Financial Stability Board
Regional Consultative Group for the Americas

Report on the Effect on Host Countries of Balance Sheet Consolidation and Risk Management Practices by Global Banks

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The RCG for the Americas comprises FSB-Member authorities as well as non-FSB member authorities.[1] The RCGs have been established as a mechanism for the FSB to consult with non-member jurisdictions and for the RCG members to share amongst themselves and the FSB views on vulnerabilities affecting the financial system, FSB policy initiatives and on other measures to promote financial stability.

[1] ***A list of members of the RCG for the Americas can be found at http://www.financialstabilityboard.org/about/rcgamericas.pdf***

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Foreword

In November 2010, the Financial Stability Board (FSB) announced arrangements to expand outreach beyond its current membership. To this end, regional consultative groups were established to bring together financial authorities from FSB member and nonmember countries to exchange views on developments in financial systems and on initiatives to promote financial stability. Membership in such groups includes representatives of ministries of finance, central banks, and supervisory authorities.

As part of that initiative, in 2011 the FSB created the FSB Regional Consultative Group for the Americas (RCGA), with the participation of representatives from Argentina, the Bahamas, Barbados, Bermuda, Bolivia, Brazil, the British Virgin Islands, Canada, the Cayman Islands, Chile, Colombia, Costa Rica, Guatemala, Jamaica, Mexico, Panama, Paraguay, Peru, Uruguay, and the United States. At the Los Cabos G20 Summit, the FSB presented a report drawn up in coordination with staff from the International Monetary Fund and the World Bank on the Effects of Regulatory Reforms on Emerging Market and Developing Economies: A Review of the Potential Unintended Consequences. The report focused on the potential impacts of the Basel III capital and liquidity frameworks, policy measures for global systemically important financial institutions, and over-the-counter derivatives market reforms.

Among the concerns covered in the report were those related to the impacts on host countries of the methodologies used by global banks to measure risks at the consolidated level and assign capital to their foreign operations. This report presents the findings of a working group studying the balance-sheet-consolidation and risk-management practices of global banks operating in the Americas.

Glossary

BCBS Basel Committee on Banking Supervision

CRA Credit Rating Agencies

EMDE Emerging and Developing Market Economies

FSB Financial Stability Board

IRC Incremental Risk Charge

IMA Internal Model Approach

IFRS International Financial Reporting Standards

IRB Internal-Ratings-Based approach

OECD Organization for Economic Cooperation and Development

RCGA Regional Consultative Group for the Americas

RWA Risk Weighted Assets

SVaR Stressed VaR

VaR Value- at Risk

Executive summary

The FSB Regional Consultative Group for the Americas established a Working Group (WG) to study the effects on host countries of balance-sheet-consolidation and risk-management practices by global banks. This report presents the findings of the group, which are mainly based on a questionnaire prepared to gather information from nine international banks with an important presence in the region.

The development of consolidated supervision, particularly in the way it is applied to internationally active banks, owes much to the work of the Basel Committee on Banking Supervision (BCBS). A few years after the publication of the original Basel Concordat, in 1983, the BCBS recommended that supervisory authorities of international banks should monitor risk exposures on the basis of consolidated reports. Such reports should reflect a bank´s total business, irrespective of legal entities or the countries in which business was conducted. In 1992, the BCBS also recommended that supervisory authorities should only allow banks from other countries within their jurisdiction if they could be satisfied that the home-country supervisor of an applicant bank had the capacity and information to supervise both the new institution and the parent bank on a consolidated basis. Moreover, according to the BCBS Core Principles for Effective Banking Supervision, the consolidated supervision of banking groups is an essential element of banking supervision which should be pursued on an on-going basis.

Consolidated supervision and risk-management practices entail many benefits, such as an additional layer of supervision and a general view of risk undertaken by the group as a whole. However, these practices may also generate some challenges. After the consolidation process takes place, the particular characteristics of the entities within the group (such as funding sources and currencies) may only be partially taken into account in the bank's risk management practices , and home-country regulation usually prevails for the consolidated institution. In other words, host-authority regulatory practices to which subsidiaries are subject are typically not taken into account when their balance sheets are consolidated with that of the group. However, international banks are not incorporated as single legal entities, but as conglomerates of separate legal entities operating in various jurisdictions. International banks may hedge their risks on a global basis, and they may book risk exposures in different entities within the group that will offset each other in aggregate, but these exposures may leave specific entities carrying inappropriate amounts of risk.

The majority of banks answering the survey indicated that they are increasingly seeking to take a consolidated, enterprise-wide view of risk management. The motivation derives from competitive forces to increase risk-adjusted returns on equity, in part by making more efficient use of capital allocation, as well as from other trends, such as globalization,

expansion across business lines, and the provision of products and services which entail multiple types of risk.

Even though the Basel capital framework is internationally agreed, implementation of the framework differs among jurisdictions. According to survey responses, differences in the application of capital standards may come not only from global bank business and risk-management practices, but from waivers (e.g., in the calculation of trading book capital charges) applied by financial authorities. Such differences may significantly affect host countries in which foreign banks have a large presence as the funding costs of their sovereign debt may increase.

Banks operating in the region use the two approaches recognized by the BCBS to calculate credit risk capital requirements for their operations: the standardized and the advanced internal ratings based (IRB) approach. Credit rating agencies (CRA) ratings are still used as part of the regulatory capital requirements for many banks. For most countries, CRA ratings are used under the standardized approach. Moreover, even though some banks use the IRB or an internal model approach and would not need to use CRA ratings, some of them reported using them.

Subsidiaries of global and regional banks are strongly influenced by the capital-allocation and credit-steering mechanisms of the parent bank. In many cases, subsidiaries´ lending activities reflect the head office view of host-country credit risk. The survey showed that organizational relationships between parent banks and their local subsidiaries differ substantially. Intra-bank governance mechanisms therefore influence the credit process of local subsidiaries to different degrees. All banks that participated in the survey reported that their risk policies and general exposure limits are defined and approved by head offices.

Global banks use different criteria to determine the risk weights of their sovereign exposures in the banking book. Four banks use the standardized approach, four banks use the advanced IRB approach, and one bank uses an internal model approved by its supervisor.

The Basel Committee provides for the possibility that, at national discretion, a lower risk weight may be applied to exposures to the banks' sovereign of incorporation when the sovereign debt is denominated in domestic currency and funded in that currency.[1] Home and host financial regulators often assign the highest credit rating to sovereign exposures

[1] Under the Basel Committee standardized approach, banks may apply a zero capital charge for sovereign exposures with a CRA rating of AAA to AA-. Under the IRB approach, probability of default (PD) for sovereign exposures is the one-year PD associated with the internal borrower grade to which the exposure is assigned and with no floor. As a result, if the PD for a sovereign exposure is zero, no capital charge would apply.

denominated and funded in their local currency. Most banks reported that their regulators allow them to apply a lower risk weight to sovereign exposures denominated and funded in the local currency of the jurisdiction in which the subsidiary operates. International banks vary in whether they choose or are permitted to apply such weights, and some of the banks applying the standardized approach use global ratings to calculate risk-weighted assets. In banks using IRB models, their head offices are responsible for estimating the credit-risk parameters (e.g., probability of default, loss given default, etc.) for sovereign exposures, and they do not necessarily take into account whether the sovereign exposure is denominated and funded in local currency.[2]

As a consequence, subsidiaries' sovereign exposures denominated in domestic currency and funded in that currency often lose their lower risk weights when being consolidated by the home-country regulator or head office, since they may use global credit ratings or treat these exposures as foreign-currency exposures from the perspective of the consolidated global bank.[3]

Hence, a bank may consider that its own local sovereign debt represents a lower risk, and therefore will provide it a more favorable treatment than to a host sovereign exposure registered in its foreign subsidiary. This fact could create a home-country bias in favor of the parent banks' local sovereigns in those cases where these sovereign risks are in fact analogous. Risk management systems should be capable of assessing the relative risks of sovereign exposures, their currency of denomination and funding.

With respect to their trading book exposures, most banks use an internal model approach (only two of them use the standardized approach) to calculate their capital requirements. After the introduction of Basel 2.5, seven of the nine banks surveyed reported an increase in their economic and regulatory capital at the consolidated level, which was driven by exposures in their subsidiaries. The seven banks that observed increases in their capital requirements reported that their subsidiaries' RWAs grew between 120% and 300% after applying Basel 2.5. This effect would have been even larger were it not for the fact that some banks were allowed by their regulators to exclude certain elements from risk-weighted asset calculations.

[2] Some members of the working group considered that while a sovereign exposure of the subsidiary denominated and funded in local currency might not represent a foreign currency risk for the parent bank, the latter may face other types of risk from the sovereign exposure of its subsidiary, including interest rate risk, credit risk of the sovereign, and country risk of the host (e.g., transfer risk from potential restrictions on dividend remittances or capital controls). Other members of the group are of the opinion that requiring subsidiaries to hold more capital for their local risk exposures did not serve to address transfer risks.

