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BASEL II Pillar II Practice Study

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ABBREVIATIONS AND ACRONYMS

AMA	advanced measurement approach
A-IRB	advanced internal ratings-based approach
BCBS	Basel Committee on Banking Supervision
BIA	basic indicator approach
CCPs	central counterparties
CEO	chief executive officer
D-SIB	domestic systemically important bank
EU	European Union
F-IRB	foundation internal ratings-based approach
G-SIB	global systemically important bank
ICAAP	internal capital adequacy assessment process
ILAAP	internal liquidity adequacy assessment process
IMA	internal models approach
IMF	International Monetary Fund
IRB	internal ratings-based
IRRBB	interest rate risk in the banking book
LCR	liquidity coverage ratio
NSFR	net stable funding ratio
OSFI	Office of the Superintendent of Financial Institutions
PD	probability of default
RBS	risk-based supervision
RCAP	Regulatory Consistency Assessment Programme
RWA	risk-weighted assets
SREP	supervisory review and evaluation process
TSA	standardized approach for operational risk
U.S.	United States
WB	World Bank

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EXECUTIVE SUMMARY

Pillar II is a key element of the Basel Capital Framework. It requires banks to formalize a comprehensive process to assess and measure their internal overall capital needs, a process called the internal capital adequacy assessment process (ICAAP). It also requires that supervisors ensure they have the right tools to evaluate banks' risk systems, risk profiles, strategic planning, and corresponding links to capital calculations, which is the supervisory review and evaluation process (SREP). Supervisors should be empowered to require capital above the minimum regulatory level and adequate tools for rapid remedial action and early intervention when needed.

Pillar II is principles based and bank specific—two features that challenge both financial institutions and supervisors. This Pillar is not based on fixed rules, and there is no "one size fits all" approach. Therefore, a range of different practices is observed across jurisdictions. Approaches vary from those in which supervisors assume a strong leadership role to others that rely more on banks' internal processes and methodologies.

This paper summarizes the range of approaches adopted in a sample of surveyed World Bank (WB) client jurisdictions when implementing Pillar II. The WB conducted a survey in a sample of jurisdictions to learn client countries' experiences in implementing this Pillar. The survey collected information regarding (a) how supervisors have approached the ICAAP and the expectations they have therein, (b) how supervisors consider and respond to banks' ICAAP (the SREP), and (c) which corrective actions and tools are available in each jurisdiction. The surveyed countries are emerging markets that are committed to implement Basel II and III, even though the degree of implementation differs among respondents. The majority of the surveyed countries are non-Basel Committee members.

Regarding the ICAAP, the survey allows the identification of some commonalities and differences among respondents. Most of the respondents have issued guidelines requiring banks to implement an ICAAP, but the level of prescription differs among jurisdictions. Furthermore, supervisors adopt different approaches to the risks required to be assessed in the ICAAP. Whereas some supervisors suggest only some risks that should be assessed by institutions, others mandate the minimum risks for which banks must have Pillar II capital. Most respondents to the survey developed a template to be used by financial institutions. The contents and degree of prescription vary from country to country, but the survey allows the identification of elements that are typically required by a supervisor as part of the ICAAP template.

Surveyed jurisdictions follow different approaches to the level at which ICAAPs are required when the institution is part of a financial group. For most respondents, ICAAPs are required on both a consolidated and a stand-alone basis. For others, however, the ICAAP is required only at the consolidated level; in one jurisdiction, it is required only on a stand-alone basis. Moreover, most respondents are host supervisors of branches and subsidiaries of international banking groups, and those respondents have adopted requirements to ensure that the ICAAP is properly targeted to the institution operating locally.

All respondents consider that, in practice, proportionality is embedded in ICAAPs and that reports and methodologies vary with the size and complexity of banks. Further, most respondents require quantitative and qualitative information as part of the ICAAP, and the complexity of the quantitative approaches very much depends on the characteristics of the institutions.

Transparency and disclosure of the ICAAP are not required in most of the respondents' jurisdictions. Only one respondent requires banks to disclose a summary of the institution's approach to assessing the adequacy of its internal capital to support business, but that respondent does not require that quantitative capital needs be disclosed.

Regarding the SREP, although most surveyed jurisdictions have developed specific processes and guidelines, others may conduct an SREP as part of regular examinations. Moreover, most respondents do not assign a specific rating that is for each supervised institution and is based on the SREP. Supervisors consider that proportionality is key to the SREP, and they follow various approaches to implement the assessment. Establishing a formal categorization for financial institutions is a common practice adopted by respondents to support the SREP.

Respondent supervisors conduct the SREP by combining inputs from different sources. All respondents use on-site and off-site reviews and discussions with the bank and other stakeholders to underpin the assessment. The ICAAP typically is discussed with banks' management, and in only some countries do supervisors also discuss it with banks' boards and risk committees.

In most of the surveyed jurisdictions, the Pillar II capital amount is primarily determined by banks, whereas in others, supervisors adopt a more prominent role. Moreover, in most respondent jurisdictions, failure of a bank to satisfy the Pillar II capital requirement constitutes noncompliance. In most countries, banks are not allowed to use capital that has been allocated to Pillar II.

All surveyed supervisors have tools available to deal with less-than-satisfactory ICAAP results. Those tools include (a) requiring banks to improve risk management systems and controls, (b) intensifying monitoring of the bank, (c) requiring additional capital, (d) requiring a capital adequacy restoration plan, (e) restricting payment of dividends, (f) restricting banks' current activities, and (g) prohibiting new activities or acquisitions.

Finally, drawing on identified practices, the paper sheds light on some lessons and on desirable characteristics and elements for the ICAAP and the SREP. Regarding the ICAAP, the elements addressed include the role of supervisory guidelines and templates, the importance of proportionality, the capital plans with clear time horizons, and the role of transparency and disclosure. Regarding the SREP, lessons are discussed on topics such as the importance of a strong culture of risk-based supervision to underpin the SREP, the importance of implementing a proportional approach, and the need for a structured dialogue between supervisors and institutions.

I. INTRODUCTION

The implementation of Basel II has been a significant challenge for banks and supervisors for more than 10 years. The Basel II Framework emerged within the context of the international regulatory landscape in 2004,[1] with a challenging new approach to calculate and assess capital needs (BCBS 2004). Since the days of its predecessor, Basel I,[2] supervisors have been familiar with having minimum capital charges agreed on at the international level. Nevertheless, the Basel II Framework proposed an innovative approach for the time. Basel II is built on the "Three Pillar Approach," in which total capital requirements are the result of not only a regulatory requirement (Pillar I) but also an internal assessment by banks as well as a supervisory review (Pillar II), and it is supported by strong bank disclosure requirements (Pillar III).

The 2008 financial crisis underscored the need to strengthen global capital and liquidity rules to promote a more resilient banking sector. To address the market failures revealed by the crisis, the Basel Committee on Banking Supervision (BCBS) introduced a number of fundamental reforms to the international regulatory framework. The reforms strengthened bank-level, microprudential regulations, but they also had a macroprudential focus. The package known as the Basel III Framework not only strengthened Basel II but also introduced additional measures.

Similar to other BCBS standards, the Basel II Framework was aimed at being applied—on a consolidated basis—to internationally active banks. Nevertheless, a considerable number of supervisors around the globe adopted the standard not only for such institutions but also for local banks.

Basel II implementation typically starts with the adoption of Pillar I, the minimum capital requirement. Once the foundations for the calculation of minimum (regulatory) capital are in place, supervisors typically start addressing the design and implementation of the second Pillar.

Pillar II is flexible, and different jurisdictions display a range of different practices. Approaches vary from those in which supervisors assume a strong leadership role (for instance, by offering detailed guidance to calculate Pillar II risks) to those that rely on banks' internal processes and methodologies. Some elements are key determinants of the approaches chosen by jurisdictions, such as the supervisory culture, the ability to exercise expert judgment, and the existence of legal foundations allowing the use of supervisory judgment and the enforcement of decisions made therein. Moreover, the experience shows that a sound legal protection framework for supervisors and experience with risk-based supervision (RBS) are key determinants for effective implementation of Pillar II.

Supervisors have typically assessed capital adequacy as part of their regular supervisory procedures. Under RBS, supervisors should assess whether banks have enough capital not only to satisfy regulatory requirements but also to address all of the significant risks they may face. The second Pillar of Basel II formalizes that process. It explicitly requires banks to implement an internal capital adequacy assessment process (ICAAP) and supervisors to have a well-established, formal process in place to review banks' capital assessment (the supervisory review and evaluation process [SREP]).

[1] The original version was released in June 2004; a comprehensive version was issued in June 2006 (BCBS 2006).
[2] BCBS 1988.

Pillar II implementation is challenging both for institutions and for supervisors. Financial institutions are required to demonstrate that they have a well-designed internal process in place to assess their total capital needs, not just to meet a regulatory requirement. Quantitative techniques to measure risks and capital are not enough; those techniques must be accompanied by sound corporate governance and risk management frameworks. Total capital must be consistent with the bank's risk profile, business model, and operating environment. Capital should be forward looking, and it should be sufficient to cover potential losses not only under normal conditions but also under extreme but plausible events (stressed scenarios).

The World Bank (WB) has undertaken a study of Pillar II practices in selected countries to assist jurisdictions in their goal of further implementation of international capital standards. As a basis for the work, the WB designed a survey (a) to collect information regarding how supervisors have approached the ICAAP and the expectations they have therein and (b) to understand how supervisors consider and respond to banks' ICAAP (the SREP). The survey was organized in five sections: (a) an overall discussion of the capital adequacy regime in each country, (b) a set of questions related to the institution's ICAAP, (c) a description of how the SREP is designed and implemented by supervisors, (d) a list of supervisors' responses, and (e) a series of corrective actions available to supervisors for Pillar II purposes. The survey collected information about respondents' practices as of the submission date in September 2017.

The countries selected to participate in the survey were emerging markets that are WB client jurisdictions from different geographical regions. Ten countries responded to the survey (table 1). Some of those countries have committed to Basel II implementation, whereas others have already implemented Basel III. The formality of those commitments differs among countries, and implementation of both Basel II and Basel III is at different stages. Some countries are BCBS members and have formal commitments to implement the standards, whereas others are adopting Basel II and III to keep pace with international standards.

Table 1. Jurisdictions That Responded to the Survey

	Countries	World Bank Classification	Basel Committee Members
1	Argentina	Latin America and the Caribbean	X
2	Colombia		
3	Peru		
4	Croatia	Europe and Central Asia	
5	Turkey		X
6	Poland		
7	Korea	East Asia and Pacific	X
8	Thailand		
9	Morocco	Middle East and North Africa	
10	Nigeria	Sub-Saharan Africa	

Note: World Bank regional classifications can be found here: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519.

This document presents an analysis of countries' responses aimed at helping supervisors identify common practices, challenges, and lessons from Pillar II implementation. This paper is targeted to help supervisory authorities, especially those in emerging markets, with the design and implementation of the second pillar of Basel II. Thus, supervisors may learn from the experience of similar jurisdictions surveyed for this project. As a by-product, this document contributes to constructive supervisory discussions with banks regarding their direction and progress in implementing standards. It also indicates, at a high level, the range of practices and nuances therein. The paper builds on responses provided by the surveyed jurisdictions, and information was cross-checked with the legislation and with documents provided by respondents. Nevertheless, no further examination was performed to assess how a specific requirement is effectively applied in practice; that additional review is beyond the scope of this work.

The structure of the paper is as follows: Section II offers a brief discussion about international capital standards and their recent evolution, and it focuses on Pillar II. That section also describes how laws and regulations operate in practice to support Pillar II implementation. Section III presents the main findings in surveyed jurisdictions. That section reviews the capital regime in the countries that responded to the survey. It also outlines the main findings on ICAAP implementation and describes the main findings and practices on the SREP. In Section IV, the paper sets out a range of measures that supervisors can consider when dealing with Pillar II implementation.


Plan
Assessme
Analysis
RISK
Process
M
Control
Check

II. LEGAL FRAMEWORK: INTERNATIONAL STANDARDS AND PRACTICE

Basel Capital Standards

After a period of intensive preparation, the BCBS released the Basel II Framework in June 2004. The BCBS conducted five rounds of quantitative impact studies from 1999 to 2003 and consulted extensively with banking sector representatives, supervisory agencies, central banks, and other stakeholders to develop a framework with more risk-sensitive capital requirements than did the previous 1988 Accord.[3]

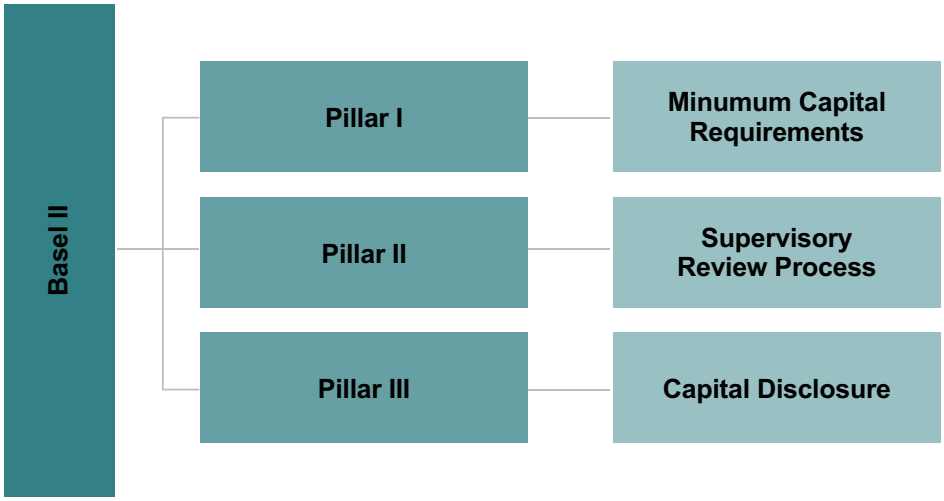
The 1988 Accord (Basel I) was the first standard agreed on to establish common capital requirements for internationally active banks and to promote a level playing field. It called for a minimum ratio of capital to risk-weighted assets (RWA) of 8 percent (BCBS 1988). Initially, it focused on credit risk, but in 1996, the BCBS issued an amendment to include capital charges for market risk (BCBS 1996). Banks were, for the first time, allowed to use internal models as a basis for measuring their market risk capital requirements, subject to quantitative and qualitative standards. Ultimately, Basel I was introduced not only in BCBS member countries but also in virtually all countries with active international banks and in jurisdictions with no international banks.

