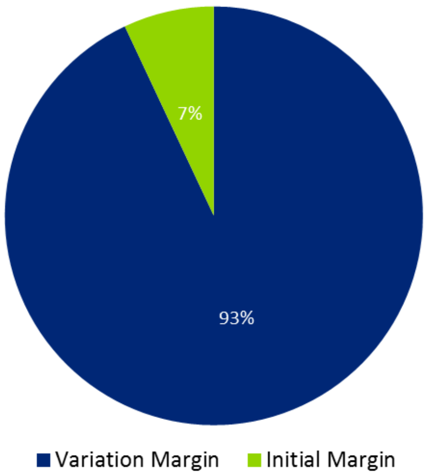


Moreover, the survey underlines that the portion of OTC derivatives that are subject to central clearing is lower than could have been expected, since only half of all respondents currently state that they centrally clear derivatives via a CCP at least for a portion of their derivatives portfolio. The majority, that do not use central clearing at all, are actually planning to do so in the near future, in order to align themselves with the new regulation.

The received collateral averages approximately € 1.9bn that can be divided in €4bn for respondents in Tier 1 group and €1bn for Tier 2 institutions.

The vast majority of the margin calls for cleared OTC is attributed to **variation margins** (93%)**,** and only 7% to **initial margins.**

Figure 2: *Split between initial and variation margins on average for all respondents on centrally cleared derivatives*



Focusing on a collateral nature there is an overwhelming use of cash: approximately 95% for bilateral OTC and 75% for cleared OTC.

1.2. Counterparty concentration

Although margin calls may involve hundreds and sometimes thousands of counterparties, the answers to the survey demonstrate that actual margin calls are concentrated on a few counterparties. The majority of the participants (over 60%) answered that more than 80% of the net margin volumes were attributed to less than 20 counterparties.

It is important to underline that this concentration is particularly predominant amongst the Tier 1 respondents.

Figure 3: *For net margin calls, how many counterparties represent 80% of the yearly total amounts?*

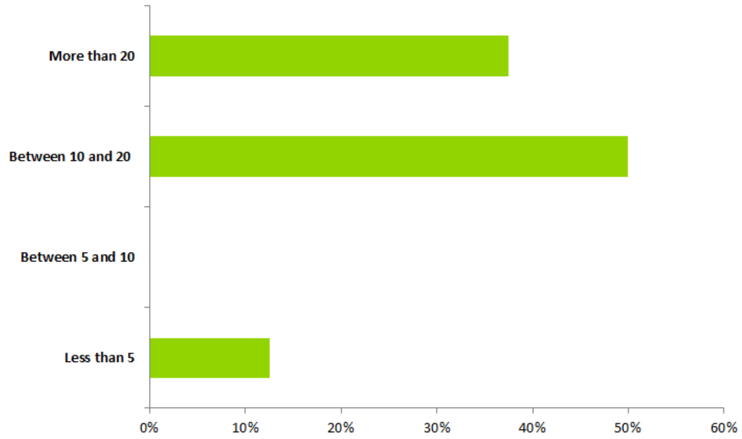


Figure 3.a: *For net margin calls, how many counterparties represent 80% of the yearly total amounts? Focus on Tier 1 institutions*

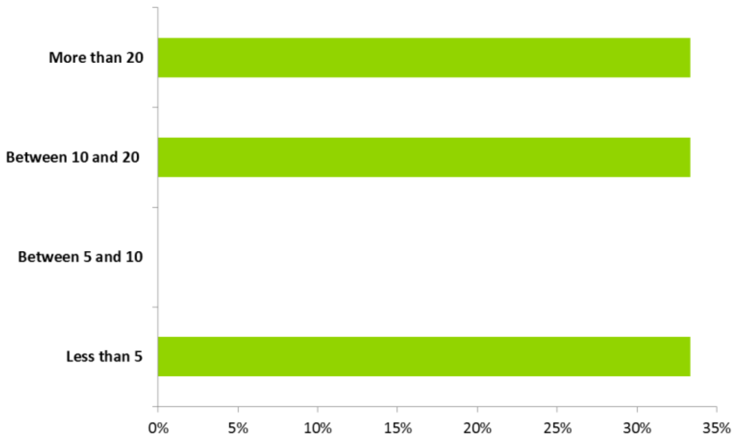
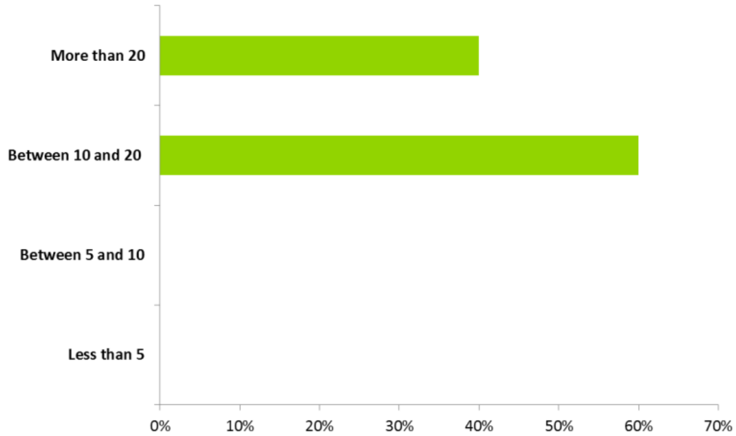