[3] This treatment may also apply to sovereign exposures in the trading book (see Annex II for a quantitative example).

Several banks answered that their subsidiaries' performance was negatively impacted by this increase in capital requirements and four of them mentioned that the introduction of Basel 2.5 led to a change in their business strategies. Thus, application of Basel 2.5[4] and consolidation practices of global banks may increase the cost of holding sovereign debt in emerging market economies in which these banks have a material presence.

Recommendations

- Good communication and cooperation channels between authorities from home and host countries are essential. Financial authorities must ensure that global risk policies and exposure limits adequately reflect the local conditions of the host-country economies in which international banks operate.
- The BCBS could be asked to ensure that existing reviews assess the degree to which there is consistent implementation of capital standards, and that opportunities for arbitrage are closed off.
- Banks' risk management systems should be able to assess the degree to which during consolidation it is appropriate to grant sovereign exposures denominated and funded in local currency at overseas subsidiaries the same treatment as that which the host country regulator permits its domestic banks.
- The scope of consolidation practices and the distribution of capital within global banks should be carefully analyzed as part of the work to strengthen international standards. Capital may not always be available for each of the consolidated entities belonging to the global bank.

[4] The BCBS has released two consultative documents suggesting a "fundamental review of the trading book." However, the source of potential unintended consequences for host countries identified in this report has not been addressed in the framework proposed for consultation.

1. Introduction

The Financial Stability Board Regional Consultative Group for the Americas (RCGA), agreed to establish a working group on balance-sheet-consolidation and risk-management practices by global banks with the objective of enhancing our understanding of how international banks assess their risks and estimate their capital requirements at the consolidated level.

A questionnaire to gather information from global banks with a significant presence in the Americas was prepared and sent to nine institutions. It included questions to elicit current risk-management and capital-allocation practices. Questions were grouped under the following topics: banking book, trading book, and global allocation of capital.

Most of the banks responding to the questionnaire stated that they increasingly seek to take a consolidated, enterprise-wide view of risk management. Foreign bank subsidiaries are strongly influenced by the capital-allocation and credit-steering mechanisms of the parent bank. All banks reported that their risk policies and exposure limits are defined and approved by head offices. In some cases subsidiaries also provide input to the head office to set such policies and limits.

Current consolidation and risk-management practices applied by global banks have many advantages. In addition to providing shareholders and home supervisors with a comprehensive view of international operations and risks incurred by the institutions, they also bring benefits for the host economies in which they operate as state-of-the-art technology and know-how is down-streamed to overseas subsidiaries. However, these practices also bring some challenges for the head offices and for home and host authorities alike (e.g., coordination, legal and operational risks).

The application of capital regulations, even when based on internationally agreed standards, differs among jurisdictions. The survey responses showed that variation in the application of capital standards may come not only from global-bank business and risk-management practices, but also from waivers granted by regulators.

The rest of this document is structured as follows. Section Two describes what is meant by consolidated supervision of banks and financial conglomerates. Section Three provides a conceptual overview of risk-management practices in global banks. Section Four contains a summary of banks' responses to the questionnaire. The last section provides conclusions and recommendations to meet some of the challenges identified in this document.

2. Consolidated supervision of banks and financial conglomerates

Consolidated supervision is considered to be a key component of banking supervision. It aims to evaluate the strength of an entire group, taking into account all the risks which may affect a bank (or individually regulated firms within the group), regardless of whether these risks are carried on the books of the bank or a related entity.[5]

According to the Basel Committee on Banking Supervision (BCBS), authorities must supervise the banking group on a consolidated basis. Authorities must adequately monitor and apply prudential standards to all aspects of the business conducted by the banking group worldwide. A banking group is defined as the holding company, the bank and its offices, subsidiaries, affiliates and joint ventures, both domestic and foreign, including other entities (non-bank) within the wider group.

This group-wide approach to supervision goes beyond accounting consolidation. Authorities must analyze the overall structure of the banking group (within its jurisdiction and abroad) and its material activities (including non-banking activities). The supervisor should understand and assess how group-wide risks are managed and take action when risks arising from the banking group and other entities in the wider group,[6] in particular, contagion and reputation risks, may jeopardize the safety and soundness of the bank and the banking system.[7]

Consolidated reports enable supervisors to assess financial conditions at the group level. Consolidated reporting includes consolidated financial statements as well as consolidated prudential reporting. The aim of consolidated financial statements is to combine the financial position (assets, liabilities, off-balance-sheet positions, income statements, etc.) of all the companies within the group (banks included), in order to gain a comprehensive understanding of the financial position of the group. Consolidated financial statements measure the available capital to support a group of related companies by eliminating

[5] Section 1.1. of Association of Supervisors of Banks of the Americas (2008) "Consolidated Supervision" Work Group No. 3.

[6] As part of the efforts to improve the monitoring of, and reduce the exposure to, shadow banking, the FSB has coordinated the development of policies in five areas where oversight and regulation need to be strengthened to reduce systemic risks. One of these areas covers mitigating risks in banks' interactions with shadow-banking entities. To this end, policy recommendations are being developed by the BCBS. In particular, the BCBS is reviewing the scope of consolidation for prudential regulatory purposes. The goal is to ensure that the interaction of banks with the shadow banking system is properly captured within the prudential regime.
While the BCBS is not specifically reviewing consolidation practices from the cross-border point of view, this may be an opportunity to review the treatment of certain legal entities –namely standalone subsidiaries– taking into account both their operational standing (degree of independence, interconnections, etc.) and the recent discussions on the resolution of cross-border entities.

[7] Principle 12 of the BCBS Core Principles for Effective Banking Supervision.

double gearing.[8] Consolidated prudential reports allow supervisors to evaluate, monitor and assess specific factors that are crucial to determine the financial condition of a group, such as its capital adequacy, large exposures, market risks, liquidity, and connected lending exposures.

International regulation also recognizes the need to supervise and impose capital requirements to all internationally active banks within the wider group. While home authorities should supervise a bank on a consolidated basis, the responsible host supervisor should supervise individual banks in the group on a stand-alone basis.[9] However, application of the Basel framework on a solo (i.e., unconsolidated) basis is left to the discretion of national supervisors.

The scope of consolidation for capital adequacy purposes usually includes only the related entities (subsidiaries, participations of a bank, parallel or sister banks and financial institutions controlled by the same shareholders as the bank) which perform financial or banking activities. It is usually recommended that insurance companies are excluded from bank capital adequacy measures, given that the risks they face are different from the risks that banks are exposed to.[10] Holding companies can be excluded from the consolidation as an exception, but not as a rule. Even when the holding company does not perform financial activities, it has control over the activities of the group and it remains crucial in raising capital to support those activities, so it is reasonable to include non-trading holding companies in consolidated reports.

There are several methods of consolidation and, depending on the type of entities owned and the ownership interest, one may be more suitable than another. Majority-owned or --controlled banking entities, securities entities (subject to broadly similar regulation or where securities activities are deemed banking activities) and other financial entities should generally be fully consolidated.[11] When consolidating under the subsidiaries model, the full balance sheets of parent companies and subsidiaries are combined on a line-by-line basis, while intragroup assets and liabilities are eliminated. The share of capital of the consolidated subsidiaries must be excluded to avoid double-counting of

[8] This is the scope of application described in the International Convergence of Capital Measurement and Capital Standards (Basel 2) framework. The first document by the BCBS to give a definition of consolidated supervision is "Consolidated Supervision of Banks' International Activities," published in March 1979.

[9] Principle 12 of the BCBS Core Principles for Effective Banking Supervision.

[10] According to Basel III, insurance subsidiaries may be consolidated as long as this approach is at least as conservative as the deduction approach (i.e., the capital ratio of the consolidated group is no larger than the capital ratio of the unconsolidated group).

[11] In the case of a capital shortfall at the subsidiary, supervisors will monitor any action to correct the shortfall, and it may be deducted from the parent bank's capital if not corrected in a timely manner. See BCBS (2006), "Basel II: International Convergence of Capital Measurement and Capital Standard."

capital.[12] If any majority-owned securities and other financial subsidiaries are not consolidated for capital purposes, supervisors must ensure that the entity that is not consolidated meets regulatory capital requirements.[13]

Investments in banking, financial and insurance entities where the investor has significant influence over the operations but not control are usually deducted from capital subject to thresholds. However, such investments might also be consolidated on a pro-rata basis as determined by national supervisory authorities.[14]

Table 1

Milestones for the development of consolidation practices for internationally active banks made by the Basel Committee on Banking Supervision and the Joint Forum on Financial Conglomerates

Date	Document
1975	**Report to the Governors on the supervision of bank's foreign establishments ("the Concordat")** *The Concordat sets guidelines for division of responsibilities and cooperation between national authorities with regard to the supervision of foreign establishments (branches, subsidiaries and joint ventures). The document considers three aspects of supervision: liquidity, solvency and foreign exchange operations and positions.*

[12] McDonald, R. (1998).