Eventually, Basel I became outdated because it did not keep pace with financial innovation, banks' capital, risk management advances, and supervisory practices. Business models were propelled by rapid innovation in financial instruments that were not properly captured by Basel I. The interaction of the credit derivative markets with the growth of securitization technology and the rapid growth of the institutional investor base entailed additional challenges. There was rapid growth in investor appetite for new forms of credit risk. Basel I was not risk sensitive enough. For instance, for credit risk measurement, there were only five risk weights for all exposures and a "one size fits all" approach. There was limited scope for proportionality. Some significant financial products at that time, such as securitizations, were not addressed by the framework, which introduced incentives for banks to move some assets off their balance sheets and thus promoted regulatory arbitrage.

Basel II represented a paradigm shift in the approach to capital regulation that existed at that time. First, minimum capital is required to address not only credit and market risk but also operational risk. Several options were made available to calculate capital for each one of those risks, from standardized to more risk-sensitive, internally based (model-based) approaches (Pillar I, Minimum Capital Requirements). Second, capital needs are determined not only by the minimum requirement established by regulators but also by an internal, well-informed process in the bank. Supervisors should have the ability to review that process, to require more capital, and to intervene when necessary (Pillar II, the Supervisory Review Process). Third, banks should disclose information to the public to explain how they calculate and manage the public's capital needs. Transparency is particularly important when banks calculate Pillar I capital using approaches that are based on their own internal (not-so-transparent) methodologies (Pillar III, Market Discipline) (figure 1).

[3] For further discussions, see BCBS 2018a

Figure 1. Basel II—The Three Pillars



Pillar II is based on four key principles that emphasize the responsibility of banks for assessing and holding appropriate levels of capital to cover all their material risks beyond Pillar I. Moreover, Pillar II is intended to encourage banks to develop and use better risk management techniques in monitoring and managing their risks. The role of supervisors under Pillar II is (a) to critically evaluate and review banks' assessments and risk management standards, (b) to require (or encourage) banks to hold capital in excess of Pillar I minimum requirements, and (c) to intervene at an early stage if necessary to prevent capital from falling below the levels required to support the risk characteristics of a specific bank. Formally, Pillar II is based on the following four principles (BCBS 2006):

- **Principle 1.** Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels (*the ICAAP*).
- **Principle 2.** Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate action if they are not satisfied with the result of this process (*the SREP*).
- **Principle 3.** Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum (*capital above the minima*).
- **Principle 4.** Supervisors should intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a specific bank and should require rapid remedial action if capital is not maintained or restored (*early intervention and remedial action*).

When the first shocks of the global financial crisis were felt in August 2007, Basel II was in the very early stages of implementation—even though many of the jurisdictions seriously hit by the financial crisis were already considered Basel II compliant. In most countries—especially for internationally active banks, the Basel framework had not even been implemented. Nevertheless, the international financial crisis underscored a number of shortcomings with the global banking system and the regulatory framework, including the following:

- Excessive leverage, with insufficient high-quality, true loss–absorbing capital supporting banks' assets

- Excessive credit growth, driven by a low-interest-rate monetary policy and fueled in part by weak underwriting standards and an underpricing of credit and liquidity risk
- A high degree of systemic risk, interconnectedness among financial institutions, and common exposures to similar shocks
- Inadequate capture of the risks posed by derivatives and hybrid instruments, and insufficient capital dedicated to those risks
- Inadequate capital buffers to mitigate procyclicality of financial markets and to maintain lending to the real economy in times of stress
- Insufficient liquidity buffers and excessive exposure to liquidity risk
- Inadequate measures of market risk, such as assumptions of market liquidity and value at risk limitations. (Ingves 2015)

The Basel III framework seeks to address those weaknesses revealed by the financial crisis. Basel III builds on the Basel II Framework. Although Basel III updates some components of Basel II, it coexists with all of the elements of the Basel II Framework that have not been replaced or updated yet.[4] In particular, the three-pillar structure of the Basel II Framework has not been modified.

Basel III itself is a comprehensive set of reform measures designed to further strengthen the regulation, supervision, and risk management of the global banking sector (table 2). Those measures aim to (a) improve the banking sector's ability to absorb shocks arising from financial and economic stress, (b) improve risk management and governance, and (c) strengthen banks' transparency and disclosures. The reforms target bank-level, or microprudential, regulation, which will help raise the resilience of individual banking institutions in periods of stress. They also address systemwide, or macroprudential, risks that can build up across the banking sector, as well as the procyclical amplification of those risks over time. The macroprudential approach to supervision complements bank-level regulation to create greater resilience at the individual bank level by reducing the risk of systemwide shocks. The second Pillar of the Basel capital framework was strengthened to addresses weaknesses revealed in banks' risk management processes during the financial turmoil, turning Pillar II into a major tool to assist banks and supervisors in better identifying and managing risks and appropriately determining an overall assessment of capital adequacy.

The post-crisis regulatory framework is still being implemented, although the most significant reforms have already been completed by the BCBS. Moreover, BCBS member countries have committed to adopting the Basel III framework, which will go into effect by 2022 (BCBS 2017a).

Common Challenges for Effective Implementation of Pillar II

Pillar II implementation requires a legal and regulatory framework that allows supervisors to require capital beyond the Pillar I regulatory minimum. The assessment of capital under Pillar II by supervisors (SREP) relies on banks' rigorous internal capital assessment processes (ICAAP), which should be well informed and well developed and which not only are compliance based but also require assessment by experts and the exercise of expert judgment.

First, to implement the ICAAP, the legal and regulatory frameworks should not be an obstacle and should provide the right incentives for banks to assess capital needs beyond minimum regulatory requirements. Banks' ICAAP that is binding in practice should assess and determine capital requirements that reflect their own risk characteristics and institutional capacities over and above sole compliance with regulatory minima. Moreover, Pillar II is intended not only to ensure that banks have adequate capital to support all the risks in their business but also to encourage banks to develop and use better risk management techniques in monitoring and managing their risks.

Table 2. Basel III—Key Elements

Name	Background
Pillar I	
Definition of Capital	Revised definition. Greater focus on common equity. Minimum raised to 4.5% of RWA, after deductions. Total loss absorbing capital definitions
Risk Coverage	Securitizations. Strengthened capital treatment. Banks required to analyze externally rated securitization exposures.
	Trading book. Significantly higher market risk capital for trading and derivatives activities and complex securitizations. New framework released in January 2016 (Fundamental Review of the Trading Book).
	Counterparty credit risk. Stringent requirements for measuring exposure; capital incentives to use central counterparties for derivatives; higher capital for interfinancial exposures.
	Bank exposures to central counterparties (CCPs). This standard describes the capital requirements for bank exposures to CCPs. These came into effect on January 1, 2017.
	Equity investment in funds. Enhanced treatment of banks' investments in the equity of funds that are held in the banking book.
Leverage Ratio	Non-risk-based ratio that includes off-balance sheet exposures and serves as a backstop to the risk-based capital requirement. It helps contain system wide buildup of leverage and provides a simple metric for comparability, which is difficult with use of IRB methods
Pillar II	
Supplemental Requirements	Firmwide governance and risk management; off-balance-sheet exposures and securitization; risk concentrations; sound compensation practices; valuation practices; stress testing; accounting standards for financial instruments; supervisory colleges. Interest rate risk in the banking book (IRRBB): updated principles and a new quantitative framework.
Pillar III	
Public Disclosure	Enhanced disclosures requirements: securitization exposures and sponsorship of off-balance-sheet vehicles; components of regulatory capital; detailed explanation on regulatory capital ratios.
Capital Buffers	
Capital Conservation Buffer	Comprising common equity of 2.5% of RWA, bringing the total common equity standard to 7%. Constraint on a bank's discretionary distributions are imposed when banks fall into the buffer range.
Countercyclical Buffer	Imposed within a range of 0-2.5% comprising common equity, when authorities judge credit growth is resulting in an unacceptable buildup of systematic risk.
G-SIBs and D-SIBs	
G- Sibs	Framework for an assessment methodology and higher loss absorbency requirements (Common Equity Tier 1) to discourage banks from becoming even more systemically important.
D-Sib	Principles on the assessment methodology and the higher loss absorbency requirement. Focus on the impact that the distress or failure of banks will have on the domestic economy.
Liquidity	
LCR	Banks should have sufficient high-quality liquid assets to withstand a 30-day stressed funding scenario.
NSFR	Longer-term structural ratio to address liquidity mismatches. Provides incentives for banks to use stable sources of funding.
Principles	*Principles for Sound Liquidity Risk Management and Supervision.* Enhanced with lessons learned during the crisis. Fundamental review of sound practices for managing liquidity risk.
Monitoring Tools	Common set of monitoring metrics to assist supervisors in identifying and analyzing liquidity risk trends at both the bank and system-wide level.

Note: D-SIB = domestic systemically important bank; G-SIB = global systemically important bank; IRB=internal ratings-based; LCR = liquidity coverage ratio; NSFR = net stable funding ratio; RWA = risk-weighted assets.
Source: Adapted from BCBS 2017b and BCBS 2018b.

Second, the supervisory culture should not be so prescriptive or so compliance based that it jeopardizes the exercise of risk-based supervision, which is key to implementing the SREP. The SREP requires supervisors to be able to assess capital beyond compliance with minimum regulatory requirements. Supervisors should be able to challenge banks on their determination of total capital needs. Supervisors should carry out a comprehensive review of the banks' internal capital process. This process includes assessing the quality and effectiveness of risk management frameworks, governance arrangements supporting the ICAAP, and consistency with the business model of the institution.

The supervisory review goes beyond the determination of compliance with formal requirements; expert judgment is needed to analyze the different topics and to recognize the limitations of each one. Some supervisors have used Pillar II to supplement their risk-based supervisory approach. Moreover, a sound regulatory framework that provides clear guidance about risk management, internal controls, and corporate governance underpins the implementation of both the ICAAP and the SREP. To that end, supervisors typically reinforce their regulatory framework by adopting guidelines or regulations that convey their expectations for the management of different risks (credit, operational, market, and so on) and that are based on what is required by the respective international standards.[5]

Third, the legal framework should allow supervisors to require capital above the minimum regulatory requirement. This power is a precondition for Pillar II implementation in full. Supervisors should have this ability, which is based on their supervisory evaluations and which should be informed by banks' internal assessment. Experience shows that this limitation is one of the most serious impediments for the implementation of Pillar II. In countries where the legal framework is too rigid—in the sense that it is linked only to regulatory capital—or where the law sets the required capital, it may be challenging for supervisors to require capital above minima. In many jurisdictions, supervisors have legal powers to require additional capital. As part of the exercise of RBS, they require such additional capital—even though a formal SREP as understood by the second Pillar of the Basel II Framework may not be in place yet.

Finally, supervisors should have a range of tools at their disposal to intervene at an early stage, and they should be able to require rapid remedial action if capital is not maintained or restored. A common restriction arises when supervisors are allowed to intervene only when there is noncompliance with written rules. In that case, the legal framework tends to be backward-looking and does not allow supervisors to intervene before the materialization of risks. Supervisors should have a range of options at their disposal if they become concerned that a bank is not meeting the requirements for sound Pillar II implementation. Such options may include (a) intensifying the bank's monitoring, (b) restricting the payment of dividends, (c) requiring the bank to prepare and implement a satisfactory capital adequacy restoration plan, or (d) requiring the bank to raise additional capital immediately.

Supervisors should have the discretion to use the tools best suited to the situation. The permanent solution to banks' difficulties is not always increased capital alone; it sometimes requires noncapital actions, such as restriction on business operations or mandated improvements in risk management and controls. Moreover, although out of the scope of the survey and of this document, jurisdictions should have adequate frameworks to resolve institutions in an orderly manner, with legislation and tools appropriated to accomplish effective resolution. Jurisdictions should adopt legislation along the lines of international standards (such as the Financial Stability Board standards on resolution [Financial Stability Board 2014] with tools typically aimed at public interest objectives, such as the maintenance of financial stability or the protection of retail depositors.

[5] Such standards include, for example, the Basel Core Principles and the Basel Committee guidelines for the management of each risk.