Figure 3.b: *For net margin calls, how many counterparties represent 80% of the yearly total amounts? Focus on Tier 2 institutions*



1.3. Collateral pricing

The corner stone of collateralization is the transformation of counterparty risk into liquidity risk. Even if the proper measurement of this liquidity risk can be a very challenging issue, best practices for managing the related liquidity risk focus on collateral pricing and, in particular, on the calculation of funding cost relating to margin calls of collateralised deals.

The large majority of respondents (70%) declare computing the funding cost of the margin calls for cash collateralized deals. Whereas, only 53% of respondents compute the funding cost for both cash and securities collateralized deals.

In particular all the Tier 1 respondents are able to compute the margin calls for cash collateralized deals, and 83% of them also for securities. Whereas only 43% of Tier 2 participants are able to do it for cash and 30% also for securities.

Figure 4: *Do you have the ability to compute the funding cost of the margin calls for collateralized deals? If yes, at which level do you have the ability to allocate the cost of the margin calls?*

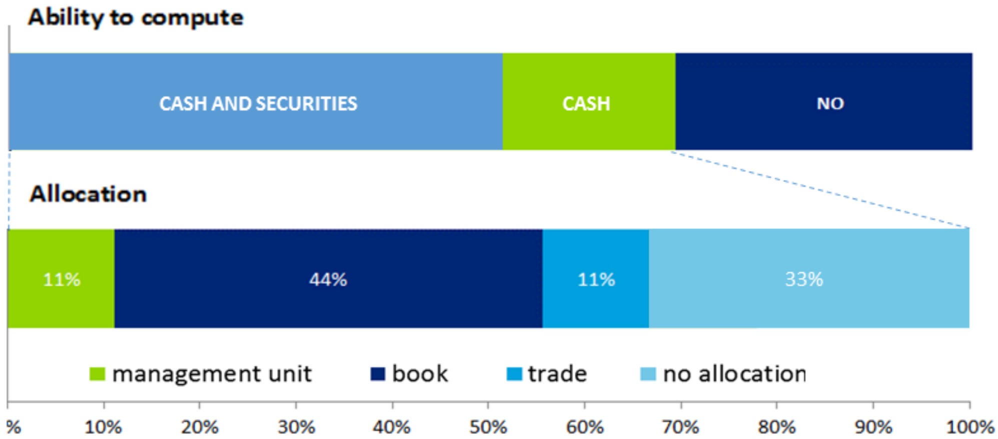


Figure 4.a: *Do you have the ability to compute the funding cost of the margin calls for collateralized deals? If yes, at which level do you have the ability to allocate the cost of the margin calls? Focus on Tier 1 institutions*