[13] The International Financial Reporting Standards (IFRS) use the principle of control as the guideline to establish which entities are consolidated in the consolidated financial statements. When the parent solely controls its subsidiaries, the consolidated financial statements should combine like items of assets, liabilities, equity, income, expenses and cash flows; eliminate the carrying amount of the parent's investment in each subsidiary and the parent's portion of equity of each subsidiary; and eliminate intragroup transactions. Any non-controlling interest shall be presented within equity, separately from the equity of the owners of the parent.

[14] Following IFRS, when the parent has joint control, the investment may be classified as either a joint operation or joint venture depending on the parent's rights to assets and obligations for liabilities. For a joint operation, the parent is required to recognize and measure the assets and liabilities (and recognize the related revenues and expenses) in relation to its interest in the arrangement in accordance with relevant IFRS applicable to the particular assets, liabilities, revenues and expenses. For a joint venture, the parent is required to recognize an investment and to account for that investment using the equity method.
The equity method (as defined under international accounting standards -IAS28) is a method of accounting whereby the investment is initially recognized at cost and adjusted thereafter for the post-acquisition change in the investor's share of the investee's net assets. The investor's profit or loss includes its share of the investee's profit or loss and the investor's other comprehensive income.

Table 1

Milestones for the development of consolidation practices for internationally active banks made by the Basel Committee on Banking Supervision and the Joint Forum on Financial Conglomerates

Date	Document
1979	**Consolidated Supervision of Bank's International Activities** *In this document, the BCBS agreed that it was essential for supervisors of foreign subsidiaries, joint ventures and branches, to monitor the capital adequacy and the risk exposure of all their banks on the basis of* ***consolidated reports****, which should reflect the totality of their international activities. The BCBS believed that in order to assess the soundness of individual banks, supervisors would also need to continue to look at banks' accounts on a non-consolidated basis.*
1983	**Principles for the Supervision of Banks' Foreign Establishments** *In this document, the BCBS stated that all foreign banking establishments should be supervised and that such supervision should be adequate according to the standards of both host and parent authorities. The BCBS also concluded that in order to have adequate supervision, there should be cooperation between host and parent authorities.*
1992	**Minimum Standards for the Supervision of International Banking Groups and their Cross-Border Establishments** *The BCBS established four minimum standards in this document that supervisory authorities should implement:* *i. all international banking groups and international banks should be supervised by a home-country authority capable of performing consolidated supervision, with the assistance of information provided by host countries;* *ii. the creation of a cross-border banking establishment should receive the prior consent of both the host-country supervisory authority and the supervisory authority of the home country of the bank and, if different, the banking group;* *iii. Supervisory authorities should possess the right to gather information from the cross-border banking establishments of the banks or banking groups for which they are the home-country supervisor; and* *iv. If the host country determines that any of the minimum standards is not being met to its satisfaction, that authority can impose the restrictive measures necessary to satisfy its prudential concerns consistent with these minimum standards, including the prohibition of the creation of banking establishments.*

Table 1

Milestones for the development of consolidation practices for internationally active banks made by the Basel Committee on Banking Supervision and the Joint Forum on Financial Conglomerates

Date	Document
1996	**The Supervision of Cross-Border Banking** *In this document, the BCBS makes a number of recommendations to improve the implementation of the Minimum Standards* ***for the Supervision of International Banking Groups and their Cross-Border Establishments****. The recommendations included improving the access of home supervisors to the information necessary for effective consolidated supervision, and ensuring that all cross-border banking operations were subject to effective home and host supervision.*
1997	**Core Principles for Effective Bank Supervision** *In this document, the BCBS published the Core Principles regarding banking supervision. Among the principles, the BCBS stated that consolidated supervision of banking groups was an essential element of banking supervision which should be practiced on an on-going basis.*
1999	**Supervision of Financial Conglomerates** *The Joint Forum identified capital adequacy principles and measurement techniques to assess the capital adequacy of a financial conglomerate. It also focused on the supervisory information-sharing and coordination framework.*
2006	**Home-Host Information Sharing for Effective Basel II Implementation** *The main principles in this document state that the home-country supervisor will be responsible for the oversight of the implementation of the Basel II new accord for a banking group on a consolidated basis; and that the host-country supervisors, particularly where foreign banks operate in subsidiary form, have requirements that need to be understood and recognized (banks operating in subsidiary form must satisfy the supervisory and legal requirements of the host jurisdiction). Cooperation and information sharing between home and host supervisory authorities are important for effective implementation of Basel II.* **Revised version of Core Principles for Effective Bank Supervision** *In 2006, the BCBS issued a revised version of the Core Principles published in 1997. The main provisions on consolidated supervision and the home-host relationship were rearranged and brought together on principles 24 and 25.*

Table 1

Milestones for the development of consolidation practices for internationally active banks made by the Basel Committee on Banking Supervision and the Joint Forum on Financial Conglomerates

Date	Document
2012	**Revised version of Core Principles for Effective Bank Supervision** *In 2010, the BCBS started a review to enhance the Core Principles, in order to incorporate the lessons from the crisis. The BCBS published the final version in September 2012. The principles were expanded from 25 to 29 and include essential and additional criteria to assess compliance with the principles.* *Regarding consolidated supervision, the principles establish that the supervisor should understand the overall structure of the banking group; should be able to review the activities of the group, both domestic and cross-border; should review whether the oversight of a bank's foreign operations by management is adequate with a regard to its risk profile and systemic importance and there is no hindrance in host countries for the parent bank to have access to all the material information from their foreign branches and subsidiaries*; *and the supervisor has the faculty to limit the range of activities of the consolidated group, especially when the safety and soundness of the bank and banking group are being compromised.*
2012	**Principles for the supervision of financial conglomerates** *The Joint Forum incorporated liquidity considerations to the analysis of the capital framework for financial conglomerates. It also considered risk-management and corporate governance issues.*

3. Risk-management practices

In recent decades, increasing attention has been given to the importance of effective risk management within the banking industry. The global financial crisis has demonstrated that effective risk management is a key tool to promote the financial soundness of financial institutions. Consequently, regulators and bank managers alike continue to enhance risk-management practices by developing new risk measures and new risk-management tools. In this section, a general discussion of risk-management practices is presented.

Banks use several risk-management tools to control and monitor their exposures to different types of risks. These include the development of appropriate corporate policies and procedures, the use of quantitative methods to measure risk, and price products and services according to their risks, the establishment of risk limits, the employment of active risk-management techniques through diversification and hedging practices, and the building of reserves, provisions and capital cushions to absorb potential losses. The application of and reliance on these tools differs among multinational financial institutions depending on the nature of their core business activities, risk aversion and the applicable supervisory regime.

Developing appropriate corporate policies and procedures is of utmost importance for successful risk management. The risk-management framework within institutions must balance an adequate level of compliance with approved risk policies and safeguards with shareholder value creation. There must be thorough and timely communication channels between risk officers and senior management. Risk assessments and reporting conducted by risk managers must be independent from business managers. Internal control measures such as segregation of duties and limits on access to information systems are part of this process.

The primary risks faced by most banks are credit risks from their lending activities and liquidity risks related to the maturity gap between assets and liabilities. In most cases, banks' assets largely consist of loans and other credit exposures, while liabilities include deposits and other short-term liabilities. Other bank assets generally include interbank trading positions, securities holdings, derivative instruments and other traded assets. In addition to credit risk, these activities expose banks to counterparty, operational and market risks, including foreign exchange, interest rate and other risks associated with holding and trading securities. For a long time, credit and market risks were managed separately. However, one of the lessons learned from the 2008 financial crisis is that credit and market risks are closely related and should be managed jointly.

3.1 Credit risk

Credit risk has long been identified as the dominant risk in the banking industry as it is directly related to the core lending business and to derivative portfolios. Credit risk basically refers to the probability of a borrower not being able to fulfill its obligations as they become due. Banks commonly have a robust credit approval process for both new credits and for the roll-over of existing ones. Depending on the size and quality of the exposure, the credit approval process generally involves multiple approvals from senior credit managers and credit committees.

Financial institutions have expanded the view of credit risk management from individual customer loans into a portfolio approach including counterparty risk. Banks have developed internal models to estimate the amount of economic capital needed to support banks' activities that involve credit risk, not only in the loan portfolio, but also in the derivatives portfolio (counterparty risk). Some banks have also introduced new metrics to measure counterparty risk, such as wrong-way risk, jump-to default loss estimations and credit valuation adjustments when pricing derivative transactions.

Banks use a wide range of products and facilities including collateral, guarantees and credit derivatives to mitigate credit risk. The use of internal models has been a key element to encourage banks to use credit derivatives to actively manage and or transfer credit risk. By using these products, banks can manage exposures per counterparty, sector and geographic area on a worldwide basis, regardless of the type of instruments being used (on- and off-balance sheet items). Credit derivatives can also be used to sell off unwanted risks, freeing up capital for other uses according to business objectives.