III. MAIN FINDINGS IN SURVEYED JURISDICTIONS

The Capital Regime

Three surveyed countries are BCBS members and, therefore, have committed to implementing Basel III according to the agreed-on timetable. Two countries have been assessed by the BCBS[6] as fully compliant with the Basel III framework on capital and liquidity, and one has been assessed largely compliant with the Basel III capital framework and compliant with Basel III standards on liquidity. Two jurisdictions adopted the Basel III framework given that they follow the European Directives and rules, and one has also implemented Basel III. Other respondents have adopted selected Basel III components: for instance, two countries adopted the Basel III definition of capital. Moreover, one of them has committed to complete the implementation of Basel IIII capital requirements within an agreed-on timetable, whereas other jurisdictions adopted the revised definition of capital as well as definitions of the capital buffers (capital conservation and countercyclical).

On Pillar I, 9 of the 10 respondents to the survey have implemented one or more of the Basel II approaches. The remaining country implements Basel I for credit risk and a standardized approach for market risk following the Basel I and II standardized approach but has no capital requirement for operational risk.

The simpler approaches to Pillar I are preferred by those surveyed countries using Basel II. Advanced approaches are not allowed in two countries. They are allowed in three other countries, but no bank uses those approaches yet in two of those three countries. In one jurisdiction that allows internal approaches, only one bank (of 31) partially uses the foundation IRB (F-IRB) and the advanced IRB (A-IRB) for some of its credit exposures, and only two banks use the advanced measurement approach (AMA) for operational risk.[7] A similar situation exists in another jurisdiction, where the advanced approaches are allowed, but only one bank uses the internal models approach (IMA) for market risk.

In another surveyed jurisdiction, four banks partially use the A-IRB approach, and seven use the AMA for operational risk. In yet another jurisdiction, two banks use the F-IRB, one uses the A-IRB, and two use the IMA for market risk. One country presents a noteworthy case because the majority of banks (10 of 17) use the F-IRB for credit risk, and two banks use the A-IRB, whereas for market risk, six banks have adopted the IMA and five use the AMA for operational risk. In one country, only the IMA is allowed, but no bank has implemented that approach yet (table 3).

Regarding Pillar II, none of the surveyed jurisdictions identifies the legal framework as a significant restriction to implement this Pillar. This finding seems to be a logical output of how the sample was selected, because the participants are countries already embarking on Pillar II implementation. They may have fewer legal constraints than have those countries that are not yet implementing Pillar II and are not included in this survey. Nine countries that responded to the survey mentioned that the legal framework is neither an impediment to require an ICAAP of banks or to implement Pillar II in general. The remaining jurisdiction is not requiring formal ICAAPs yet, but not because of legal restrictions.

[6] In 2012, the BCBS launched the Regulatory Consistency Assessment Programme (RCAP) to monitor progress in introducing domestic regulations, in assessing their consistency, and in analyzing regulatory outcomes in member jurisdictions. See http://www.bis.org/bcbs/implementation/rcap_jurisdictional.htm.

[7] Going forward, the AMA will no longer be considered an available approach.

Table 3: Basel II, Pillar I—Selected Approaches in Survey Respondents

		Allowed	Used in Practice
Credit Risk	Standardized	9	9
	F-IRB	7	3 (Country 1: partial use by 1 bank; country 2: 10 out of 17 banks; country 3: 2 banks)
	A-IRB	7	4 (Country 1: partial use, 1 bank; country 2: 2 out of 17 banks; country 3:partial use, 4 banks; country 4: 1 bank)
Market Risk	Standardized	10	10
	IMA	6	3 (Country 1: 6 out of 17 banks; country 2: 1 bank; country 3: 2 banks)
Operational Risk	BIA	9	9
	TSA	6	5*
	AMA	6	3

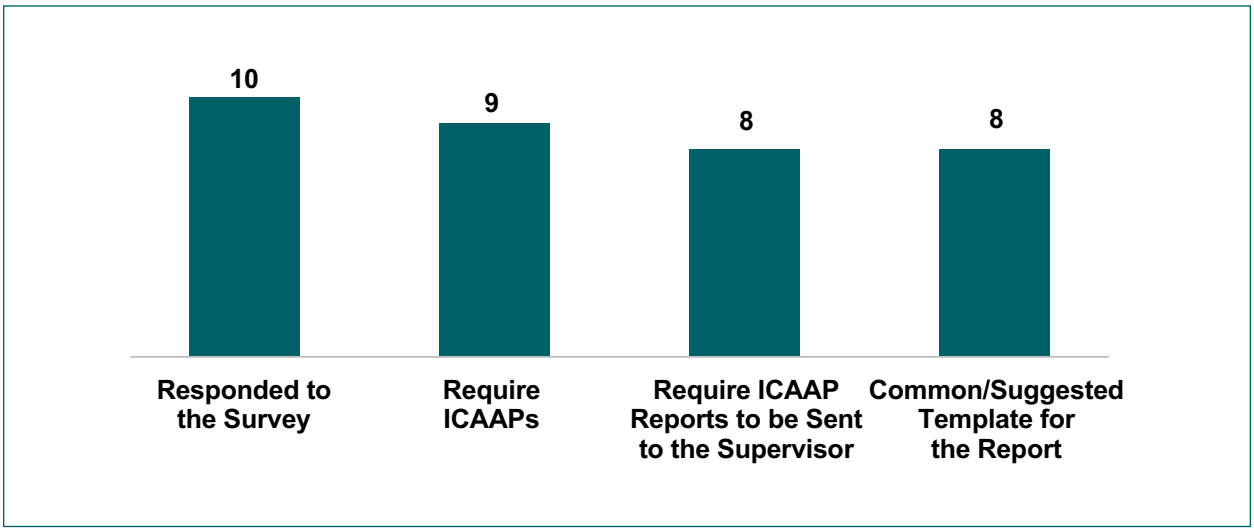
Note: A-IRB = advanced internal ratings-based approach; AMA = advanced measurement approach; BIA = basic indicator approach; IMA = internal models approach; F-IRB = foundation internal ratings-based approach; TSA = standardized approach for operational risk.
*In one jurisdiction, the alternative TSA is used.

The Internal Capital Adequacy Assess Process (ICAAP)

Of the 10 countries that responded to the survey, 9 have already issued guidelines or regulations requiring banks to implement an ICAAP (figure 2). The remaining country has issued a general requirement, but ICAAPs are not required yet in practice.[8] One respondent jurisdiction has issued a regulation requiring banks to develop ICAAPs, but it has been partially implemented, and banks are not required to submit ICAAP reports to the authorities. In some countries, the regulation is specific to ICAAP, whereas in others, the ICAAP is required in the regulation on sound practices for risk management and in the regulation on internal systems together with best practices guidelines. In two jurisdictions, there is a guideline addressing the requirement of both an ICAAP in banks and the SREP for supervisors. One surveyed country follows a particular approach to Pillar II in general and to the ICAAP in particular in which the supervisor requires, by regulation, a standardized capital requirement to cover some of the Pillar II risks. Banks must have capital enough to cover those risks, and they must assess as part of their ICAAP any other material risk not addressed by those supplemental Pillar II charges. Thus, the ICAAP in that country has two main components: a standardized part, which is required by regulation, and an internal part, which is determined by the bank to address additional risks. In three jurisdictions, the first ICAAP reports were submitted as of December 2010. In one country, they have been submitted since December 2011, whereas

[8] It is worth mentioning that in this country, the authorities require credit institutions to comply with a stress-testing framework. From now on in this section, "respondents" refers to countries that require ICAAPs for their institutions.

Figure 2. ICAAP Requirements—Number of Jurisdictions



three countries have required ICAAP reporting since December 2013. One jurisdiction received the first ICAAP reports from banks in 2016. In those eight countries requiring ICAAP reports, the reports must be submitted to the supervisor annually.

Most of the supervisory authorities requiring ICAAP reports developed a template that should be used by the institutions. The contents of the templates vary from country to country. Some of them are very high level (as in one case, in which only the titles for each section are suggested), whereas most templates offer more detailed guidance on the expected contents. Nevertheless, a comparison among them helps identify some commonalities and the sections typically included (table 4).

Table 4. Common Topics of ICAAP Templates in Surveyed Jurisdictions

Summary	General information, scope of application, key components of the ICAAP, summary of stress testing, capital planning.
Risk Governance Framework	Board and senior management responsibilities. Role of committees. Role of internal audit.
Risk Assessment and Internal Capital Requirements	Identification and measurement (or assessment) of significant risks and related capital needs. Relationship with risk profile, risk appetite, and capacity.
Capital Planning and Stress Testing	Needs and sources of capital. Capital plan for current and next years. Description of stress testing.
Aggregation or Consolidation of Risks	Aggregation of internal capital needs for all risks. Guidance on the treatment of diversification effects.
Conclusions	Tables or explanations summarizing total internal capital needs and capital sources.

Source: Based on requested templates from respondent jurisdictions.

The reasons for having common templates are twofold. On one hand, templates help institutions to better organize the information they should provide to supervisors and to know what the supervisor's expectations are. On the other hand, a common template helps supervisors to make a comparison among institutions and to better organize the information they receive. Nevertheless, there should be a balance between standardization and flexibility; institutions should be able to target the template to reflect their specific conditions. The template should not be so rigid as to become just a checklist. In sum, the template should be standardized but flexible enough to reflect that the ICAAP is a bank-driven and a bank-specific process.

Jurisdictions follow different approaches on the level at which ICAAP reports are required when the institution is part of a financial group. The BCBS requires that Basel II be applied on a consolidated basis for internationally active banks (BCBS 2006, Part 1, Scope of Application). The scope of application also includes—on a fully consolidated basis—any holding company that is the parent entity within a banking group to ensure that it captures the risk of the whole banking group. The scope also applies to all internationally active banks at every tier within a banking group on a fully consolidated basis, and supervisors should ensure that individual banks are adequately capitalized on a stand-alone basis.

In three of the surveyed jurisdictions that require ICAAP reports, both consolidated and stand-alone reports are required. Four other jurisdictions require only the consolidated ICAAP. In the latter case, there are some differences: although one of those jurisdictions requires the ICAAP at the highest level of consolidation, the other requires consolidation at the bank level (which is not necessarily the highest level). Jurisdictions that require consolidation at the bank level do so because those banks account for a significant size of the balance sheet of the group. In one respondent jurisdiction, consolidation is applied at two levels: (a) full consolidation, which consists of a financial institution, its parent company, the subsidiaries, and all affiliated companies within the financial business group, and (b) solo consolidation, which consists of a financial institution and its subsidiaries that grant credit or are involved in credit-like transactions, all of which are subject to certain thresholds. In another surveyed country, the ICAAP submission is made at the individual level, and banks are expected to include risks stemming from their subsidiaries as part of their risk management process.

An important topic for supervisors is determining how to deal with ICAAPs of branches and subsidiaries of international banking groups. The ICAAP guidelines should establish clear responsibilities regarding the role of local institutions that are subsidiaries or branches of international banking groups. In some jurisdictions, the requirement comes from the general legal or regulatory framework: therefore, no further instructions are necessary for ICAAP purposes.

Supervisors should expect local banks and their boards (whether a subsidiary or a branch office) to be involved and empowered to discharge their duties in relation to their ICAAP. The assessment of capital adequacy for subsidiaries should not be different from that for local banks, even though subsidiary banks may place greater reliance on parent company global measurement and management tools in a manner appropriate to and consistent with local market characteristics. The local institution should be responsible for the application of global tools and processes at the local level. In the case of branches, experience shows that when this home-host issue is not addressed correctly, the ICAAP is too far removed (at the head office level) from the host reality. This finding is particularly the case of a branch office that is not material from a groupwide perspective but may be material for the host market. To illustrate this topic, box 1 describes the example of two countries not surveyed under this project.

In the case of branches, some of the surveyed countries provide specific instructions. In one respondent jurisdiction, the ICAAP guidance applies also to branches of credit institutions from a third country that is authorized by the host supervisory authority to provide services. In another

Box 1. Cross Border Implementation: The United States and Canada

In the United States, the Pillar II guideline requires that each bank should have an internal capital adequacy assessment process (ICAAP) that is appropriate for its unique risk characteristics and should not rely solely on the assessment of capital adequacy at the parent company level. This approach does not preclude the use of a consolidated ICAAP as an important input to a subsidiary bank's own ICAAP, provided that each entity's board and senior management ensure that the ICAAP is appropriately modified to address the unique structural and operating characteristics and risks of the subsidiary bank.

In Canada, the Office of the Superintendent of Financial Institutions determines that Canadian subsidiaries of foreign banks may borrow from consolidated group methodologies for assessing risk. However, a foreign bank subsidiary's ICAAP should reflect its own circumstances, and groupwide data and methodologies should be appropriately modified to yield internal capital targets and a capital plan that are relevant to the foreign bank subsidiary.

Sources: Office of the Comptroller of the Currency et al. 2008; Office of the Superintendent of Financial Institutions 2010.

jurisdiction, the legal framework requires foreign banks' subsidiaries and branches to develop their own ICAAP for the host market. In yet another surveyed country, affiliates and branches of banks located abroad may use methodologies developed abroad for calculations in their ICAAP, but they should be made subject to local validation, and the documents required regarding those methodologies should be submitted to the host supervisory agency. Under certain conditions, validation abroad may be accepted, and there should be a memorandum of understanding for cooperation between the local and foreign supervisory authorities. The models, processes, and instruments concerning the methodology shall be wholly established in the institution in the host country.