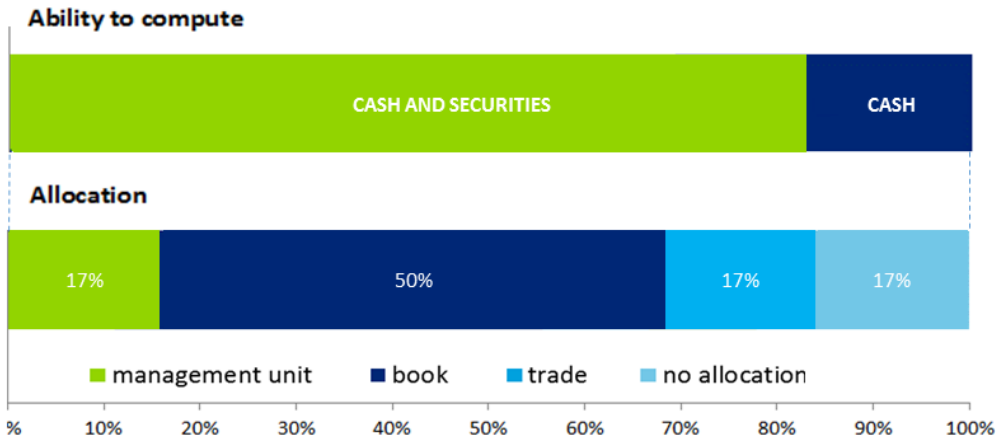
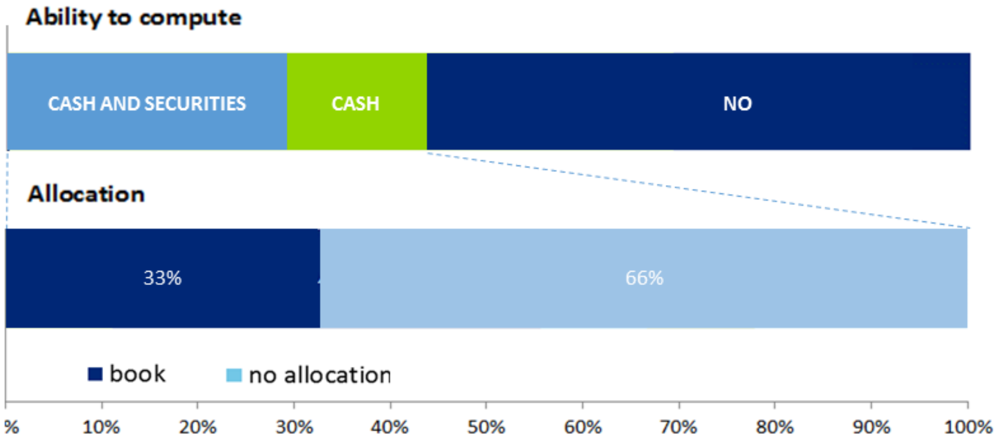


Figure 4.b: *Do you have the ability to compute the funding cost of the margin calls for collateralized deals? If yes, at which level do you have the ability to allocate the cost of the margin calls? Focus on Tier 2 institutions*



Different practices were observed when allocating this funding cost in terms of granularity.

Among banks that are able to calculate collateral funding costs, the largest portion (44%) allocate the cost of the margin calls at book level, while 33% have no allocation mechanism at all even if they calculate the margin costs. One bank only (11%), which is part of the Tier 1 cluster, allocates collateral funding costs at trade level, which represents the target solution.

Tier 1 respondents allocate the cost mainly at a book level (50%), which is currently the market practice. None of Tier 2 participants, that compute the funding costs, allocate the cost of the margin calls further than book level.

2. Governance

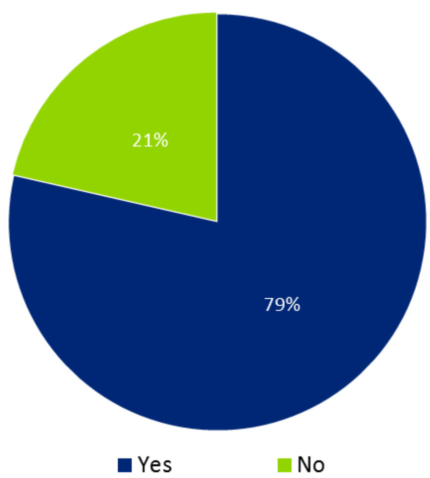
The increasing collateral requirement stemming from OTC derivative transactions has a significant impact on the current business model: financial institutions must improve it in accordance with upcoming regulatory requirements and the related business challenges.

This enhances the need for designing a collateral management model and setting-up a dedicated team. Thus, collateral management is a service unit directly connected to the market with a central role in the firm's organization. Its main tasks are to monitor and effectively manage collateral needs, for instance, daily collateral portfolio reconciliations, selection, and optimization of a wide variety of collateral assets, to coordinate with other units in relation to collateral issues and to interact directly with market counterparties, custodians, and CCPs.

2.1. Team set up

The survey underlines that the setting up of a collateral management unit has become a standard practice among respondents since only 20% of them do not have a dedicated team and are planning to set it up in the coming year; less than 10% have ongoing projects to do so.