3.2 Market risk

Interbank activities, bond trading, derivative transactions and trading of other assets make up a large portion of a bank's activities subject to market risk. Market risk is simply defined by the potential loss generated by fluctuations in the market value of a financial instrument, mainly driven by variations in market prices such as interest rates, FX rates, equity, and commodity prices.

Market-risk-related losses are the most significant risk in the trading book where large proprietary positions are held. Frequently, the purpose of such trading books is not to eliminate all market risk, but rather to manage it at a level in line with the bank's risk appetite and expected return.

In general, banks combine different tools such as sensitivity analysis and statistical models to manage risk on the trading book and to assess potential losses. Statistical models to assess potential losses of the trading portfolio driven by fluctuations in identified market

risk factors generate a "Value-at Risk" (VaR) estimate of the maximum expected loss over a given period of time at a certain confidence level. Most VaR models depend on statistical analyses of historic rates and prices and assume that historic returns and volatility are good predictors of future movements. There are several approaches to estimate VaR. When VaR was first used, the most common methodology was based on the assumption of a normal distribution of returns (the parametric approach). However, in response to different financial crises, many banks have changed their methodology to Historic VaR (the non-parametric approach), which uses the real distribution of market data movements for a given historic period of time as a predictor for future market behavior.[15]

The liquidity of financial products is increasingly being taken into account in VaR estimations by applying discount factors to market values reflecting the trading depth or liquidity of the instrument. Also, it is common for banks to establish holding periods in their bond trading books to ensure turnover and identify on a timely basis when a security becomes illiquid.

New risk metrics have emerged from recent standards for prudential regulation. Specifically, Basel 2.5 requires banks to estimate a specific risk or Incremental Risk Charge (IRC) stemming from debt instruments. Banks have developed IRC models to capture market and credit risks (default, migration and concentration risks) embedded in debt instruments, such as sovereign and corporate bonds in one single metric.

3.3 Consolidated risk management in global banks

In recent years, banking institutions have expanded their business lines and activities globally. One of the major challenges of global institutions has been the implementation of consolidated risk management across multiple risk categories and business lines. In fact, some banks are already working on developing quantitative approaches to estimate both market risk and credit risk in a combined metric that considers the degree of diversification between them.

During the last decade, financial instruments have become more complex and market transaction volumes have increased, requiring lager investments in information technology systems not only to measure risks but also to manage a large amount of data

[15] To assess the accuracy of VaR assumptions, models are commonly back-tested by comparing VaR estimations with actual trading results. In practice, while VaR models provide a convenient methodology for quantifying, monitoring and controlling market risk, they have limitations in predicting the size of potential losses under a stressed event. In particular these limitations relate to the possibility for losses in the event of unique market disturbances and the possibility of an overall reduction in liquidity. To help overcome this VaR shortfall, banks use stress-test scenario analyses.

coming from multiple external interfaces. Often, overseas subsidiaries have several local systems with different book structures feeding one or more head office systems, at different cut-off times, complicating exposure consolidation and thus hindering effective risk management. Multinational banks with operations in different time zones require complex systems to capture data according to several market opening and closing times in order to price products accurately, at their corresponding close-of-business timeframes. Furthermore, systems should also be able to clearly demarcate the banking and the trading books to efficiently allocate economic capital and measure profitability between different business lines. Given these needs, investments in information technology systems have become a key element in forecasting yearly budgets for senior management and the board of directors.

3.4 Rating agencies

External credit ratings play an important role in calculating capital requirements for credit risk. Under the Basel accord, banks may choose to measure credit risk in a standardized manner, supported by external credit assessments. The alternative methodology, which is subject to the explicit approval of the bank's supervisor, would allow banks to use their internal rating systems for credit risk.

The 2008 financial crisis called into question CRA ability to provide a reliable independent assessment of a firm's financial position. CRA methodologies have been largely doubted, as they were unable to anticipate the credit defaults observed during 2008. When real market conditions deteriorated, CRAs were forced to reevaluate their opinions. The resulting downgrades reduced portfolio values and forced asset sales, creating a downward spiral contributing significantly to the severe depth of the financial crisis.

Despite these drawbacks, CRA ratings are still widely used by finance industry participants and in international standards, laws and regulations. The FSB has published principles for reducing reliance on CRA ratings[16] designed to reduce the financial herding and cliff effects that may threaten financial stability currently arising from CRA rating thresholds being hard-wired into laws, regulations and market practices.[17]

CRAs believe that among the debtors in a given country, the highest credit rating should be attributed to the sovereign. Hence, global banks often use the sovereign credit rating as a credit rating ceiling or a risk floor for the rest of the exposures incurred by a global bank in each foreign country. The rationale of the sovereign ceiling concept is that a

[16] See FSB (2010).

[17] Some countries have explicitly established that banks must rely on internal rating systems.

financially distressed sovereign is likely to exert a negative influence over the ability of domestic firms to service their debts.

Many international financial institutions evaluate their business decisions using both local and global scale ratings. It is common for subsidiaries to use local-scale ratings while head offices may use global-scale ratings when consolidating their operations. This creates inconsistencies when the credit quality of a given counterparty is evaluated both by the subsidiary and by the head-office.

4. Summary of responses from the survey

A questionnaire was prepared to gather information from global banks with a significant presence in the Americas region. Nine institutions answered the questionnaire: BAC International Bank, Banco Itaú Unibanco, Banco Santander, BBVA, Citigroup, Credit Suisse, Deutsche Bank, HSBC and Scotiabank.[18] The survey included questions to elucidate current risk-management and capital-allocation practices. Questions were grouped under the following topics: banking book, trading book and global allocation of capital.

Most of the banks responding to the survey stated that they increasingly seek to take a consolidated, enterprise-wide view of risk management. The motivation derives from competitive forces to increase risk-adjusted returns on equity, in part by making more efficient use of capital allocation, as well as from other trends, such as globalization, expansion across business lines, and increasing involvement with products that entail multiple types of risk. However, due to different limitations, not all banks are able to consolidate their risk exposures with diversification benefits. Some of these limitations are regulatory constraints, a conservative risk-management approach, and inadequate information technology systems, to mention some of the most important.

4.1 Banking book

Foreign bank subsidiaries are strongly influenced by the capital-allocation and credit-steering mechanisms of the parent bank. In many cases, subsidiaries´ lending activities reflect the head-office view of the host-country credit risk. The survey showed that organizational relationships between parent banks and their local subsidiaries differ substantially. Intra-bank governance mechanisms therefore influence the credit process of local subsidiaries to different degrees.

All banks that participated in the survey reported that their risk policies and general exposure limits are defined and approved by head offices. All the participant banks in the

[18] The questionnaire appears in Annex I. Bank participation in Latin American markets is shown in Annex II.

survey have strong mechanisms to define, approve and implement credit risk policies, limits and pricing models. In addition, two banks reported that their subsidiaries provide input in setting these credit-risk policies, and three banks reported that their subsidiaries also provide inputs in setting limits.[19]

CRA ratings are still used as part of the regulatory capital requirements for many banks, and some banks use CRA ratings in their internal credit-risk models. For most countries[20] CRA ratings are used under the standardized approach. Moreover, even though five banks use the IRB or an internal model approach and would not need to use CRA ratings, four of them reported using them.

4.1.1 Sovereign exposures

To estimate their sovereign exposures' risk weights, banks use both approaches: the standardized and the advanced internal ratings based (IRB) approach. The Basel Committee provides for the possibility that, at national discretion, a lower risk weight may be applied to banks' exposures to their sovereign of incorporation when the sovereign exposure is denominated in domestic currency and funded in that currency.[21]

Global banks depend on different criteria to determine the risk weights of their sovereign exposures. Of the nine banks responding to the survey, four banks use the standardized approach, four banks use the advanced IRB approach and one bank uses an internal model approved by its supervisor, which keeps the risk weight the same for all sovereign exposures denominated and funded in the same currency regardless of their ratings.[22] In banks using IRB models, their head offices are responsible for estimating the credit risk parameters (e.g., probability of default, loss given default, etc.) for sovereign exposures. One bank which uses the IRB approach stated that it may apply the standardized approach for small and recently acquired subsidiaries.

[19] The 2010 European Financial Stability and Integration Report from the European Commission is consistent with the survey responses, as it described that risk monitoring (including limits and calculations) for both credit and market risks in affiliates is mostly driven by their headquarters.

[20] Brazilian authorities do not allow direct use of CRA ratings, ratings must be derived by financial institutions.

[21] Under the Basel Committee standardized approach, banks may apply a zero capital charge for sovereign exposures with a CRA rating of AAA to AA-. Under the internal-ratings-based approach (IRB), the probability of default (PD) for sovereign exposures is the one-year PD associated with the internal borrower grade to which the exposure is assigned and with no floor. As a result, if the PD for a sovereign exposure is zero, no capital charge would apply.

[22] Deloitte's Global Risk Management Survey 2013, which included 86 financial services institutions from around the world (conducted from September to December 2012), reported that 37 percent of respondents used the standardized approach to calculate credit risk, while 36 percent used the advanced IRB approach and the rest (27 percent) were using the Foundation IRB approach.