All of the respondents consider that, in practice, proportionality is embedded in ICAAPs and that reports and methodologies vary with the size and complexity of banks. As indicated by most respondents, the smaller and less complex banks are allowed to use simple measurement methodologies. They typically have less complex risk management frameworks and ICAAPs. Seven of nine respondent supervisors do not offer standardized methodologies to measure Pillar II risks individually; their measurement tools are aimed at being used by less complex banks.[9] One of those countries follows a specific approach, allowing small banks to increase the minimum regulatory requirement (Pillar I) by a fixed amount (an add-on) to cover Pillar II risks. Banks following that approach must justify the relevance of such an approach and to what extent it covers all the relevant risks. In one jurisdiction, the supervisor provides specific guidance on the elements that a bank should consider if it is to measure some Pillar II risks, such as concentration, liquidity, and reputational and strategic risk. In another jurisdiction, there is a regulation specifying the methodologies that all institutions (independent of their characteristics) must use to measure some Pillar II risks (concentration, IRRBB, liquidity, business cycle risk), whereas any other material risk should be measured by the institution itself.

Thus, the ICAAP is a mix of a standardized (regulatory) requirement and an internally determined amount. In the case of the other four countries requiring ICAAPs, proportionality is decided and applied by the bank itself and is assessed by supervisors during the SREP. Nevertheless, one of the respondent jurisdictions will implement a simplified Pillar II approach for small institutions in the near term. Another country that responded to the survey is considering whether to include

[9] That is an approach followed, for instance, by the Bank of Spain, which is not an institution surveyed for this exercise.

supervisory benchmarks in the context of capital adequacy assessment to ease comparability. In yet another of the surveyed countries, supervisors are analyzing whether to simplify the questionnaires and documents to be submitted by some cooperative banks to support the ICAAP.

Supervisors should weigh the benefits and drawbacks of providing standardized methodologies for banks to measure risks in the ICAAP. The expected benefits typically are for the smallest or less complex institutions, which may have neither the methodologies nor the tools or resources to measure some Pillar II risks. Supervisors may feel comfortable because they may compare institutions more easily by using those sorts of standardized methodologies for Pillar II. The main drawbacks are that, by doing so, supervisors may inhibit banks' incentives to develop their own methodologies. Moreover, those standardized methodologies may not capture appropriately the risk characteristics of each institution.

One of the key objectives of Pillar II is to encourage banks to develop and use better risk management techniques in monitoring and managing their risks (BCBS 2006, par. 720). The question should, therefore, be to what extent—by providing standardized options to measure risks—may supervisors inhibit banks' incentives to develop their own risk measurement tools? Since the beginning of Pillar II implementation, the supervisory community agreed on the importance of ensuring that ICAAP implementation should remain a bank-driven process, which is leveraged on banks' internal risk management processes as much as possible.

All eight countries requiring ICAAP reports require both quantitative and qualitative information. The ICAAP is a process and, as such, is not just a quantitative measure of capital. The ICAAP includes—besides the quantitative measure of risks—board and senior management oversight (for which sound corporate governance is key) and identification, monitoring, and control of risks. All of those topics are required to be described as part of the reports. In addition, box 2 describes how qualitative and quantitative elements are required in the United States in the context of the ICAAP.

In all respondent jurisdictions, supervisory directives on ICAAP require board and senior management oversight. This oversight entails the requirement that the board approves the ICAAP and that the board and senior management together are responsible for formulating strategic plans and setting risk appetite and risk tolerance. The Basel standards highlight that the board should be responsible for defining the corporate objectives, the risk strategies, and the bank's risk profile, as well as for approving the approach and overseeing the implementation of key policies pertaining to the bank's ICAAP. Consistent with the direction given by the board, senior management should implement business strategies, risk management systems, and risk culture processes and controls for managing the risks to which the bank is exposed and consistent with the board's risk appetite.

All nine jurisdictions requiring ICAAPs indicated that supervisory guidelines underscore the link between capital planning and strategic business plans, risk management processes, and risk profiles. For instance, in one respondent jurisdiction, banks must provide evidence that their internal capital targets are well founded and consistent with their overall risk profile and operating environment. In another of the surveyed countries, an institution may also consider other factors, such as the target external rating, market position, entrance to new markets, capital accessibility, acquisitions of other undertakings, and other strategic goals. Banks should develop a capital plan that is integrated to their strategic plans, risk appetite, and risk tolerance. Banks should have an internal, integrated, and global process to assess the adequacy of internal capital on the basis of their risk profile and a strategy for maintaining their capital levels over time. Box 3 illustrates the capital planning in the European Union (EU).

Most supervisors who responded to the survey typically require that certain specific risks should be assessed as part of banks' ICAAPs.

Box 2. The Use of Quantitative and Qualitative Approaches in the United States

In the United States, the Pillar II guideline requires that—in the internal capital adequacy assessment process (ICAAP)—all measurements of risk should incorporate both quantitative and qualitative elements. Generally, a quantitative approach should form the foundation of a bank's measurement framework. Quantitative approaches that focus on most likely outcomes for the purpose of budgeting, forecasting, or measuring performance may not be fully applicable for assessing capital adequacy, which also should take less likely outcomes into account. In some cases, quantitative tools can include the use of large historical databases. Such databases are most applicable when they (a) are fully reflective of all relevant risk characteristics, (b) incorporate appropriate variability, and (c) have adequate granularity and history, including stressful economic periods or operating environments. When internal data are not available or do not reflect a bank's risk profile, a bank may rely on external data for risk measurements, but it should ensure that external data have applicability to the bank's own activities and risk profile.

In many cases, risk assessments may rely on models that use both qualitative and quantitative inputs. The use of models can enhance the ICAAP, but it can also introduce challenges. Models may fail to work as intended or expected, or they may be used inappropriately for purposes not considered in their initial design. Those concerns apply to models purchased from third-party vendors, as well as to models that are internally developed. A bank should apply appropriate conservatism to compensate for any risks associated with models.

Source: Office of the Comptroller of the Currency et al. 2008.

Besides banks' own assessment of Pillar I risks, the ICAAP should include the following: (a) risks considered under Pillar I that are not fully captured by that Pillar (for example, concentration risk, some securitizations); (b) risks not taken into account by Pillar I (for example, IRRBB, business, strategic, reputational, liquidity risk); (c) factors external to the bank (for example, business cycle effects); and (d) the assessment of compliance with the minimum standards and disclosure requirements of the advanced methods in Pillar I.[10] Table 5 shows that most of the eight respondents require banks to assess all of those risks. In one jurisdiction, some risks are not required to be measured by the institutions themselves in their ICAAPs (concentration, IRRBB, liquidity, and business cycle risk). Rather, the methodology to measure those Pillar II risks is determined by a regulation that applies to all institutions, irrespective of their own characteristics. Only one surveyed supervisor does not specify the risks that should be assessed as part of the ICAAP, expecting those to be decided by the banks. The supervisory guideline requires that the assessment cover all types of risks identified as significant, including the expected level of risk. In addition, box 4 describes the requirements in the Pillar II guideline in the United States (jurisdiction not surveyed in this project).

Some supervisors require banks to assess certain specific risks that are relevant to their financial systems. Thus, in one surveyed country, banks are required to assess currency-induced credit risk (table 5). That may be a material risk for some banks when they lend money to clients in a foreign currency but when their repayment capacity is in local currency (which induces currency mismatches in clients' balance sheets). In this country, banks should also assess the risk of excessive leverage as part of their ICAAP. In another respondent jurisdiction, supervisors identified that some risks have become significant, such as technological risks and cybercrime, and banks are required to assess those risks in their ICAAPs. In yet another of the surveyed countries, all institutions must build a countercyclical capital buffer, which is considered a component of the Pillar II capital requirement. In this country, the Pillar II capital is partially determined by a regulation covering some of those risks.

[10] As required by the Basel II Framework (BCBS 2006, par. 724).

Box 3. European Union: Capital Planning and the ICAAP

The European guidelines document requires that institutions should have an explicit, approved capital plan that states the bank's objectives and the time horizon for achieving those objectives, plus—in broad terms—the capital planning process and the responsibilities for that process. The plan should lay out how the institution will comply with capital requirements in the future, what are any relevant limits related to capital, and what a general contingency plan is for dealing with divergences and unexpected events (for example, raising additional capital, restricting business, or using risk mitigation techniques).

The institution's management body is responsible for integrating capital planning and capital management into the institution's overall risk management culture and approach. That body should ensure that capital planning and management policies and procedures are communicated and implemented institutionwide and are supported by sufficient authority and resources.

Institutions should provide information about capital planning to their authorities. Information should refer to the methodology and policy documentation on capital planning, along with (a) a description of the general setup of capital planning, including dimensions considered (for example, internal, regulatory, time horizon, capital instruments, and capital measures) and (b) a description of the main assumptions underlying the capital planning. Institutions are also required to provide information about the following: (a) a forward-looking view about the development of risks and capital in terms of both internal capital and regulatory own funds and (b) a description of the current conclusions from capital planning such as planned issuances of various capital instruments, other capital measures (e.g. dividend policy), and planned changes to the balance sheet (for example, sales of portfolios).

Source: EBA 2014.

Box 4. Comprehensive Assessment of Risk for ICAAP Purposes in the United States

In the United States, the Pillar II guidelines describe some risks that should be considered by institutions in their internal capital adequacy assessment processes (ICAAPs), including credit risk, market risk, operational risk, interest rate risk in the banking book, and liquidity risk. The guideline highlight that other risks, such as reputational risk, business or strategic risk, and country risk may also be material for a bank and, in such cases, should be given equal consideration to the more formally defined risk types. Additionally, if a bank uses risk mitigation techniques, it should understand the risk to be mitigated and the potential effects of that mitigation (including enforceability and effectiveness). Moreover, a well-developed ICAAP should include an assessment of all relevant factors that present a material source of risk to capital, and it should account for concentrations within each risk type.

A bank should assess whether its capital is sufficient to absorb any losses that may arise from activities that expose the bank to multiple risks within and across business lines or that create concentrations across risk types. Additionally, the ICAAP should focus on any complex activities that give rise to multiple risks and to their interaction. The ICAAP should include an assessment of the potential effects of convergence of risks within and across business lines and their combined effect on capital adequacy.

The ICAAP should consider the link between capital adequacy and damage or potential damage to a bank's reputation. The bank's ICAAP should also assess risks associated with new products, markets and activities, and challenges presented by new business lines or strategic acquisitions according to their effect on capital adequacy.

Source: Office of the Comptroller of the Currency et al. 2008.

Directives in some countries explicitly require banks to describe whether they follow a quantitative or qualitative treatment of risks in the ICAAP. This is the case in two surveyed jurisdictions. In addition, in one of the jurisdictions, banks must rate the significance of each risk; they must also explain what risks are not significant and the rationale for making that determination. Moreover, banks should explain for each one of the Pillar I risks whether in their ICAAPs they use the same approach as described in Pillar I, or if they measure credit, operational, and market risk using other methodologies. Banks should explain the effects of stress-testing exercises on the amount of capital required internally for each one of those risks. The process is considered adequate (a) if it captures appropriately significant risks, (b) if it ensures an internal capital level adequate for the risk profile of the institution, and (c) if it is adequately incorporated into the governance arrangements of the institution.

After banks estimate their internal capital needs for each risk, one of the most challenging aspects relates to risk aggregation. Because of the challenges presented by risk aggregation, banks should be expected to apply conservative assumptions in their modeling to reflect data and to model uncertainties. Banks should have clear policies and procedures supporting the aggregation across risk types and should apply conservative assumptions on risk aggregation and diversification. Practices and techniques in risk aggregation are generally less sophisticated than are the methodologies used in measuring individual risk components. They rely on ad hoc solutions and judgment without always being theoretically consistent with the measurement of the components. Diversification benefits embedded in inter-risk aggregation processes often are based on expert judgment or average industry benchmarks.

Surveyed countries follow several approaches on diversification effects. Given all the challenges presented by risk aggregation, supervisors usually adopt a conservative approach. In one respondent jurisdiction, the regulation requires that total internal capital be determined by simply adding the capital

Table 5. ICAAP—Minimum Risks Required to Be Addressed by Supervisors

Risk Type	Jurisdictions Requiring/ Total*
Credit	9/9
Market	9/9
Operational	9/9
Concentration	8/9
IRRBB	8/9
Securitization	6/9
Business	6/9
Strategic	7/9
Reputational	7/9
Liquidity	7/9
External Factors	7/9
Other Risks	
Currency induced credit risk	1/9
Excessive leverage	1/9
Compliance with minimum standards and disclosure requirements	1/9
Compliance with accounting standards and regulatory framework	1/9
IT and cyber security risk	1/9
Business cycle risk	1/9
Profile of historical average credit default losses	1/9
Any other risk material to the bank	9/9

Note: IRRBB = interest rate risk in the banking book; IT = information technology
* Total respondents that require ICAAP.

determined to cover each risk. Therefore, no inter-risk diversification effects are recognized. In other country, there are two options: (a) banks may add the Pillar I requirement plus any other significant risk (Pillar II), with no diversification effects recognized; or (b) institutions may use complex approaches to measure total internal capital requirements. In the latter case, they should document and explain the assumptions and should establish whether the assumptions are valid under stressed scenarios.