Figure 5: *Do you have a team dedicated to collateral management?*

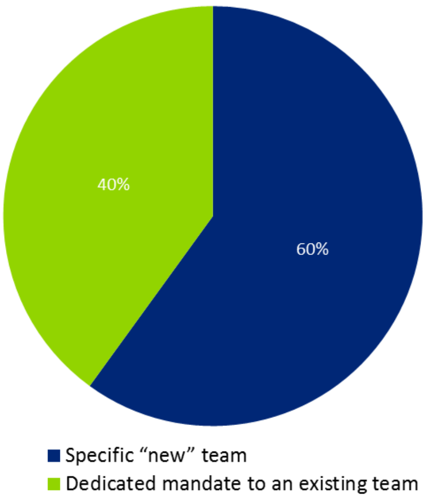


The majority of respondents (64%) have only one unit dedicated to collateral management that can manage both cash and securities collateral, underlining that is not common to separately manage these two components. The percentage is the same for both Tier 1 and Tier 2 financial institutions.

When there are more units dedicated to collateral management (15% of respondents), more complex business models are in place with the presence of both a front office and back office team dedicated to collateral activities.

The size of the collateral management unit (defined by its number of full time equivalent - FTE) can vary from one bank to another depending on its mandate but with a predominance of teams of less then 10 FTE. On average the collateral management units comprise about 6 FTE (8 for Tier 1 versus 5 for Tier 2 respondents). It is also worth noting that, at a majority of respondents (60%), the collateral management unit has been established as a specific and well identified “new” team rather than extending the mandate of an existing team, even though this latter option has been chosen by 40% of respondents

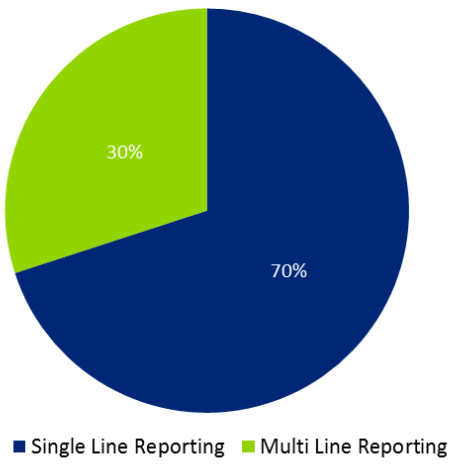
Figure 6: *How did you set-up that team?*



2.2. Team reporting

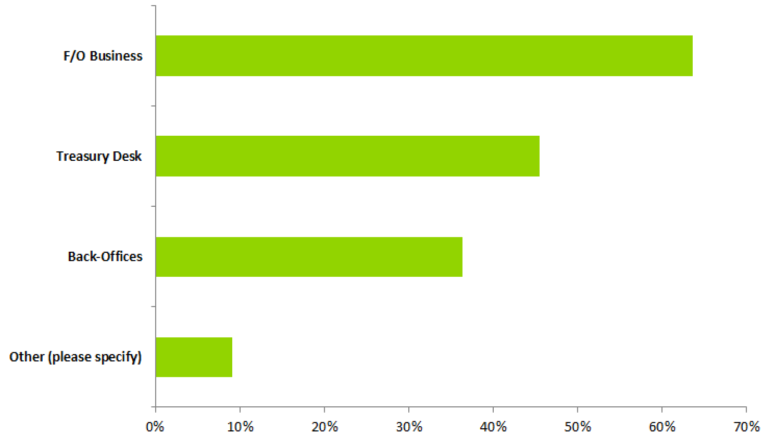
Regarding the team reporting, 70% of respondents have stated that the collateral management units report to only one function. However, in some cases (30%), the collateral management unit appears to be a more independent entity with different interlocutors among both business lines and supporting functions. In such cases they must accommodate several reporting lines.

Figure 7: *Does the collateral team report to a single function / business lines?*



The survey results indicated that the collateral teams mainly report to the front office (64%), to treasury (45%) and to the back office functions (36%).

Figure 8: *To which function / business line does the team report? (Results of multiple choices)*



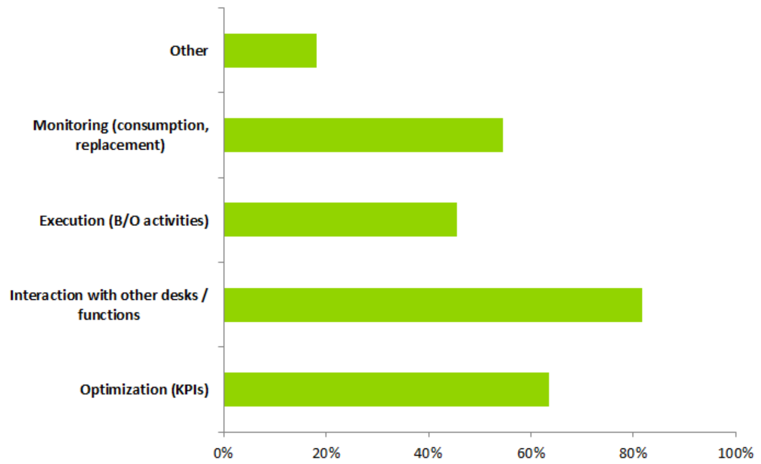
The collateral management unit must be integrated into the organizational structure with a clear attribution of roles and responsibilities. Beside this unit, additional functions are involved in the collateral management process, interacting with and supporting the collateral management unit. In particular:

- Front Office: selects CCPs and counterparties for bilateral agreements (CSA and netting);
- ALM: monitors and minimizes mismatches due to collateral flows and optimizes profitability and capital absorbing;
- Financial Control: calculates P&L on collateral and margins posted and received;
- Legal: conducts negotiations, drafts and reviews agreements. Verifies legal enforceability of CSA and netting agreements;
- Risk Management: defines and calculates risk measures and capital requirements, monitoring compliance with regulatory requirements. Moreover, it interacts with the collateral management team on a daily basis in order to evaluate risks (application of collateral haircuts, concentration risks, collateral stress tests, …);
- Lending: researches, analyses and sets collateral requirements for new and existing counterparties, reviewing, preliminarily and periodically, the credit risk of each counterparty;
- Back office – Accounting: registers the collateral posted and received, calculating interests arising from collateral and carrying out reconciliations;
- IT: provides software and IT support and manages the CCP connectivity. Ensures that data on collateral is available in a timely and flexible manner.

2.3. Team mandate

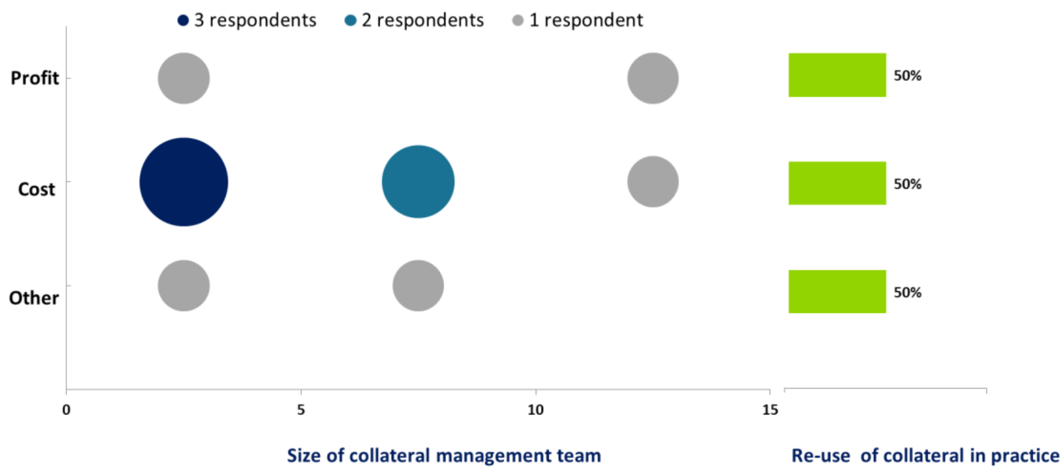
On this point the survey found that the mission of the collateral management team is to price and monitor collateral, optimize costs (e.g. due to clearing obligations), cooperate with the teams that are in charge of counterparty risk and funding valuation issues. 64% of respondents have defined collateral optimization as part of the team mandate and 82% of participants underline the relevance of the interaction with other desks like ALM, CVA and other functions like back office.

Figure 9: *What is the team's mandate? (Results of multiple choice)*



Among the participants that have a dedicated collateral management team, the collateral optimization mandate has been further investigated, focusing on collateral re-use and profitability of collateral units. In particular through re-using collateral, the optimization mandate on bilateral OTC derivatives is achieved.