The majority of banks reported that their regulators allowed them to apply a lower risk weight for their sovereign exposures denominated and funded in local currency. However, two of the four global banks applying the standardized approach prefer to use global credit ratings to determine the risk weights of their subsidiaries' sovereign exposures at the consolidated level, while the other two banks choose to use the risk weights established by the local subsidiaries' regulators.

Three European banks reported using zero risk weights for all European sovereign exposures regardless of the exposures' credit ratings or the approach being used to estimate the risk weights (standardized or IRB). Another bank reported applying the same positive risk weight for all its sovereign exposures denominated and funded in the same currency regardless of respective ratings.

4.1.2 Exposures to other banks and to corporates

Of the nine banks responding to the survey, three banks use the standardized approach, five banks use the advanced IRB approach and one bank uses both, depending on the country where the subsidiary is established.

Banks using the standardized approach use global credit ratings when estimating the risk weights at the consolidated level, while banks using the IRB approach reported using the same loan-pricing models and parameters to determine the risk weights of loans denominated in host-based currencies regardless of the entity in which they are booked. In the IRB approach, loan pricing models and parameters are established by head offices.

4.2 Trading book

The trading book consists of positions in financial instruments and commodities held either with a trading intent or in order to hedge other elements of the trading book. To be eligible for trading book capital treatment, financial instruments must either be free of any restrictive covenants on their tradability or able to be hedged completely.[23]

Of the nine banks responding to the survey, two banks use the standardized approach but one of them is in the process of migrating to the Internal Model Approach (IMA). Four other banks use the IMA and the remaining three use both approaches.[24]

4.2.1 Internal model approach

Six of the seven banks use the IMA estimate historical VaR. The other bank reported using Monte Carlo simulations to compute the VaR. All banks use a 99% confidence level with

[23] See BCBS (2004).

[24] Deloitte's Global Risk Management Survey 2013 reported that 33 percent of the financial institutions surveyed were using the IMA and 63 percent used the standardized approach.

calibration periods from one to two years. One of the banks also reported that it does not use its IMA for its Latin American subsidiaries.

To estimate the capital requirements at the consolidated level, global banks could follow a top-down or bottom-up approach. The top-down approach consists of aggregating all the global bank exposures, regardless of location, into a single global portfolio. The consolidated capital requirement is estimated from the VaR of the single global portfolio. In the bottom-up approach, the global bank capital requirement is calculated as the sum of the VaR of the entities belonging to the group. Only two of the seven banks using IMA apply a top-down approach, which also allows them to take advantage of diversification effects in measuring their capital requirements.[25]

4.2.2 Basel 2.5

Basel 2.5 introduces additional capital charges for risk exposures in the trading book. The additional requirements stem from (i) an incremental risk capital charge (IRC) for credit-sensitive positions in the trading book which captures default, concentration, and migration risks at a longer liquidity horizon than previously calculated, and (ii) a capital charge based on a Stressed VaR (SVaR) that uses historical data from a continuous 12-month period of significant financial stress.

Four of the seven banks applying IMA reported using global credit ratings to estimate the IRC, while three banks use internal ratings. However, some banks which use internal credit ratings also reported applying global ratings in some circumstances. One bank also described applying a zero risk weight to OECD sovereigns with a risk classification of one or zero and to sovereign exposures which are locally funded and for which the local authority assigns a zero risk charge.

Two global banks reported being allowed by their supervisors to exclude default risk from their IRC estimations for sovereign exposures denominated in the local currency of the sovereign.[26] It is important to note that the above facility was granted to banks with respect to exposures taken on by large retail subsidiaries. Finally, another bank stated that its supervisors allowed the application of a lower risk charge for some specific indexed exposures.

[25] Given that only two banks using IMA apply the top-down approach allowing for diversification benefits for the computation of capital requirements, this may also exacerbate the problem of increased capital posed by Basel 2.5 (see next subsection).

[26] Estimates suggest that including default risk in the computation of capital requirements for sovereign bond exposures would increase requirements by 63%.

All banks compute IRC based on mark-to-market exposures and all banks except two consider bond seniorities in their IRC models.[27] To calculate IRC at a consolidated level, the majority of banks aggregate their subsidiaries´ positions. And only two of them take into account the diversification benefits from these exposures.

After the introduction of Basel 2.5, seven of the nine banks reported an increase in their economic and regulatory capital at the consolidated level driven by their subsidiaries' exposures.[28] Four banks reported that securitizations were one of the products most affected by Basel 2.5. One bank stated that its trading fixed-income business was the most affected, while another bank reported that sovereign exposures in foreign currencies were particularly affected.

Five banks answered that their subsidiaries´ performance was negatively impacted by this increase in capital requirements, and four of them mentioned that the introduction of Basel 2.5 led to a change in their business strategies.

The seven banks that observed increases in their capital requirements at the consolidated level reported that their subsidiaries' RWAs grew between 120% and 300%, after applying Basel 2.5. This effect would have been even larger were it not for the fact that some banks were allowed by their regulators to exclude certain elements from risk-weighted asset calculations (specifically, from the IRC).

4.3 Capital allocation and consolidation

Four banks use returns, capital ratios, and RWA as criteria or targets to allocate regulatory capital to their subsidiaries. The remaining five banks allocate capital based only on returns or risk, and one uses six variables[29] to assign capital. When capital allocation is based on returns, these are estimated using the accounting standards of the jurisdiction where the head office is incorporated. Head offices are in charge of computing performance metrics such as return on equity, return on assets, and risk-adjusted return on capital. [30]

[27] The IRC must consider a measure of the loss given default, among other factors. The severity of a loss at default also depends on the seniority of a particular bond.

[28] See Annex III for a quantitative example of the impact of Basel 2.5 on capital requirements for sovereign bonds.

[29] The variables are: connectivity, economic development, profitability, efficiency, liquidity, and adherence to global risk standards.

[30] Banks reported that this practice may make the playing field less level in host countries where their subsidiaries operate. In some cases, the home regulator may require a higher capital charge on exposures booked at subsidiaries than the host country regulator, placing the bank at a competitive disadvantage. However, one of the surveyed banks also reported a case in which the host country applied a higher risk weight for the computation of RWA than the home country for some business lines. Since banking

There is no unified approach on the use of balance-sheet limits on subsidiaries. Four banks do not impose such limits on their subsidiaries, while the other four banks answered that they establish limits mainly based on leverage ratios. One bank sets limits based on the proportion of the group's capital that the subsidiary may consume.

5. Conclusions and recommendations

Consolidated supervision is seen as a key component of banking supervision. It aims to evaluate the strength of an entire group, taking into account all the risks which may affect a bank (or individually regulated firms within the group), regardless of whether these risks are carried on the books of the bank or a related entity.

Current consolidation and risk-management practices applied by global banks have many advantages. In addition to providing shareholders and home supervisors with a comprehensive view of international operations and risks incurred by the institutions, they also bring benefits to the host economies in which they operate as state-of-the-art technology and know-how is down-streamed to their overseas subsidiaries and an additional layer of supervision is gained since they are supervised by home- and host-country authorities.

However, these practices also bring challenges to home and host authorities alike. Host-country regulators may be overwhelmed by the complexities associated with the supervision of large and complex international financial institutions, understanding new products and methodologies, and by difficulties in achieving effective coordination and information sharing with their counterparts in home or other host countries in order to adequately supervise or resolve these institutions. International banks might also engage in regulatory arbitrage, seizing on differences in regulations around the world and affecting the level playing field within the host countries in which they operate.

Fully consolidated risk measurement is the ultimate objective for many risk-management units at banks with activities that span multiple risk categories, business lines and market types. All banks that participated in the survey reported that their risk policies and general exposure limits are defined and approved by head offices; in some cases subsidiaries also provide input to the head office to set these policies and limits.

Banks face the challenge of further developing methodologies to assess and consolidate different types of risk in order to manage capital allocation efficiently. Limitations in information technology systems and data aggregation capabilities, a conservative risk-

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subsidiaries use the rules of the home country when computing returns and estimating benefits, the bank had a competitive advantage *vis-à-vis* the other domestic banks operating in the host country.

management approach, and legal and regulatory constraints to apply new methodologies and to freely allocate and distribute capital within the banking group are other challenges that global banks may also face in achieving this aim.

Even though the Basel capital framework is internationally agreed, application of the framework differs among jurisdictions. In certain areas, the Basel framework provides local authorities with some room to exercise national discretion in order to accommodate country differences that may generate a large burden for banking institutions operating within their jurisdictions. However, this discretion is not always exercised by authorities or by the global bank when consolidating risks.

The survey results showed that variation in the application of capital standards may come not only from global bank business and risk-management practices, but from waivers (e.g., the exclusion of certain risk elements from the IRC calculation or assignment of a preferential risk weight for sovereign exposures denominated in local currency and funded in that currency).