In two of the respondent jurisdictions, banks are required to explain how internal capital is determined. In both cases, banks should include the quantification of internal capital for each risk and total internal capital, as well as methods for allocating internal capital. In another of the respondent jurisdictions, risk types should be consolidated considering correlation and diversification effects on the condition that they are calculated by the bank to be conservative. The methodology used in correlation and diversification effects should be presented to supervisors.

In one of the jurisdictions that responded to the survey, two approaches are allowed: (a) banks that estimate Pillar II capital on a risk-by-risk basis must use the simple summation of the capital charges that are estimated to cover each one of those risks; and (b) banks using comprehensive models (economic capital or similar) are allowed to estimate inter-risk correlations, with reasonable caution. In another of the countries that responded to the survey, there are no specific instructions on how to aggregate risks; therefore, diversification effects are, in principle, allowed, and assumptions are reviewed during the SREP. In one jurisdiction, if a bank intends to use risk diversification benefits, it must obtain approval from the supervisor. In yet another of the surveyed countries, banks are allowed to recognize inter-risk diversification effects when measuring total internal capital needs in the ICAAP. Box 5 summarizes the treatment of diversification effects in Canada.

Most jurisdictions require some level of internal review for the ICAAP, the outcomes, and the reports. Seven of nine respondents require the ICAAP to be reviewed by the internal audit, and only two of those countries specify that the review should be done at least annually. In one jurisdiction, the internal audit is required to review compliance with regulatory capital requirements, but it does not review the whole ICAAP. The international standards highlight that an effective and efficient internal audit function constitutes the third line of defense in the system of internal control. It should provide an independent assurance to the board of directors and senior management on the quality and effectiveness of a bank's internal control, risk management, and governance systems and processes (BCBS 2015).

In practice, one of the most important challenges is whether the internal audit has appropriate skills, knowledge, and resources to conduct an effective

Box 5. OSFI: Recognition of Diversification Effects in the ICAAP

In Canada, the Office of the Superintendent of Financial Institutions (OSFI) Guidelines document determines that minimum (Pillar I) capital requirements are regulatory minimums that assume an institution has a portfolio of risk exposures that is highly granular and widely diversified. Because minimum regulatory capital requirements contain restrictive or simplifying assumptions, an institution should not rely only on compliance with regulatory minimums when conducting its own assessment of the adequacy of its capital.

The guidelines underscore that institutions should exercise caution when including risk diversification benefits in their ICAAP. Assumptions on diversification are often based on expert judgment and are difficult to validate. Institutions should be conservative in their assessment of diversification benefits, in particular between different classes of risk, and those institutions should consider whether such benefits exist under stressed conditions.

Source: Office of the Superintendent of Financial Institutions 2010.

review of banks' ICAAPs. Moreover, in two jurisdictions, the ICAAP may be subject to review by external audits if considered necessary by the bank, whereas in another country, the review by external auditors is mandatory. In one jurisdiction, the review may be done by the internal audit or by an internal unit that is independent from those responsible for capital adequacy assessment (table 6). In three countries, models and methodologies used within the scope of the ICAAP may be validated not only by an independent internal team but also by third parties or even the parent bank, subject to some conditions.

Institutions engage in capital planning as part of their ICAAP. Capital adequacy may vary over time with economic, financial, or credit cycles, and banks must plan for this variance. As a result of capital planning, a bank may choose to hold more capital to cover potential variations, or it may have contingency plans to adjust capital or risk in response to changes in the cycle. Banks typically set capital targets. In doing so, institutions typically consider their risk appetite, the regulatory capital requirements, and their internal assessments of capital needs, including those arising from the institution's business plans, strategy, and stress tests.

Notwithstanding that most respondents require banks to develop a capital plan, the degree of detail varies among jurisdictions. In some cases, submission to the authority is not required yet. Four jurisdictions provide more specific guidance on what is expected by the supervisor on capital planning as part of the ICAAP. For instance, in one of those countries, the capital plan must consider stress test outcomes and must be aligned to future business plans and strategic objectives, and it should explain the sources of available capital. In another jurisdiction, in addition to those requirements, the capital plan should explain how the bank will comply with capital adequacy ratios—with any relevant limits related to its own fund—and a general contingency plan for dealing with divergences and unexpected events.

Table 6. Independent Review Required by Supervisors

Unit Responsible for the Review	Jurisdictions Requiring/Total Respondents*
Internal Audit	7/9
External Audit	3/9
Bank's Internal Unit	1/9

*Total respondents that require ICAAPs (9 jurisdictions).

In one country, the directives require banks to develop a capital plan, but it is not submitted to the authorities (nor is the ICAAP). The required time horizon for the capital plan ranges from only the current year (in one of the surveyed jurisdictions) to a minimum of two years (in two jurisdictions) to three years (in four jurisdictions). In one country, the regulation does not specify any time horizon. In another country, banks are required to have a capital management process in place to ensure that the level of its own funds is adequate to cover long-term capital goals, emergency plans, and internal capital needs as assessed by the bank.

Supervisors use several tools to determine that the capital process is integrated with day-to-day operations. Eight of nine respondents implement some sort of use test when reviewing their supervised institutions, both during the on-site visits and with off-site information. Consistent with the use test, some supervisors assess whether a single ICAAP is used for internal and regulatory purposes. In one jurisdiction, supervisors also assess whether model inputs (such as the probability of default [PD], scorings, and ratings) are used in the bank's business management and not just for Pillar II capital purposes. They also assess whether the information sources used for the ICAAP are integrated into the bank's systems. In another country, this issue is evaluated during on-site examinations, and findings are factored into rating and risk assessment methodology. In two countries, the regulation requires that the ICAAP be an integral part of the banks' management process and decision-making culture. In one country, full supervisory review of this topic is not in practice yet.

Eight of nine jurisdictions that require ICAAPs also require banks to perform stress tests for ICAAP purposes. Those exercises must be integrated into risk governance and capital planning. In two of the respondent jurisdictions, stress-testing outputs must be considered by banks when assessing ICAAP capital needs and when setting capital plans. Two countries require that banks take stress-testing results obtained into account when assessing and maintaining an adequate level of internal capital. In one jurisdiction, banks are required to use the results of stress tests for capital planning purposes—primarily the results of the stress test providing the worst results. In another country, banks have to integrate stress-testing outcomes to determine their internal target capital ratio, which should be sufficient to cover a deep economic recession. In only one country, regulations recommend that banks should incorporate stress-testing results into capital planning, but there is no formal obligation to do so.

A few supervisors provide common scenarios that must be used for stress testing in the context of the ICAAP. This is the case of one of the respondent jurisdictions, where, each year, the supervisory authorities provide up to three scenarios for ICAAP purposes. Some of the benefits deriving from that are to enhance comparability among institutions and to prevent banks from being too optimistic about the scenarios. The drawback is that by definition, supervisory scenarios are not bank specific; therefore, they may not capture accurately the specificities that may be relevant to some banks but not to others.[11]

In one jurisdiction, the supervisor provides scenarios for bottom-up exercises (supervisory stress testing), and the banks use those exercises during the SREP as a benchmark for banks' internal exercises. In another of the respondent countries, banks must use their own scenarios for stress testing in the ICAAP. The supervisory authority runs its own supervisory (top-down) exercise, and the outputs are used when assessing banks' capital adequacy. In one country, banks must use their own scenarios for ICAAP purposes. Those exercises are supplemented by annual supervisory stress test, in which the supervisory authority prescribes a common scenario that should be run by banks (bottom-up approach). This supervisory exercise is done for financial stability purposes. In yet another of the surveyed countries, the supervisor requires that some elements (such as a significant decline in economic activity, high volatility in key financial prices, and so forth) must be considered by banks when they run the stress tests for ICAAP purposes, but the scenarios considering those elements must be developed by the institutions themselves.

The Supervisory Review and Evaluation Process (SREP)

Risk Assessment

As part of Pillar II, supervisors are expected to regularly review the process whereby a bank assesses its capital adequacy, risk position, resulting capital levels, and quality of capital held (BCBS 2006, The Second Pillar, par. 746). Supervisors should also evaluate to what extent a bank has a sound internal process in place to assess capital adequacy. Moreover, the supervisory evaluation of capital adequacy is a key component of a risk-based supervision system. Basel II highlights the need to implement a formal and well-developed system to assess banks' capital adequacy, using banks' own internal assessment process (the ICAAP) as input to that evaluation.

Of the 10 jurisdictions that responded to the survey, 2 have no process in place for ICAAP review. That lack is because one of the jurisdictions does not require ICAAPs to be submitted by the supervised

[11] For instance, for a bank with operations concentrated in a certain geographic region, the GDP growth for that region may be a significant variable for the macro scenario, whereas it may not be relevant at all to institutions operating in that region.

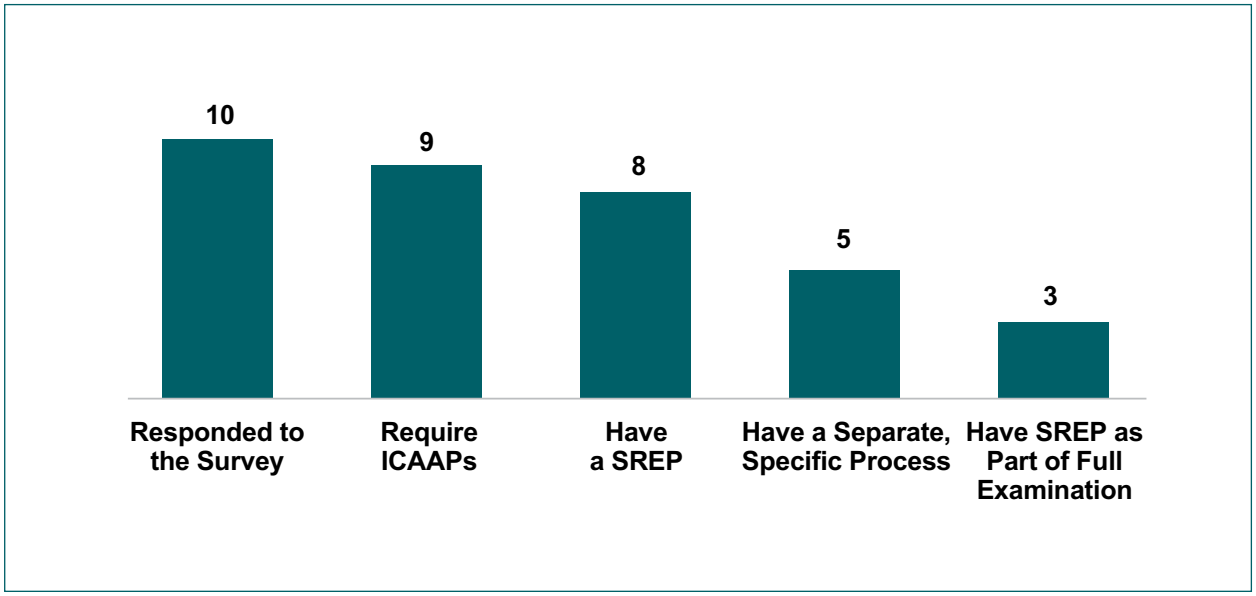
institutions, whereas in the other jurisdiction, the requirement exists but is only partially implemented. Banks are not required to submit ICAAP reports to the authorities. Nevertheless, supervisors in those two countries review capital adequacy as part of their regular supervisory process. For instance, in one country, supervisory guidance to assess capital goes beyond assessing compliance with minimum regulatory capital, and supervisors assess whether banks have set internal capital goals according to their risk profile.

Five of the eight countries that require ICAAPs and ICAAP reports have developed specific processes and guidelines for the SREP. In the other three jurisdictions, the SREP is conducted as part of the regular examinations (figure 3). In two countries, the supervisory authority has developed an internal document for the SREP, with the procedures and methodologies that must be followed by supervisors when reviewing the ICAAPs. That methodology is not disclosed to the industry. In another jurisdiction, the supervisor has also developed an internal methodology for the SREP, which is not disclosed to the public. Nevertheless, it is aligned with the European guidelines, which are disclosed to the public by the European Banking Authority (EBA 2014).

In another country, the authority has issued very short, high-level guidelines with a general description of the SREP. Three jurisdictions in the sample have not developed a separate, specific SREP for Pillar II purposes. In one of those three countries, the on-site review of the ICAAP is conducted within the regular, full-scope examinations. ICAAP findings are factored into the general risk assessment and the capital adequacy assessment of the bank. In another of the countries in this group, the jurisdiction follows the European guidelines, and the ICAAP evaluation is integrated into the overall supervisory review and evaluation process. The supervisor does not have separate procedure or methodology concerning ICAAP evaluation, but the ICAAP evaluation is part of the overall capital assessment in the regular supervisory process. Finally, in the third country in this group, supervisors review and evaluate ICAAPs as part of their ongoing supervision, which includes on-site examination, off-site monitoring, and ongoing communication with the bank.