Figure 10: *Does the team re-use the collateral received as margin calls, in relation to team dimensions and is this team considered a profit or cost centre?*



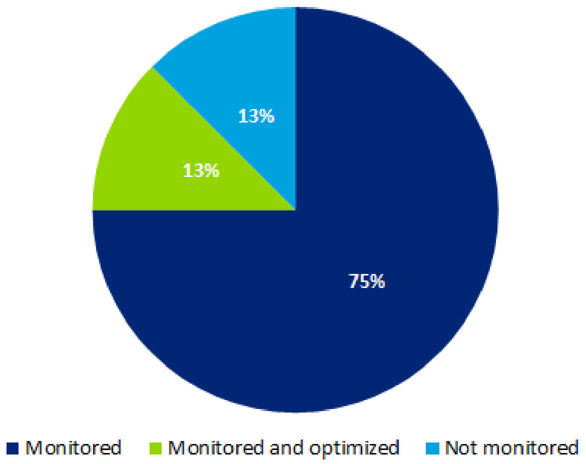
The new regulatory reforms on OTC derivatives will limit the collateral re-use both for cleared and uncleared derivatives, imposing collateral segregation in particular on independent amounts (bilateral trades), and initial margins (cleared trades), that have to be available and fully protected.

The survey highlighted that half of all respondents re-use the collateral received as margin calls.

Another important element that can be observed is that collateral teams are not predominantly considered a profit center (only 20% do so). Based on the survey result that most teams considered themselves as a cost center, it emerges that collateral optimization is performed to manage constraints instead of maximizing profits.

For cleared derivatives, optimization is more complex, in particular on initial margins because they are calculated by CCPs using specific algorithms that have to be replicated in order to be able to estimate and to optimize initial margins. In this regard, even if the vast majority of institutions (88%) monitor initial margins separately from variation margins, only 13% of participants are able to replicate the initial margin calculation of the CCPs and therefore are able to optimize them.

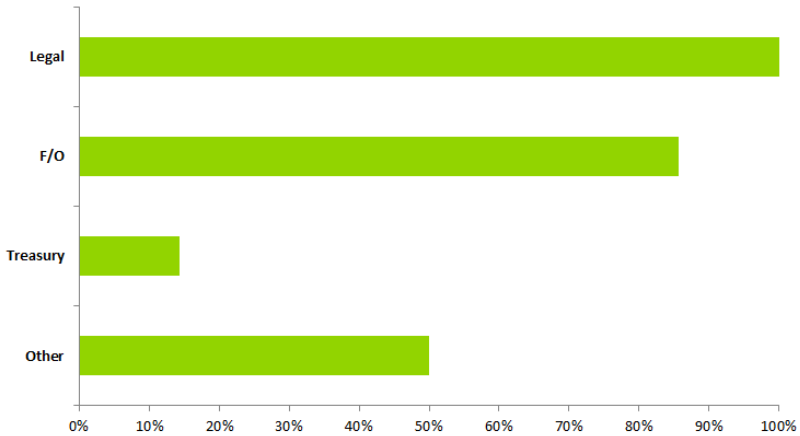
Figure 11: *Are the initial margins monitored separately? If yes, do you optimize the initial margins in a different way than the other margin calls?*



2.4. CSA governance

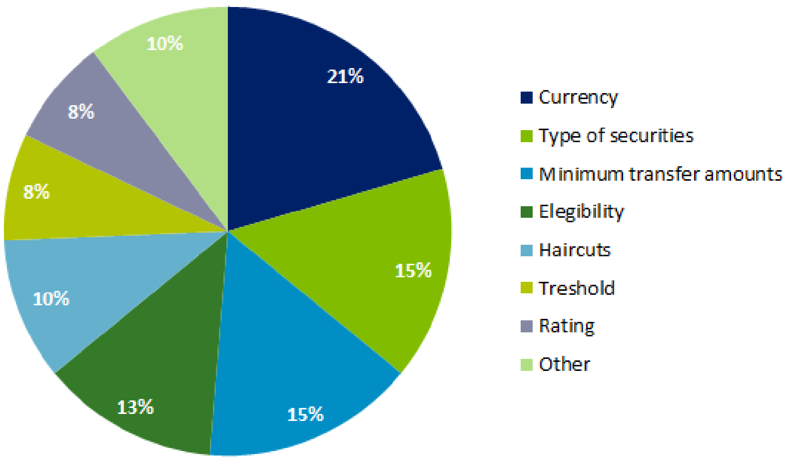
With reference to the CSA governance, all institutions have their CSA agreements monitored and enforced by their legal department (100%) with front office involvement (86%).

Figure 12 *Who are the stakeholders involved in the CSA negotiation process? (Results of multiple choice)*



Regarding the key criteria in the CSA set-up, the survey underlines that the main choices are currency, eligibility and type of securities that can be posted as well as thresholds and minimum transfer amounts.

Figure 13: *What are the top three key clauses related to collateral acceptance in order to ensure proper collateral management?*



3. IT capabilities

As banks must map various data for the daily management of collateral, they need to work with efficient data processing. The main data requirement is to extract available collateral to ensure effective management.