Regulators often assign a more favorable treatment to their own domestic sovereign exposures since they tend to be the safest and most liquid assets available to banks (e.g., European banks reported using zero risk weights for all European sovereign exposures, irrespective of the host country credit risk). Applying different treatment to sovereign exposures booked in overseas subsidiaries may make holding those sovereign exposures more expensive for subsidiaries than for other banks in the host country market.

Application of Basel 2.5 and the consolidation practices of global banks may increase the cost of sovereign debt in emerging-market economies in which global banks have a material presence (see Annex III for a quantitative example).[31]

Certain elements of the Basel capital standards are seen by many financial institutions as requiring more regulatory capital than necessary for the applicable risk. The increased capital requirement in the trading book may prompt banks to register their operations in the banking book[32] or to transfer risks to other market participants or jurisdictions.

[31] The annex shows that operations that may be profitable from the perspective of the subsidiary operating in a host country may no longer be profitable after the consolidated treatment under Basel 2.5. It also shows that Basel 2.5 (in particular the IRC charge) increases capital requirements significantly for countries with lower credit ratings.

[32] See Pepe (2013) for an example of the incentives facing banks after the application of Basel 2.5.

Recommendations

Authorities from home and host countries need to establish good communication and coordination channels.[33] Communication channels must also include the head offices of global banks. Financial supervisors must ensure that risk policies and exposure limits applied by a global bank adequately account for the local conditions of the host-country economies in which its overseas subsidiaries operate.

The BCBS could be asked to ensure that existing reviews study differences in the implementation of the Basel framework for global banks and assess the degree to which there is consistent implementation of capital standards, and avenues for arbitrage should be closed off.[34]

Consolidation practices used for capital adequacy purposes should recognize the booking institution and currency of denomination of sovereign exposures. When a balanced book in the local currency of the host country can be maintained at the subsidiary, with the loan and security asset positions (including the sovereign EMDE debt) funded by approximately equal amounts of local funding denominated in the local host-country currency, it may be appropriate to measure the risk for the global bank by its net exposure in the subsidiary, and not by the gross positions. Banks' risk management systems should be sophisticated enough to assess this possibility when appropriate.

Consolidation practices and regulation from the home country should avoid mechanistic use of CRA global sovereign ratings as it was suggested in the FSB Principles for Reducing Reliance on CRA Ratings.[35]

Global banks are not incorporated as single legal entities, but as conglomerates of separate legal entities. However, global banks aim to manage their risks and report their financial results by consolidating all their subsidiaries´ assets and liabilities with those of the head office. International banks may hedge their risks on a global basis, and they may book risk exposures in different entities within the group that will offset each other while leaving specific entities carrying inappropriate amounts of risk. In the absence of burden-

[33] Some members consider that the Association of Supervisors of Banks of the Americas (ASBA) and the Central American Council of Supervisors of Banking, Insurance and Other Financial Institutions (Consejo Centroamericano de Superintendentes de Bancos, de Seguros y de Otras Instituciones Financieras –CCSBSO) may be the appropriate fora to discuss and coordinate work on these and other topics mentioned in the report.

[34] The BCBS has indicated its intention to improve the international consistency of the scope of consolidation for prudential regulatory purposes so as to ensure that all banks' activities, including their interaction with the shadow banking system, are appropriately captured within the prudential regime.

[35] CRA ratings are still widely used. For example, CRA ratings are used under the standardized approach, to calculate risk-weighted assets. Moreover, even when some banks use the IRB or an internal model approach and would not need to use CRA ratings, banks reported using them (see Section 4).

sharing agreements, the supervisors of all these entities operating under the umbrella of the global bank must maintain close coordination to reap the benefits of consolidation and centralized risk management.

Home supervisors also aim to apply consolidated supervision to their international banks, and international standards call for the consolidated supervision of internationally active banks. However, current international standards (i.e., the Basel Concordat, the Core Principles for Effective Bank Supervision, and the Basel Capital Framework) do not address the distribution of capital within a global banking group. International regulation should recognize that the distribution of capital within the group is important since it may not always be available for each of the consolidated entities belonging to the global bank. This issue came to the forefront of the discussion by authorities during the recent international crisis and needs to be carefully analyzed as part of the current work to strengthen international standards. [36,37]

[36] See Tucker (2013) for a thorough discussion of this issue.

[37] For example, Cerutti and Schmieder (2013) compare the results of consolidated capital requirements for European banks when capital and liquidity cannot move freely within the banking group.

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Annex I: Questionnaire on risk-management practices and capital allocation by global banks.

I. Risk Weighted Assets (RWA) Estimation

Questions should be answered taking into consideration your largest foreign subsidiaries established in the Emerging and Developing Market Economies (EMDE)[38] in terms of assets (e.g., top 10 subsidiaries). Also, please explain if there are significant differences in risk-management policies among your top subsidiaries.

a. CREDIT RISK

a.1. Sovereign exposures

Limits and policies

1. What are the limits for your subsidiaries local sovereign positions in terms of amount, tenor, concentration or other factors?

2. Are sovereign risk policies and limits defined and approved by head office or by your subsidiaries? If they are defined by your subsidiaries, how do you ensure consistency against head office policies? Please explain the criteria used to set policies and limits (e.g. ratings, capital consumption, diversification, etc.)

Risk-weighted assets

3. Do you use the Internal Ratings Based (IRB) approach or the Standardized approach for computing RWA for sovereign exposures booked in your subsidiaries? If you use the IRB approach do you use the foundation or advanced approach?

Banks using an IRB approach

4. Who is in charge of estimating the relevant IRB credit risk parameters for sovereign exposures booked in your subsidiaries (e.g. Probability of Default-PD, Loss Given Default-LGD, etc.), the head office or the subsidiaries?

5. Please describe the procedure used to estimate PD, LGD and other relevant parameters used for sovereign risk. Is the PD estimate the same for your subsidiaries and for the head office?

[38] Se Annex 1 of this questionnaire for the definition and list of EMDEs.

Banks using the Standardized approach

6. The ratings issued by External Credit Assessment Institutions (ECAIs) to risk weight your sovereign exposures for capital adequacy purposes may be local, global or both. In some cases, different ratings issued by ECAIs may be used at the subsidiary level compared to the consolidated bank. Complete the table below indicating whether the ratings used for capital adequacy purposes are local (i.e. national), global (i.e. international) or both at the subsidiary level and for the same exposures at the consolidated level. Complete the schedule based on your most predominant approach:

Sovereign	**ECAI used for capital adequacy purposes <u>by subsidiaries</u> – indicate whether local, global or both**		**ECAI used for capital adequacy purposes <u>by the consolidated entity</u> for exposures booked in subsidiaries – indicate whether local, global or both**	
	Local Currency	Foreign Currency	Local Currency	Foreign Currency
Bonds				
Lending				

7. Does your regulator allow you to apply a lower risk weight for sovereign exposures when exposures are funded in local currency?

a.2. Lending Risk (Banks & Corporate)

Limits and policies

8. Are bank and corporate lending risk policies and limits defined and approved by head office or by your subsidiaries? If they are defined by your subsidiaries, how do you ensure consistency against head office policies? Please explain the criteria used to set policies and limits (e.g., ratings, capital consumption, diversification, etc.).

9. When the subsidiaries assets and liabilities are consolidated with those of head office, some banks re-price local currency loans using the head office models for foreign currency loans. Other banks apply a cross border charge to the subsidiaries' models, while others apply a sovereign floor on the PD sovereign floor of the local loans. Do the loan pricing models used by your head office for your host based currency loans use

the same risk parameters as of the loan pricing model used by subsidiaries for local currency loans? Please explain the differences, if any.

10. Do you set concentration limits (i.e. industry, sector, business line, etc.) and/or term limits based on ECAI ratings? If so, do you use global or local ECAI ratings? Please provide any criteria you use to set these limits.

Risk-weighted assets

11. Do you use the internal ratings based (IRB) approach or the Standardized approach for computing credit RWA for bank and corporate exposures booked in your subsidiaries? If you use the IRB approach do you use, the foundation or advanced approach?

Banks using an IRB approach

12. Please describe the procedure used to estimate PD, LGD and other relevant IRB parameters for bank and corporate exposures booked in your subsidiaries. Is the methodology used to estimate PDs the same for your subsidiaries and for head office?

Banks using the Standardized approach

13. The ratings issued by the External credit Assessment Institutions (ECAIs) used to risk weight your bank and corporate exposures for capital adequacy purposes may be local, global or both. In some cases, different ratings issued by ECAIs may be used at the subsidiary level compared to the consolidated bank. Complete the table below indicating whether the ECAIs used for capital adequacy purposes are local (i.e. national), global (i.e. international) or both at the subsidiary level and for the same exposures at the consolidated level. Complete the schedule based on your most predominant approach:

14.