The SREP has also adopted some specific characteristics depending on the country. In one jurisdiction, a process for gathering information has been developed to analyze outlier institutions, and a specialized working group that provides support

Figure 3. The SREP—Number of Jurisdictions



to supervisors on Pillar II issues was created within the supervision department. There is an ongoing training program for supervisors on various risk-related topics. The risk-based supervisory approach remains the same as that before the introduction of Pillar II. In another jurisdiction, the analysis of ICAAP reports encompasses the appropriateness of that process, including risk management practices, and the internal capital. In another of the countries, during the SREP, supervisors review the adequacy of risk governance, the risk management control function, the compliance with minimum requirements under Basel II, and the banks' risk appetite statement. In one jurisdiction, in the first stages of ICAAP implementation, there was a unit within the supervisory authority responsible for overseeing ICAAPs, for providing consultation, and for developing guidelines for supervisors. Currently, the task of evaluating a bank's ICAAP submission has been assigned to the team responsible for conducting ongoing supervision of that bank. The rationale behind this assignment is that the supervisor of a particular bank has more specific information about a bank and therefore is better positioned to evaluate its ICAAP.

Some specific topics are typically included in the supervisory manual or guidelines for the SREP. The specific methodology for the SREP developed by four countries describes the roles and responsibilities of supervisory staff members who are involved in reviewing ICAAPs, and it details the specific steps in evaluating the ICAAPs. The methodologies also describe the procedures for documenting and recording the findings and recommendations from the ICAAP review, as well as the procedures for communicating the outcomes of the review to banks.

Most of those jurisdictions implementing an SREP do not assign a specific rating to supervised institutions on the basis of that process. Five of eight supervisors that have an SREP in place do not assign ratings on the basis of that assessment. In one of the countries in this group, there is one rating (CAMELS type)[12] that is the outcome of the regular supervisory process, and the SREP feeds the overall rating assigned to the bank. In another jurisdiction, there is a similar treatment: supervisors do not assign a separate rating to the ICAAP, but ICAAP review findings are factored into the general risk assessment and into the capital adequacy evaluation of the bank. In one country in the sample, there is a rating for the SREP, and it follows the European guidelines (EBA 2014).

A similar situation exists in another of the jurisdictions, where the SREP follows the European guidelines, with some adjustments to consider characteristics of the local market. Moreover, in this country, there is a separate, seven-grade scale used for ICAAP assessment, which is part of a capital adequacy score. This score is not included in the overall SREP score algorithm and is assigned based on expert judgment. In yet another of the respondent countries, there is not a separate rating for bank's ICAAP, but the evaluation of ICAAPs is used in determining a composite rating of a bank. In another country, there is a similar treatment: there is not a specific rating for the ICAAP, but the results of the ICAAP review feed qualitatively into the overall assessment and rating of the bank. The inclusion of ICAAP results into the overall supervisory rating is foreseen in the near future. Box 6 presents the example of the use of a scoring system for the SREP in the EU.

Proportionality is a key characteristic of the SREP, and eight surveyed jurisdictions implementing an SREP (whether specific or as part of the general supervisory process) follow a proportional approach. Jurisdictions follow several approaches to implement proportionality during the SREP. In four jurisdictions, the supervisory authority has established a formal categorization for financial institutions. In one of those countries, there are four categories based on the systemic importance, size, and business model of an institution. Institutions

[12] The CAMELS rating system produces a composite rating of an institution's overall condition and performance by assessing six components: capital adequacy, asset quality, management administration, earnings, liquidity, and sensitivity to market risk.

are assigned to one of four buckets based on those parameters, and the category to which they belong applies for the entire SREP process. In two others within this subgroup, there are four categories based on size and business type. In the fourth country that belongs to this subgroup, institutions are classified based on size, systemic importance, and origin of capital (whether local or foreign).

In another two countries, proportionality is applied on a case-by-case basis, even though in one of those jurisdictions, a simplified ICAAP for small institutions will be implemented to enhance a proportional approach during the SREP. In two countries, the supervisor has already identified domestic systemically important banks (D-SIB), following the BCBS methodology for G-SIB (the indicator-based approach [BCBS 2012] based on size, complexity, interconnectedness, and substitutability). In another of the surveyed countries, a similar approach, based on the BCBS methodology, was designed to provide a categorization of financial institutions, as well as to determine the intensity of supervision.

Supervisors conduct the ICAAP review combining the use of several tools and inputs from different sources. The eight countries implementing an SREP use the on-site and off-site reviews, and their assessment is fed by discussions with the bank and with other stakeholders. It is worth mentioning that although in the eight surveyed jurisdictions the ICAAP is discussed with banks' management, in only four countries do supervisors discuss with the banks' boards as well. In one country, supervisors discuss their findings with banks' risk committees,

Box 6. European Union: Scoring in the SREP

The European guidelines for the supervisory review and evaluation process (SREP) determine that authorities should score the institution's business model and strategy, internal governance and institutionwide controls, individual risks to capital, capital adequacy, individual risks to liquidity and funding, liquidity adequacy, and overall SREP assessment.

In the assessment of the individual SREP elements, authorities should use a range of 1 (no discernible risk) to 4 (high risk), thus reflecting the "supervisory view" of the risk based on the relevant scoring tables in each element-specific title. Authorities should use the accompanying considerations provided in those tables for guidance to support supervisory judgment (that is, it is not necessary for the institution to fulfill all the considerations linked to a score of 1 to actually achieve a score of 1) or to further develop them or add additional considerations. Authorities should assign a score of 4 to reflect the worst possible assessment (that is, even if the institution's position is worse than that envisaged by the considerations for a score of 4, a score of 4 should still be assigned).

Authorities should ensure that through the scoring of individual risks they provide an indication of the potential prudential effect of the risk to the institution after considering the quality of risk controls to mitigate this impact.

Authorities should ensure that the scoring of the overall SREP assessment achieves the following objectives: (a) it provides an indication of the institution's overall viability; (b) it indicates the likelihood that early intervention measures should be taken, and it can act as a trigger for them; and (c) it determines, through the assessment of the overall viability of the institution, whether that institution is failing or is likely to fail.

The overall SREP score is on a scale of 1 to 4 and reflects the overall viability of the institution. When the outcome of the overall SREP assessment suggests that an institution can be considered to be "failing or likely to fail," authorities should apply a score of F and should follow the process of engaging with resolution authorities.

Source: EBA 2014.

which include members of the board of directors. In most of the jurisdictions, the supervisory work is fed by the work of banks' internal audit, whereas in only one is the work of the external audit used in addition to the supervisory review, as a commentary tool when revising the banks' ICAAPs.

Peer group comparisons and thematic reviews are used in most countries. It is worth mentioning that regular supervisory interaction with the different levels of the institutions is key to an effective risk governance framework. The BCBS standards on corporate governance emphasize the importance of regular supervisors' interaction not only with senior management but also with the board of directors, individual board members, and those responsible for risk management, compliance, and internal audit functions (BCBS 2015). Such interactions encourage each level of the institution to be accountable for its respective roles. They support timely and open dialogue on a range of issues, including bank's strategies, business models and risks, effectiveness of corporate governance at the bank, bank's culture, and findings or expectations that supervisors believe should be particularly important to board members. All those elements are of utmost importance to the SREP (see table 7).

The SREP is conducted annually in the eight jurisdictions implementing that procedure, but that frequency does not necessarily match the average length of the supervisory cycle. In the eight jurisdictions implementing SREP, banks' ICAAPs are reviewed annually, but in only five jurisdictions is that frequency the same as the average length of the supervisory cycle. In one jurisdiction, the average frequency of the supervisory cycle is semiannual, whereas in another it is every two years, but if material findings are identified during the SREP, the bank's rating could be reviewed by carrying out the regular supervisory process in advance. In another country, the ICAAP review for cooperative banks with the highest supervisory ratings is done every three years. However, all cooperative banks annually submit reports describing the state of their ICAAP.

Table 7. SREP—Characteristics

	Jurisdictions Requiring/Total Respondents*
A supervisory rating is an outcome of the SREP	3/8
Supervisory categorization of financial institutions	4/8
Annual SREP	8/8

*Total refers to the eight jurisdictions that have a SREP.

In addition to requiring ICAAP reports, supervisors request banks to submit additional documentation to support their ICAAPs. All respondent jurisdictions request that banks submit their business model and business strategy, the risk governance and management framework, their risk appetite, the bank's stress-testing framework, the risk data, any aggregation methodologies, the information technology systems, and the internal audit reports covering ICAAP.

Most of the surveyed supervisors do not use strict quantitative indicators or benchmarks to evaluate capital for each risk category. In one country, the adequacy of the bank's assessment is judged by (a) the qualitative methods that are based on peer group and sectoral comparisons, (b) the trend of capital allocation for each type of risk, and (c) the realized losses for risk, if available. In another jurisdiction, the assessment of a bank´s capital adequacy is part of a more comprehensive assessment of risks (holistic approach) that includes—among other tools—supervisors' methodologies to challenge banks' calculations and the review of banks' models and parameters. In one country, the supervisor uses supervisory benchmarks for challenging internal capital requirements for IRRBB, credit concentration risk, and currency-induced lending risk. In another country, the risk stemming from foreign exchange mortgages to unhedged borrowers has been addressed by a capital add-on determined by the supervisor. In yet another of the respondent jurisdictions, the supervisor has a list of indicators that must be considered by supervisors when assessing Pillar

II risks, particularly for concentration, liquidity, strategic, business, and reputational risk. Finally, one surveyed jurisdiction requires all banks to measure some Pillar II risks (concentration, IRRBB, liquidity, and business cycle risk) while using methodologies determined by a regulation.

The supervisor usually considers how external factors may affect banks' internal capital assessments. Seven of the supervisors implementing a formal SREP consider external factors such as business cycle effects and macroprudential parameters as part of the ICAAP evaluation. In one of those countries, banks' ICAAPs must consider external factors such as economic cycle effects and the current economic situation. Moreover, models used by banks for credit risk under the ICAAP should use through-the-cycle PDs. Supervisory stress test outcomes are considered during the SREP and are based on top-down exercises done by the supervisory authority.

In another jurisdiction, the macroeconomic environment is taken into account in the supervisory stress test that is used as a benchmark for banks' own exercises. In one of the jurisdictions responding to the survey, supervisors assess some macroeconomic variables (commodity prices, foreign exchange rate, inflation rate, and interest rates) to determine the plausibility of stress test assumptions used by banks. In another jurisdiction, the supervisory authority determines the scenarios that banks must use for ICAAP purposes. For determining those scenarios, the authority considers the recent macroeconomic development and expectations. In another jurisdiction, supervisors consider the macroeconomic environment when assessing banks' assumptions used in their stress tests. In yet another country, supervisors assess banks' business plans and banks' performance while considering the macroeconomic environment and the external environment, which might negatively affect banks' revenues, capital, and viability. Finally, in one of the respondents to the survey, as part of the regular risk-based supervisory process, credit institutions are required to assess their resilience with respect to hypothetical adverse macroeconomic conditions. With that aim, the supervisory authority provides two main scenarios (baseline and adverse).

Banks are required to assess constraints in raising capital during periods of stress as part of their capital plans. Six of the seven jurisdictions that require capital plans have such a requirement in place. In one of those jurisdictions, such constraints must be part of the stress-testing assumptions used by banks, and the results of their stress tests must be considered when developing the contingency plans. In another jurisdiction, if the capital plan is assessed as unreliable by supervisors, the jurisdiction requires banks to resubmit the capital plan. Banks are required to assess constraints in raising capital during periods of stress within the recovery-planning process. In another of those countries, supervisors evaluate whether the outcomes of capital planning under the baseline and stressed scenarios are consistent with macroeconomic and external events. In one of the jurisdictions in this group, the capital plan must consider a range of situations, such as how the bank will be affected in an economic crisis, what a regression in the bank's activities might be, what stress testing is used, and how the bank will maintain its activities and its capital without breaching the minimum capital adequacy ratio. Finally, in the remaining jurisdiction in the group, banks are required to provide a capital plan under both normal and stress conditions, in accordance with their future business plan and with the risk tolerance approved by the board of directors.

All respondent supervisors that have an SREP will communicate the results to the banks, but not all of them will communicate such information directly to the banks' board, notwithstanding recommendations by the international standards.[13] In two of seven countries implementing an SREP, supervisors communicate the outcomes of the SREP only to the banks' chief executive officer (CEO). In another country, the outcomes are also communicated to the board of directors; in

[13] See BCBS 2015, Principle 13: The Role of Supervisors.

another, results are also communicated to the risk committee. In one respondent country, besides the CEO and the board of the institution, the outcomes of the ICAAP review are communicated to the board risk committee. In two of the jurisdictions, supervisors communicate such information to bank boards and to the home supervisors of foreign banks, and in another country, besides communication to bank boards, the assessment is communicated to external auditors and to the Bank Guarantee Fund. As mentioned, supervisory interaction with several levels of the institutions (the board; senior management; and those responsible for risk management, compliance, and internal audit) is key to support a sound risk governance framework (BCBS 2015).