3.1. Database capabilities

The survey highlights that collateral data is not spread out into multiple databases but is centralized in a single database (57% of respondents), within a single IT system. This percentage is lower for Tier 2 (only 43% versus 71% for Tier 1) which brings to attention the necessity for further improvements in this area.

Figure 14: *What are your current database capabilities on the total collateral amounts in the form of securities that are available and utilized?*

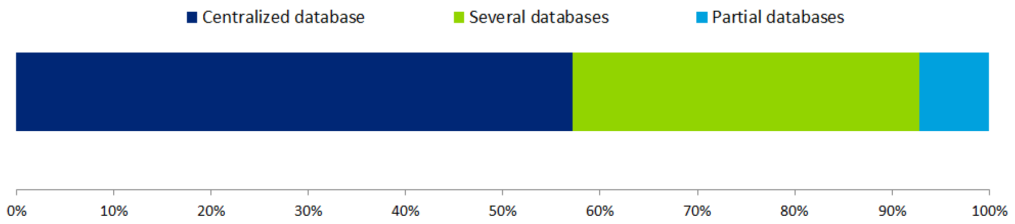


Figure 14.a: *What are your current database capabilities on the total collateral amounts in the form of securities that are available and utilized? Focus on Tier 1 institutions*

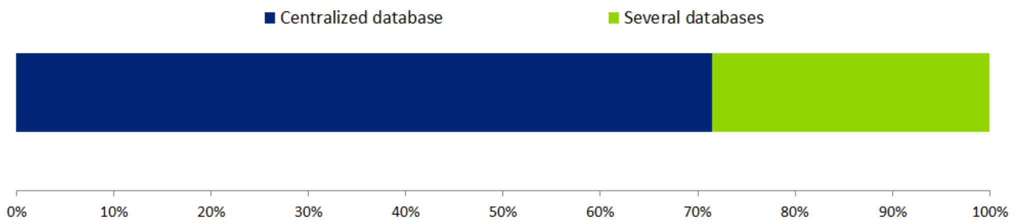
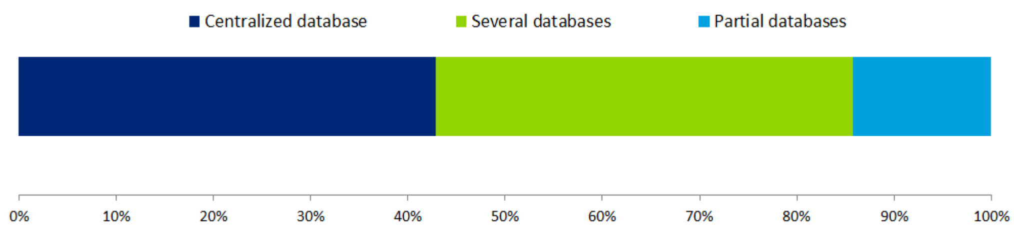


Figure 14.b: *What are your current database capabilities on the total collateral amounts in the form of securities that are available and utilized? Focus on Tier 2 institutions*



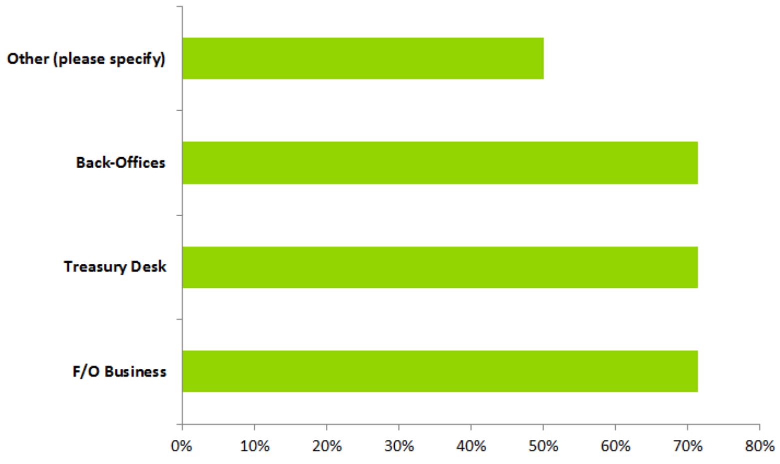
3.2. End-users

With reference to the end-users of the above mentioned databases, the survey confirms that treasury, front and back office are currently the main function involved in the collateral management process: 71% of respondents indicate treasury and back office as part of the end-users, and 64% indicate front office.

However, the landscape of market practices is wide. Besides treasury, front and back office, information is destined to the CVA desk, often risk management, middle office, legal department and even sometimes to clients.