Exposure Class	ECAI used for capital adequacy purposes by subsidiaries – indicate whether local, global or both		ECAI used for capital adequacy purposes by the consolidated entity for subsidiaries exposures – indicate whether local, global or both	
	Local Currency	Foreign Currency	Local Currency	Foreign Currency
Interbank Lending				
Bank Bonds				
Corporate Lending				
Corporate Bonds				

b. MARKET RISK

Trading Book

15. Do you use the standardized approach (SA) or the internal models approach (IMA) to calculate Market RWA (MRWA)?

Banks using IMA

b.1. Value at Risk

16. Describe the following VaR parameters to calculate your subsidiaries' MRWA:

    a) Methodology (Delta VaR, Historic VaR, Monte Carlo, etc.)

17. To determine VaR for regulatory capital purposes at the consolidated level, do you take a top-down consolidated approach or do you take a bottom-up approach and aggregate VaR estimates from subsidiaries? If you take a bottom up aggregation approach, do you assign local diversification factors to each subsidiary?

b.2. Stressed VaR (if approved)

18. Describe the stressed VaR parameters used to calculate your subsidiaries' MRWA.

19. Is the stress scenario period the same across all subsidiaries?

20. To determine Stress VaR for regulatory capital purposes at a consolidated level, do you take a top-down consolidated approach or do you take a bottom-up approach and aggregate Stress VaR estimates from subsidiaries? If you take a bottom-up aggregation approach, do you incorporate diversification benefits?

b.3. Incremental Risk Charge (IRC) (if approved)

21. Describe the following IRC parameters used at a consolidated level:

    a) To estimate IRC, do you apply a zero or a positive risk weight to your subsidiaries' exposures in their local sovereign bonds denominated in local currency? Please also explain if there are any exceptions.

    b) To calculate IRC at a consolidated level, do you aggregate positions or IRC figures from your subsidiaries?

    c) Does your global IRC model take into account any diversification benefits from exposures in your subsidiaries?

    d) What type of rating scale methodology do you use? If external rating are used please fill the table below:

Bond Type	**ECAI scale used for IRC purposes by foreign subsidiary (if apply) – indicate whether local (i.e., national), global (i.e., international) or both**		**ECAI used for IRC purposes by the consolidated entity for subsidiaries exposures – indicate whether local (i.e., national), global (i.e., international) or both**	
	Local Currency	Foreign Currency	Local Currency	Foreign Currency
Sovereign				
Bank				
Corporate				

    e) Are bond seniorities considered in the IRC model?

f) Is your IRC model based on Mark-to-market (MTM) or Notional exposures?

g) How do you account for foreign exchange risk associated with debt instruments in different currencies?

h) Did you establish IRC limits to each one of your subsidiaries or do you manage the IRC limits at a consolidated level? Please explain.

II. Balance Sheet RWA Consolidation and Allocation

22. Please select the criteria or target(s) used to allocate regulatory capital to your subsidiaries (Please select all that apply):

    a. Returns (on RWA, Regulatory Capital (home country or local) or tangible equity). Pease explain.

    b. Capital ratio

    c. RWA

    d. All of the above

    e. Other (please mention which one(s))

23. If the capital allocation among your subsidiaries is based on returns, please explain if the returns are estimated using subsidiaries' local accounting standards or Head Office's accounting standards?

24. Please specify the metric(s) used to measure performance (ROE, ROA RAROC, other) and indicate if calculations are done at the head office or at subsidiaries.

25. Do you establish Balance Sheet limits for your subsidiaries? If so, please describe them briefly.

III. Regulatory Reporting

a. BASEL 2.5

This section is to be answered only by banks that already apply Basel 2.5 regulation

25. Did the implementation of Basel 2.5 lead to a change in business strategy at the head office or at your subsidiaries?

26. Do you consolidate your subsidiaries' and head office balance sheets and RWA using Basel 2.5 criteria?

27. If your answer to the question above is yes, please indicate the percentage difference in RWA (at a consolidated level) after applying Basel 2.5 on your subsidiaries.

Risk Type	RWA Increase / Decrease (%)			
	Head office (before consolidation)		Subsidiaries	
	Banking	Trading	Banking	Trading
Market				
Credit				

28. Did implementation of Basel 2.5 result in an increase / decrease in economic and regulatory capital charges at the consolidated level? Were these changes driven by your subsidiaries' exposures? Please explain.

29. Were your subsidiaries' performance measures impacted by the above increase / decrease? (Please refer to the performance measures you listed in question 22)

30. How were local bond securitizations trading positions impacted by Basel 2.5?

31. Which products and business lines were the most affected by Basel 2.5?

Annex 1. Emerging and Developing Economies

The group of emerging and developing economies (151) includes all those that are not classified as advanced economies. The regional breakdowns of emerging and developing economies are central and eastern Europe (CEE), Commonwealth of Independent States (CIS), developing Asia, Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), and sub-Saharan Africa (SSA).

Central and Eastern Europe	Kiribati	Mexico	Burundi
Albania	Lao P.D.R.	Nicaragua	Cameroon
Bosnia and Herzegovina	Malaysia	Panamá	Cape Verde
Bulgaria	Maldives	Paraguay	Central African Republic
Croatia	Myanmar	Peru	Chad
Hungary	Nepal	St. Kitts and Nevis	Comoros
Kosovo	Pakistan	St. Lucia	Democratic Republic of the Congo
Latvia	Papua New Guinea	St. Vincent and the Granadines	Republic of Congo
Lithuania	Philippines	Suriname	Côte d'Ivoire
FYR Macedonia	Samoa	Trinidad and Tobago	Equatorial Guinea
Montenegro	Solomon Islands	Uruguay	Eritrea
Poland	Sri Lanka	Venezuela	Ethiopia
Romania	Thailand	**Middle East and North Africa**	Gabon
Serbia	Timor-Leste	Africa	The Gambia
Turkey	Tonga	Algeria	Ghana
Commonwealth of Independent States	Tuvalu	Bahrain	Guinea
Armenia	Vanuatu	Djibouti	Guinea-Bissau
Azerbaijan	Vietnam	Egypt	Kenya
Belarus	**Latin America and the Caribbean**	Iran	Lesotho
Georgia	Antigua and Barbuda	Iraq	Liberia
Kazakhstan	Argentina	Jordan	Madagascar
Kyrgyz Republic	The Bahamas	Kuwait	Malawi
Moldova	Barbados	Lebanon	Mali
Mongolia	Belize	Libya	Mauritius
Russia	Bolivia	Mauritania	Mozambique
Tajikistan	Brazil	Morocco	Namibia
Turkmenistan	Chile	Oman	Niger
Ukraine	Colombia	Qatar	Nigeria
Uzbekistan	Costa Rica	Saudi Arabia	Rwanda
Developing Asia	Dominica	Sudan	São Tomé and Príncipe
Afghanistan	Dominican Republic	Syria	Senegal
Bangladesh	Ecuador	Tunisia	Seychelles
Bhutan	El Salvador	United Arab Emirates	Sierra Leone
Brunei Darussalam	Grenada	Yemen	South Africa
Cambodia	Guatemala	**Sub-Saharan Africa**	South Sudan
China	Guyana	Angola	Swaziland
Fiji	Haiti	Benin	Tanzania
India	Honduras	Botswana	Togo
Indonesia	Jamaica	Burkina Faso	Uganda
			Zambia
			Zimbabwe

Source: IMF

Annex II: Market share of global and regional banks as a percentage of assets in banking sector

Institution	Origin	Argentina	Bahamas	Barbados	Bermuda	Bolivia	Brazil	British Virgin Islands	Cayman Islands	Chile	Colombia	Costa Rica	El Salvador	Guatemala	Honduras	Jamaica	Mexico	Panama	Paraguay	Peru	Puerto Rico	Uruguay	Rank[1]
Member of the RCGA		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	X	✓	✓	✓	✓	✓	X	✓	
Santander	Spain	6.6					7.8			18.2							12.4	1.0			10.6	15.9	7.4
Itaú Unibanco	Brazil	1.3	✓				15.6			3.8									16.7			9.0	6.9
BBVA	Spain	5.5					0.0			6.7	9.1				3.4		20.4			22.1		8.8	6.2
Citigroup	USA	2.5	✓	12.2			1.1				2.4	8.4	13.8	3.1	3.3	2.9	18.5		2.7	2.9	3.2	4.6	4.9
HSBC	UK	4.3			✓		2.5		✓	0.9	0.6	13.2					8.2		4.5			4.0	3.3
Scotiabank	Canada		✓	4.4				✓	✓	4.5	0.2	20.7	14.1	0.7		33.5	3.6	0.3		14.6	8.8		1.8
Deutsche Bank	Germany	0.3					0.6		✓	0.8							3.5			0.6			1.0
Credit Suisse	Switzerland						0.6		✓								0.9						0.4
BAC International Bank	Colombia		✓									30.1		2.9	14.6			4.4					0.3

[1]**Rank:** Calculated as the weighted sum (by gross domestic product) of local market share in the region.

✓ **:** Indicates that the bank operates in the country but market share data was not available.