Drawing on the SREP, supervisors provide feedback to banks focused on the areas with the most significant weaknesses. For instance, in one jurisdiction, on the basis of the SREP, the supervisor determines recommendations or comments appropriate to the bank´s risk profile. They can be associated with qualitative and quantitative topics, such as the risk management process, the determination of risk appetite, the quality of risk data, the model assumptions that are not well supported, the methodology to capture risks relevant to the bank´s risk profile, and the validation procedures. In another country, main deficiencies are related to the internal models used for Pillar II purposes and stress-testing assumptions. In one of the respondent jurisdictions, because the SREP is embedded in the regular

Box 7. European Union: Supervisory Engagement and Proportionality in the SREP

Authorities should apply the principle of proportionality in the scope, frequency, and intensity of supervisory engagement and dialogue with an institution, and supervisory expectations of the standards the institution should meet in accordance with the category of the institution. For the frequency and intensity of the supervisory engagement aspect of proportionality and when planning supervisory review and evaluation process (SREP) activities, competent authorities should adhere to a minimum level of engagement model.

Institutions are classified into four categories. The categorization reflects the assessment of systemic risk posed by institutions to the financial system. Authorities should use it as a basis for applying the principle of proportionality and not as a means to reflect the quality of an institution.

Institutions in Category 1 are G-SIBs (global systemically important banks) and other systemically important institutions. Those in Category 2 are medium to large institutions that operate domestically or with sizable cross-border activities. Category 3 refers to small to medium institutions that do not qualify for Category 1 or 2, that operate domestically or with nonsignificant cross-border operations, and that operate in a limited number of business lines. Category 4 includes all other small noncomplex domestic institutions that do not fall into the previous categories.

For all groups of institutions, the authorities should monitor some key indicators on a quarterly basis. The frequency of the assessment of all SREP elements varies depending on the group to which the institutions belong: from annual (Category 1), to every two years (Category 2), and to every three years (Categories 3 and 4). The frequency of the minimum level of engagement and dialogue with the institution is also based on the categorization. For instance, for institutions in Category 1, authorities are expected to implement an ongoing engagement with institution's management body and senior management. For institutions in Category 4, the engagement with institution's management body and senior management should be at least every 3 years.

Source: EBA 2014.

supervisory process, supervisors do not provide individual feedback regarding ICAAP evaluations; however, the supervision authority is working on a thorough framework for ICAAP reviews. In another jurisdiction, most of the feedbacks identified from ICAAP reviews are related to the assumptions used for capital planning purposes, methodologies to evaluate risks, and stress-testing methodologies and assumptions. Box 7 summarizes the model of supervisory engagement and dialogue used in the EU.

None of the eight respondent supervisors require banks to disclose their Pillar II capital. Disclosure requirements under Pillar III typically refer to transparency of Pillar I capital calculations but not to Pillar II internal figures. One country in the sample requires banks to disclose a summary of the institution's approach to assessing the adequacy of its internal capital to support current and future activities but doesn't require them to disclose quantitative capital needs. This requirement is in line with the European Pillar III regulatory framework. In two countries, banks are required to disclose their Basel III capital buffers.

Regarding the near future, many of the surveyed jurisdictions are expected to be involved with Basel III implementation. The analysis of the responses to the survey shows that five jurisdictions have already implemented Basel III, and most of them are not planning significant changes with respect to Pillar II in the short- or mid-term. Two jurisdictions mentioned that they plan to adopt the new Basel Committee methodology to measure IRRBB, as a requirement under Pillar II. One country is also proposing to issue guidelines on concentration and reputational risk, business model analysis, and stress testing. The other jurisdictions that responded to the survey did not provide detailed answers regarding changes to Pillar II arising from the adoption of Basel III.

Some jurisdictions plan to update supervisory guidelines to the assessment of liquidity by banks. In one surveyed jurisdiction, the SREP methodology has been adjusted to the European guidelines on the internal liquidity adequacy assessment process (ILAAP) (EBA 2016), with some adjustments resulting from size and complexity of the activity carried out by banks in the local banking sector, especially, cooperative banks. The review of adequacy of liquidity is part of the SREP. In another country, the supervisor is working to amend the directives on ICAAP requirements to introduce more elaborated information on liquidity. In one country, there is a plan to complement the ICAAP with ILAAP in the future. Regarding the assessment of liquidity, three jurisdictions are not considering further adjustments to either the ICAAP or the SREP.

Supervisory Response

Having carried out the SREP, supervisors should take appropriate action if they are not satisfied with the results of the bank's own risk assessment and capital allocation (BCBS 2006, Pillar II, par. 756). Bank-specific uncertainties will be treated under Pillar II. Supervisors will typically require or encourage banks to operate with a buffer over and above Pillar I. There are several means available to supervisors to ensure that individual banks are operating with adequate levels of capital. Among other methods, the supervisor may set trigger-and-target capital ratios or may define categories above minimum ratios to identify the capitalization level of the bank (BCBS 2006, Pillar II, Principle 3, par. 757).

In the 10 jurisdictions that responded to the survey,[14] banking laws and regulations provide the supervisors with explicit power to set individual capital expectations that are based on Pillar II review and outcomes. For instance, in

[14] This includes one jurisdiction where ICAAPs are not required yet. The legal framework also empowers this supervisory authority to require capital above the minimum regulatory requirements when deficiencies are identified during the ICAAP review.

one country, supervisors assess each bank and may require capital above Pillar I when the bank faces certain risks, either specific to the bank or affecting the economy as a whole. Moreover, regulations set a range of possible actions to address shortcomings in banks' ICAAPs, including the requirement of additional capital. In another of the surveyed countries, the legislation allows the supervisory authority to increase the minimum capital adequacy ratios; to apply different ratios to each bank; and to differentiate calculation and even the reporting periods, considering the banks' internal systems, assets, and financial structure. In one of the respondent jurisdictions, the legal framework allows the supervisor to instruct a credit institution to hold capital in excess of the minimum requirements relating to elements and risks not covered by Pillar I.

In most jurisdictions, banks primarily determine the Pillar II capital amount, whereas in others, supervisors adopt a more prominent role. Most of the jurisdictions have a two-stage process. First, banks determine their Pillar II capital needs as part of their ICAAPs. Second, supervisors review banks' assessment and decide whether the Pillar II capital, as determined by the bank, is enough. If supervisors decide that a bank´s capital level is insufficient to cover its risks, then they may require additional capital. This is the process followed in four of the surveyed jurisdictions. In one country, the supervisor determines Pillar II add-ons. In another of the surveyed countries, the supervisor requires that all institutions should have capital to address some Pillar II risks (concentration, IRRBB, liquidity, and business cycle risk) on the basis of a standardized methodology provided by the supervisor.

Banks must assess whether they face any other material risk not covered by the regulatory requirements (for both Pillar I and the standardized Pillar II risk), in which case they should use their own internal methodologies to determine the necessary internal capital. In one jurisdiction, beside banks' internal capital assessment, the supervisor may require additional capital for banks with the highest risks. In two of the surveyed countries, this process is not in place yet.

The range of Pillar II add-ons resulting from the supervisory review is wide in the surveyed jurisdictions. In two countries, the supervisor may require an amount that is based on a bank-by-bank overall analysis of risk (holistic approach) within the SREP. In one jurisdiction, capital add-ons ranged from 1.21 to 9.62 percentage points in 2015 and from 0.57 to 6.30 percentage points in 2016. In another of the surveyed countries, all commercial banks were subject to an add-on in 2016, and the range was 0.48–3.81 percentage points. In one jurisdiction, the supervisor does not prescribe any capital add-on to banks; rather, banks are required to assess material risks to which they are exposed and to calculate Pillar II capital requirements using their own methodologies. Supervisors review those methodologies and the resulting capital estimates as part of the supervisory process. Two of the surveyed countries do not have this process in place yet.

Some supervisors do not have an ex ante, prespecified time frame for banks to comply with Pillar II capital expectations, whereas others have such a time frame. Four countries have no prespecified time frame; it is decided on a case-by-case basis. For instance, in one of those countries, supervisors set the time frame considering the time needed for the capital increase. Two countries report a prespecified time frame of three to six months and of six months, respectively. In another of the surveyed countries, there is a specific process, because if the supervisor has established a standardized Pillar II requirement, it must be satisfied on a monthly basis. For other Pillar II risks measured internally by the bank, if the bank does not have capital enough, it should present a capital plan within 15 days after the ICAAP report is sent to the supervisor (once a year). In two countries, the process is not in place yet.

In most surveyed jurisdictions, the failure of a bank to satisfy the supervisor's Pillar II capital expectations constitutes noncompliance. This is an indicator that the Pillar II requirement is binding in practice and is not just the minimum (Pillar I) capital requirement. To illustrate, in one jurisdiction, if the current capital adequacy ratio

falls below the internal capital ratio, the bank shall promptly submit an action plan to the supervisor ensuring that it will restore its capital to the level of the internal capital ratio. In another jurisdiction, capital for some Pillar II risks is required by regulation. Therefore, when a bank does not satisfy this requirement, it is considered in noncompliance with a regulatory requirement.

In six of the countries, banks are not allowed to use capital that has been allocated to Pillar II. Only under extreme circumstances such as severe stress, some jurisdictions may allow the use of such capital. For instance, in one jurisdiction, under such a scenario, the bank must prepare a capital conservation plan and submit it to the supervisor no later than five working days after the bank identifies that it is failing to meet the Pillar II requirement. In another respondent jurisdiction, the countercyclical capital buffer (which is considered part of the Pillar II capital) is allowed to be used under certain circumstances. In one country, supervisory approval is needed if a bank intends to use Pillar II capital.

Under normal circumstances, most surveyed supervisors adjust their Pillar II capital expectations annually on the basis of their annual SREP. Nevertheless, they are prepared to adjust their expectations more frequently if there are significant changes in the bank or in market conditions. One jurisdiction reports an ongoing monitoring of banks and may require monthly adjustments to the banks' capital adequacy on the basis of off-site supervisory analysis. In another jurisdiction, the supervisor adjusts an expectation monthly, at least for the standardized Pillar II requirement, which is measured for that frequency. In one country, the frequency ranges from one to two years.

Corrective Actions

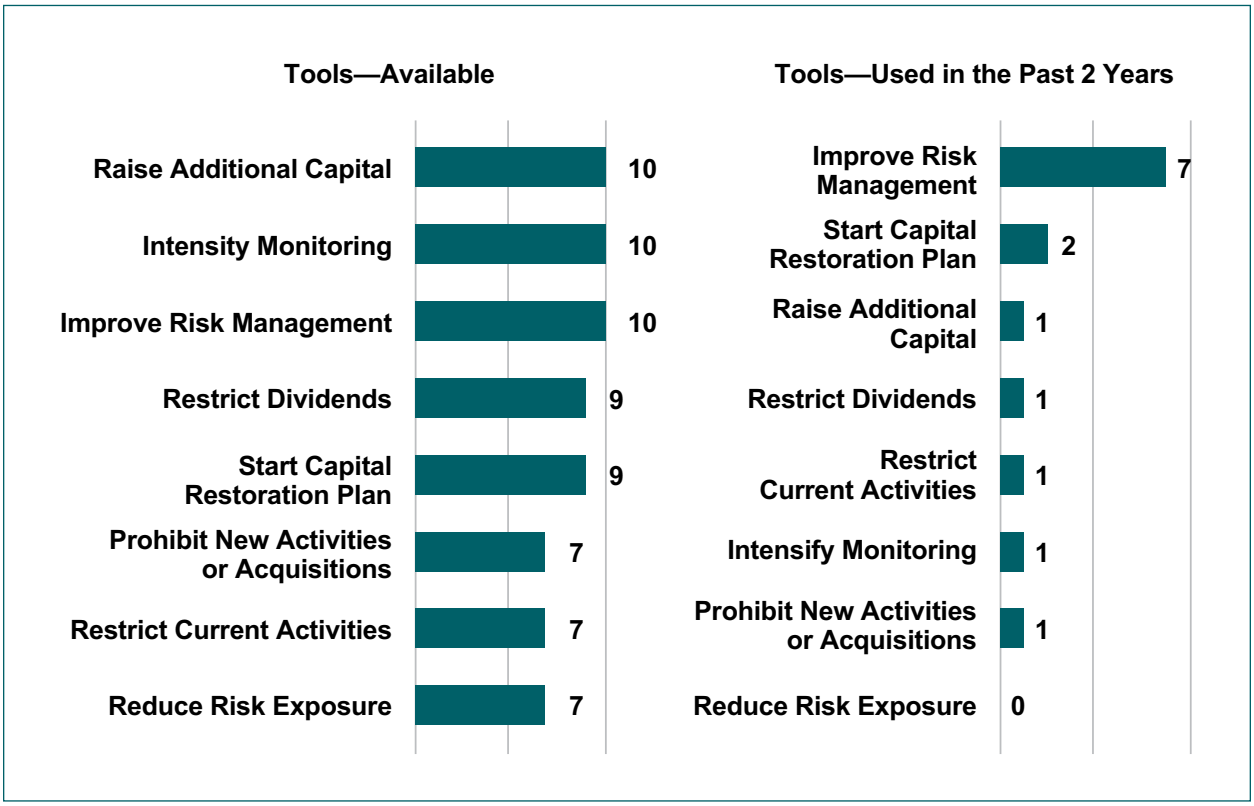
Supervisors should consider a range of options if they become concerned about whether a bank is meeting the requirements embodied in the Pillar II process. Those actions may include intensifying the bank's monitoring, restricting the payment of dividends, requiring the bank to prepare and implement a satisfactory capital adequacy restoration plan, and requiring the bank to raise additional capital immediately. Supervisors should have the discretion to use the tools best suited to the circumstances of the bank and its operating environment (BCBS 2006, Pillar II, par. 759).