Considering Tier 1 and Tier 2 institutions separately, in Tier 2 firms the treasury desk is the main function involved in collateral management. For Tier 1, more complex organizational models are observed that include back office coordination with other functions (i.e. treasury, front office desk, risk management).

Figure 15: *Who are the end-users of these databases? (Results of multiple choice)*



3.3. Available information

In order to adequately support collateral management, the databases must collect a variety of information including counterparty data, collateral types, agreements, thresholds and minimum transfer amounts. They should also include every available security position, evaluating the possibility of using them as collateral.

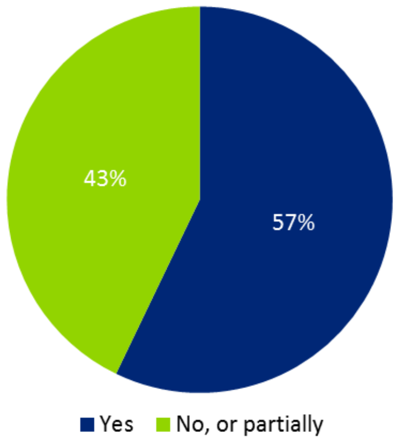
The survey indicates that each respondent is able to:

- extract the nature and name of the counterparties who have either posted or received the collateral, including CCPs;
- identify the divide between variation margins and initial margins;
- manage ''intrinsic'' features on collateral securities in their database, including eligibility (bonds, shares, convertibles), maturity, nominal, ISIN (all respondents except one).

The presence of the re-use information is a key feature of a collateral database. Collateral management must deal with the collateral given and received in order to balance the collateral position. In this activity the re-use of collateral permits the optimisation of collateral management leveraging profitable deals.

Our survey reveals that 43% of participant firms do not have re-use information readily available for optimisation purposes. Among the respondents who declare the presence of re-use information, the majority are Tier 1 banks (71% Tier 1 versus 41% Tier 2).

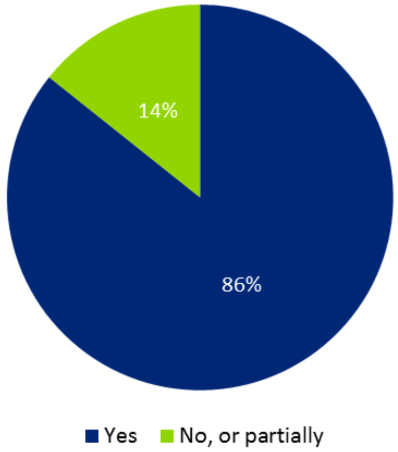
Figure 16: *Are re-use features available in the database?*



3.4. User satisfaction

Although the survey underlines that improvements can be made on re-use and optimisation features, participants (approximately 80%) declare to be satisfied with the nature of information currently available in their databases. This suggests that the majority of respondents have reached a tactical solution that permits them to manage collateral.

Figure 17: *Do you deem the current nature of available information on collateral as being sufficient?*



Conclusion

Due to regulatory changes, such as Basel III Liquidity Coverage Ratio and the EMIR Regulation, all financial institutions must address the collateral management issue and interest on this topic is rapidly increasing.

The vast majority of the respondents have already set up a dedicated team, usually located in the front office or in the treasury department as these functions usually have a comprehensive view on margin calls, stemming from the various counterparties, and are able to perform optimisation if needed. However, the overwhelming majority of these teams are deemed a cost center as they offer a “service” to their firms rather than generating their own business.

In spite of the above remarks, only a few institutions are currently prepared to comply with the upcoming EMIR clearing obligation which should enter into force by late 2014. The analysed institutions are aware that they need to be able to clear bilateral OTC and that they have to strengthen their ability of computing collateral costs and allocating them with deeper granularity. One of the main challenges is the extensive use of securities in place of cash, which is still predominant, in order to perform collateral optimization. The use of securities also triggers other issues such as the ability of evaluating eligible collateral, the compliance with internal risk policies and finally constraints imposed by Regulations.

In addition the IT capabilities such as information lying in collateral database, will be a key factor to success in this area and institutions that already display a good degree of maturity would be able to leverage rapidly.

Considering all the above challenges, financial institutions need to focus on the following improvement areas:

- moving from bilateral OTC to cleared OTC,
- evaluating and allocating the collateral costs,
- optimising the collateral considering regulatory constraints,
- strengthening the governance surrounding collateral management,
- evolving from tactical to strategic solutions (in terms of IT systems, data availability, data quality).

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