Sources: i) Banks' assets come from national bank supervisory authorities (latest data available December 2012, January 2013*); ii) Gross domestic product figures come from the International Monetary Fund World Economic Outlook Database (October 2012).

*The market shares of these banks have changed since the date in which they were selected to participate in the survey. For example, Scotiabank is no longer present in Guatemala, and HSBC sold its banking operations in Colombia, Costa Rica, Paraguay and Uruguay.

Annex III: Example of the quantitative impact of Basel 2.5

The additional capital charges introduced by Basel 2.5 may exacerbate the costs for global banks of holding overseas domestic sovereign debt and other overseas exposures when global credit ratings are used. The increase in risk weights and in capital charges could be particularly significant for positions taken by global banks in emerging markets and developing economies' financial markets due to their historical higher volatility and relatively lower credit ratings. The increase in capital charges will also be particularly significant for sovereign domestic debt held by large subsidiaries of global banks because their risk positions may trigger incremental capital charges for concentration risks.

Capital requirements for some countries' sovereign bonds may increase as much as sixteen-fold as a consequence of Basel 2.5. Table 1 shows the impact of consolidation on risk-weighted assets, capital requirements, and expected return on equity for a domestically owned bank and a foreign-owned bank investing in 5- and 30-year sovereign bonds rated BBB+. When the operations of the foreign-owned bank are consolidated with those of the parent bank, these additional capital charges (e.g., a six-fold increase) may exacerbate the costs for global banks of holding overseas domestic sovereign debt and other overseas exposures when global credit ratings are used or when the parent bank believes that the particular foreign local sovereign (to which its overseas subsidiary is exposed) has a higher default probability. In the example below, it is assumed that the parent bank does not assign the lowest risk rating that is often given to sovereign exposures.[39]

Table 2 shows the capital requirements for sovereign bonds issued by some of the countries where global banks answering the questionnaire[40] have operations. The IRC charge sharply increases capital requirements associated with five-year sovereign bonds rated BBB+ or below.[41]Countries with high credit ratings such as Canada, the United States and Chile are not affected as much as their peers with lower credit ratings.

[39] Diversification benefits were not included in the calculations that appear in Tables 1 and 2.
[40] See Section 4.
[41] Pepe (2013) also shows how calculation of capital requirements based on global ratings may introduce cliff effects.

Table 1
Capital requirements and RoE for domestic- and foreign-owned banks
(for a bond with a 100 MX peso face value)

	Yield[1]	RWA[2]			Capital requirements[3]			RoE[4]		
		Basel 2.0	Basel 2.5		Basel 2.0	Basel 2.5		Basel 2.0	Basel 2.5	
	%	%	%		%	%		%	%	
	All banks	All banks	Domestic	Foreign	All banks	Domestic	Foreign	All banks	Domestic	Foreign
5y bond	4.9	25.0	65.5	409.1	2.0	5.2	32.7	79.7	30.5	4.9
30y bond	7.6	104.4	496.1	697.0	8.4	39.7	55.8	51.4	10.8	7.7

Source: Banco de Mexico

1 Yield: return on different sovereign bonds. June 2014.

2 RWA: Risk-weighted assets. Includes VaR, SVaR and IRC. Obtained by multiplying the capital requirement by 12.5. (This computation reflects the fact that the minimum capital requirement is set at 8% of RWA).

3 The capital requirement is computed by adding the VaR, the Stressed VaR and the IRC, as shown by the following formula, which was simplified for illustrative purposes. VaR and SVaR are value-at-risk calculations with a 10-day horizon, and averages are taken over daily value-at-risk estimates over a 60-day period:

Capital requirement = $\max\{VaR_{t-1}; 3 \times VaR_{average}\} + \max\{SVaR_{t-1}; 3 \times SVaR_{average}\} + IRC$

Hence, for a domestically AAA-rated 5-year bond, Basel 2.5 capital requirements will be:

Capital requirement = 2.0% + 3.2% + 0.0% = 5.2%

For a global BBB+-rated 5-year bond, Basel 2.5 capital requirements will be:

Capital requirement = 2.0% + 3.2% + 27.5% = 32.7%

VaR was derived using a Monte Carlo simulation for a hypothetical par bond using data on the corresponding zero curves.

SVaR was derived using an approach similar to that used for calculating VaR. Parameters such as volatilities were obtained from a 12-month period where stress conditions were observed, following guidelines in Basel 2.5. A different stress period might have been used across terms or jurisdictions, depending on local conditions.

The IRC was obtained from a Monte Carlo simulation, where credit rating migrations were simulated, and changes reflected through credit spreads of the bond. The transition-rating-migration matrix used was the "Sovereign Foreign-Currency Average Five-Year Transition Rates" from the "Default, Transition, and Recovery: Sovereign Defaults and Rating Transition Data" Standard and Poor's study (February 2011), which was annualized. A loss given default of 30% was assumed.

4 RoE: Return on equity, estimated by dividing a bond's yield, net of funding costs (TIIE=3.3%), by the capital requirement.

Table 2.
Capital requirements[1] for a 5-year sovereign bond with a value of 100 units of local currency

Country	Rating Local currency[2]	VaR[3] (a)	SVaR[4] (b)	IRC[5] (c)	Using Aaa rating for local sovereign[6] (a+b)	Using global rating[7] (a+b+c)
Canada	AAA	1.3	2.4	0.0	3.6	3.6
Germany	AAA	1.2	2.7	0.0	3.9	3.9
Switzerland	AAA	0.8	2.1	0.0	2.9	2.9
United Kingdom	AA+	1.5	2.8	0.1	4.2	4.3
United States of America	AA+	1.5	4.0	0.1	5.5	5.6
Spain	BBB	1.8	6.3	27.5	8.1	35.6
Latin America & Caribbean						
Brazil	BBB	5.3	8.9	27.5	14.2	41.6
Chile	A+	2.9	4.3	0.0	7.2	7.3
Colombia	BBB-	2.7	6.6	27.5	9.3	36.8
Jamaica	CCC-	2.3	44.0	29.9	46.2	76.2
Mexico	BBB+	2.0	3.2	27.5	5.2	32.7
Peru	BBB	3.7	4.9	27.5	8.6	36.0

Source: Banco de Mexico with data from Standard and Poor´s (S&P), Moody's, Fitch and Bloomberg. June 2014.

1 The capital requirement would be computed as the sum of the VaR, the SVaR and the IRC (see footnote 3 of Table 1 for further details).

2 The lowest long-term global rating of debt issued in local currency among the main three rating agencies (S&P, Moody's and Fitch) was used. As in Basel II, the ratings shown in the table follow the scale of one institution, S&P. The use of S&P credit ratings is an example only; those of the other credit rating agencies may equally well be used . Some members of the working group maintain that sovereign ratings assigned by credit rating agencies do not reflect the true creditworthiness of the sovereigns which they are evaluating.

3 VaR was derived using a Monte Carlo simulation for a hypothetical par bond using data on the corresponding zero curves.

4 SVaR was derived using an approach similar to that used for calculating VaR. Parameters such as volatilities were obtained from a 12-month period where stress conditions were observed, following guidelines in Basel 2.5. A different stress period might have been used across terms or jurisdictions, depending on local conditions.

5 The IRC was obtained from a Monte Carlo simulation, where credit rating migrations were simulated, and changes reflected through credit spreads of the bond. The transition rating migration matrix used was the "Sovereign Foreign-Currency Average Five-Year Transition Rates" from the "Default, Transition, and Recovery: Sovereign Defaults and Rating Transition Data" Standard and Poor's study (February 2011) which was annualized. A loss given default of 30% was assumed.

6 Since the government is assumed to have the highest credit rating within the country, the corresponding IRC=0 (for example, see Canada or Germany). For this reason the capital requirement that appears in this column is the sum of the VaR and SVaR for each country.

7 The capital requirement is the sum of the VaR, SVaR and the IRC.

Annex IV: Members of working group on effects on host countries of balance-sheet-consolidation and risk-management practices by global banks

Pascual O'Dogherty	Co-chair **The Bank of Mexico** Director General of Financial Stability
Gerardo Hernández	Co-chair **The Financial Superintendence of Colombia** Superintendent
Delia Novello	**The Bank of the Republic of Argentina** Manager of the Regulatory Research and Planning Department
Anton Belgrave	**The Central Bank of Barbados** Deputy Director, Research and Economic Analysis Department
Carlos Ahmar	**The Central Bank of Brazil** Head of Division at the Department of Supervision of Banks and Banking Conglomerates
Nancy Sinclair	**The Office of the Superintendent of Financial Institutions Canada** Director, Policy Performance and Capital Analysis and Reporting
Hakan Lundgren	**The Superintendence of Banks and Financial Institutions Chile** Analyst, Directorate of Studies and Financial Analysis
Ruben Mendiolaza	**The Superintendence of Banking, Insurance and Private Pension Fund Administrators Peru** Deputy Superintendent of Banking and Microfinance
Jin Soo Lee	**The FSB Secretariat**