All surveyed supervisors requiring ICAAPs have tools available to deal with less-than-satisfactory ICAAP results. Requiring banks to improve risk management systems and controls, intensifying the bank's monitoring, and requiring additional capital are tools available to the nine surveyed supervisors who require ICAAPs. Requiring a capital adequacy restoration plan and restricting payment of dividends are tools available to eight of the nine respondents. Six of the nine respondents can require banks to reduce their risk exposure, restrict banks' current activities, or prohibit new activities or acquisitions. The most frequent action required by supervisors in the past two years has been to improve risk management systems and control (figure 4). Some of the weaknesses mentioned in this area by respondents are that the risk appetite and risk tolerance are not consistent and are not well linked to ICAAP results, that there is a lack of an independent review of the ICAAP by an independent area of the bank or the internal audit, and that there is a the lack of a forward-looking solvency assessment.

In most surveyed jurisdictions, banks have access to the supervisor or to a third party through an appeals process to review the supervisory decision to raise Pillar II capital. In one jurisdiction, banks should submit their objections to the supervisor in writing. Once the supervisor issues the final report, the institution may file a complaint against that decision in a court of law. In another jurisdiction, banks may file defense briefs with the supervisor; however, those allegations are not necessarily admitted. In one country, since 2016, the additional capital requirements (Pillar II add-ons) have been imposed through an administrative decision. The decision is final and subject to immediate implementation; however, the bank may file a motion to reconsider the decision. If the decision is sustained, the bank may appeal the decision at the

administrative court. In another jurisdiction, once the direction to raise capital is final and the bank is notified, the decision cannot be overridden through an appeals process. Four surveyed jurisdictions do not have such a process yet.

Figure 4. Corrective Actions



IV. CONCLUSIONS AND LESSONS

By design, Pillar II is principle based and flexible; therefore, the specifics of implementation differ across jurisdictions and institutions. By analyzing how Pillar II has been implemented across a sample of jurisdictions, this note helps to highlight areas in which challenges still exist and from which some lessons may be learned.

Regarding the ICAAP, the main lessons and challenges are as follows:

- **Having clear supervisory guidelines for the ICAAP is important to clarify expectations for both supervisors and banks.** The degree of detail of those guidelines may vary and is typically influenced by the supervisory culture of the country. Nevertheless, the main expected components of a sound ICAAP should be explicitly mentioned in the guidelines.

- **It is useful that supervisors require the use of common templates for institutions to report the ICAAP.** Nevertheless, there should be a balance between standardization and flexibility. Templates should be standardized but flexible enough to reflect that the ICAAP is a bank-driven and a bank-specific process. The template should not be so rigid that it becomes simply a checklist. The template should include not only quantitative but also qualitative information. The ICAAP is a process; as such, it should be supported by strong corporate governance and a sound risk management framework that should be described in the template.

  The templates should typically include a summary section covering the general information, the scope of application, the key components of the ICAAP, the summary of a stress-testing framework, and the bank's approach to capital planning. In another section, the institution should describe its risk governance framework, including the board and senior management responsibilities, the role of committees, and the role of the internal audit in the ICAAP. Another section should be devoted to the quantitative assessment of risks and the internal capital required to cover those risks. Institutions should describe how they identify and measure their material risks and related capital needs. They should describe clearly the consistency of this assessment with their risk profile, risk appetite, and capacity. The template should include a section where institutions describe their capital planning and stress-testing framework, including a description of their needs and sources of capital, their capital plan for current and next years, and a clear description of the stress-testing framework. The template should allow banks to describe what their approach to aggregate their internal capital needs for all risks might be and whether diversification effects (inter- as well as intra-risk diversification) are considered. In the conclusions, banks should summarize their total internal capital needs and capital sources.

- **The scope of ICAAPs should be sufficient to accurately reflect the risks in a financial group and to allow supervisors to determine if risks are properly captured and addressed.** In some cases, supervisors may require both consolidated and stand-alone ICAAPs. Supervisors should expect subsidiaries and branches of international banking groups to be involved and empowered to discharge their duties in relation to their ICAAP. The local institution should be responsible for the application of global tools and processes relative to the host financial market; otherwise the ICAAP for the whole group may not be a good representation of the reality of the institution in the host market. In this regard, the ICAAP guidelines should clearly establish the responsibilities of local institutions that are

subsidiaries or branches of international banking groups. In jurisdictions where the requirement comes from the general legal or regulatory framework, no further instructions are necessary for ICAAP purposes. The assessment of capital adequacy for subsidiaries should not be different from that for local banks, and the local institution should be responsible for the application of global tools and processes at the local level. In the case of branches, experience shows that when this home-host issue is not addressed correctly, the ICAAP is too far removed from the host reality.

- **Proportionality must be embedded in ICAAPs.** ICAAP reporting and methodologies should vary according to the size and complexity of banks in the given jurisdiction. The smaller and less complex institutions should be allowed to use simple measurement methodologies that are consistent with their less complex risk management frameworks and ICAAPs. Nevertheless, even in the simpler banks, Pillar II capital should not be an automatic add-on, but it should be risk-based and consistent with the institution's business and risk profile. To determine whether proportionality is being applied consistently, supervisors needs a clear and deep understanding of each institution.

  Supervisors should weigh the benefits and drawbacks of providing standardized ICAAP methodologies. In particular, supervisors should not redirect banks' incentives to develop their own methodologies. ICAAP implementation should remain a bank-driven process that is established on banks' internal risk management processes as much as possible. Most jurisdictions surveyed for this projects do not offer standardized methodologies that may be used by banks to measure their Pillar II—with only one exception. In all other cases, proportionality is decided and applied by the bank itself and assessed by supervisors during the SREP.

- **A capital plan is a key component of a sound ICAAP; it should be forward looking, with clear time horizons that go beyond the current year.** Supervisors should require that the capital plan states what the institution's objectives are, what the time horizon is for achieving those objectives, how they set capital targets, and which people or internal areas are in charge of that process. The time horizon should exceed the current year, and it should cover from three to five years to allow for a forward-looking perspective.

  As part of their ICAAP, institutions should explain clearly the link between capital planning and their strategic business plans, risk management processes, and risk profiles. Banks should provide evidence that their internal capital targets are well founded and consistent with their overall risk profile and operating environment. Moreover, institutions should explain if—to determine their capital targets—they consider factors such as a target external rating, market position, entrance to new markets, capital accessibility, acquisitions of other undertakings, and other strategic goals. The capital plan needs to be integrated to institutions' strategic plans, risk appetite, and risk tolerance. Banks should have a well-defined process to assess the adequacy of internal capital on the basis of their risk profile and a strategy for maintaining their capital levels over time.

- **Supervisors should be aware of the challenges and limitations faced by those parties involved in the ICAAP review, such as the board and the internal audit.** The staff members in the internal audit departments should be trained and resourced so that they have the proper skills, knowledge, tools, and techniques to provide an independent assurance on the quality and effectiveness of a bank's internal control, risk management, and governance systems and processes supporting the ICAAP.

  Board and senior management oversights are key to an effective ICAAP. The board should be responsible for approving the ICAAP and—together with the senior management—should be responsible for formulating strategic plans and setting risk appetite and risk tolerance. The board should define the corporate objectives, the risk strategies, and the bank's risk profile, as well as approve the approach and oversee the implementation of key policies pertaining to the

bank's ICAAP. Consistent with the direction given by the board, senior management should implement business strategies, risk management systems, and risk culture processes and controls for managing the risks to which the bank is exposed, all of which should be consistent with the board's risk appetite.

- **Supervisors should encourage institutions to disclose their Pillar II capital figures and the risk governance aspects around Pillar II and to allow third parties to better assess banks' total capital adequacy.** Even though Pillar III requirements focus on Pillar I capital figures, a total capital ratio should be disclosed jointly with the disaggregation of capital assigned to each of the risks that the bank considers part of Pillar II. That disclosure will allow for a comprehensive picture of the bank's soundness.

  The aggregation methodology and inter-risk diversification effects, when they exist, should also be disclosed. Given all the challenges presented by risk aggregation, supervisors should adopt a conservative approach on the recognition of diversification effects for Pillar II purposes. When institutions are allowed to recognize those effects, they should document the assumptions and methodologies used and should show whether they are valid under stressed scenarios. The methodology used to determine correlation and diversification effects should be disclosed.

Regarding the SREP, the main lessons and identified challenges are the following:

- **The SREP needs to be underpinned by a strong culture of risk-based supervision.** The SREP requires supervisors to assess capital beyond compliance with minimum regulatory requirements. Supervisors should be suitably equipped with sufficient skilled resources to be able to challenge banks on their determination of total capital needs and carry out a comprehensive review of the banks' ICAAPs. The supervisory culture should not be too compliance based so that it jeopardizes the exercise of risk-based supervision, which is key to implement the SREP.

- **The outcomes of the SREP should be integrated into the overall supervisory assessment.** The SREP and the regular supervisory cycle should not be disconnected, and silo approaches should be avoided. The supervisory capital assessment for Pillar II purposes and that under the regular supervisory cycle should be closely linked, even if the frequency of the SREP is not the same as that of the regular supervisory cycle. The results of the SREP must be integrated into the regular supervisory cycle.

  The SREP needs to be a well-structured process that is based on a sound written document. The supervisory authority should develop a document for the SREP, with the procedures and methodologies that must be followed by supervisors when reviewing the ICAAPs. There should be a clear procedure describing how the outcomes of the SREP are considered during the regular supervisory process.

- **Proportionality should be a key characteristic of the SREP.** Jurisdictions should follow the approach that is best suited to their characteristics—for instance, by identifying formal categories of institutions or by using a case-by-case analysis. A formal categorization for financial institutions—reflecting the assessment of systemic risk posed by institutions to the financial system—may be used by supervisors as a basis for applying the principle of proportionality. The categorization should be reviewed at least annually or in the event of a significant corporate event such as a large divestment, an acquisition, or an important strategic action. The categorization should be consistent with any other categorization used for supervisory purposes, such as those used to identify G-SIBs or D-SIBs based on the BCBS methodology.

  The supervisor must possess the skills and resources to evaluate a range of ICAAPs relative to banks' sizes and complexities and the resulting capital configurations. Supervisors should conduct the ICAAP review combining the use of several tools and inputs from different

sources, including on-site and off-site reviews. The supervisory assessment should also be fed by discussions with the bank and with other stakeholders. Supervisors may request banks to submit additional documentation to support their ICAAPs. Supervisors should analyze key financial and nonfinancial indicators to monitor the financial conditions and risk profiles of institutions. Supervisors should monitor these indicators periodically to identify the need for updates to the assessment of the SREP in light of new material information outside of planned supervisory activities.

- **As part of the SREP, supervisors should have discussions with, and provide feedback to, not only the senior management but also the board of directors and those responsible for risk management, finance, compliance, and internal audit functions, as appropriate.** This helps to double-check information as well as to convey to parties their roles and responsibilities in the ICAAP and risk management processes in general. Moreover, it emphasizes and reinforces the board's responsibility in the process and holds them accountable for the integrity and independence of the process. Regular supervisory interaction with the different levels of the institutions is key to an effective risk governance framework. Those interactions encourage each level of the institution to be accountable for its respective roles. Peer group comparisons and thematic reviews should also be used during the SREP.

- **Supervisors should have the explicit power to set individual bank capital expectations based on Pillar II review and outcomes.** Given the genesis of the Pillar II capital standards, to more proactively provide capital support for risks and their configurations based on each bank's characteristics and business strategy, supervisors must be empowered to set capital requirements on the same basis. Lacking such tools, the supervisor is handicapped in discharging its duty: that of safeguarding the overall soundness of the banking sector and the economy as a whole.

  Thus, the total capital requirement that an institution should hold should be the Pillar I capital, plus the Pillar II capital as determined by the institution in its ICAAP and reviewed by supervisors during the SREP, and any other additional capital requirement determined by the supervisor as a result of the SREP. In addition, there should be clear supervisory guidelines determining that the failure of a bank to satisfy the supervisor's Pillar II capital expectations constitutes noncompliance. This is an indicator that the Pillar II requirement is binding in practice. Moreover, supervisory guidelines should be clear about under which circumstances (if any), banks are allowed to use capital that has been allocated to Pillar II. That should be allowed only under extreme circumstances, for example, in periods of severe stress and subject to supervisory approval.

- **Supervisors should have a range of tools to deal with less-than-satisfactory ICAAP results.** Supervisors should exercise their supervisory powers on the basis of deficiencies identified during the SREP. Supervisors should determine the institution's viability, on the basis of the adequacy of its capital resources, governance, controls, business model or strategy to cover the risks to which it is or may be exposed. On the basis of this determination, supervisors should take supervisory measures necessary to address those concerns, including requiring a capital adequacy restoration plan, restricting payment of dividends, requiring banks to reduce their risk exposure, restricting banks' current activities, or prohibiting new activities or acquisitions.

REFERENCES

BCBS (Basel Committee on Banking Supervision). 1988. *International Convergence of Capital Measurement and Capital Standards*. Basel, Switzerland: Bank for International Settlements (BIS).

———. 1996. *Amendment to the Capital Accord to Incorporate Market Risks.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2004. *International Convergence of Capital Measurement and Capital Standards: A Revised Framework.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2006 *International Convergence of Capital Measurement and Capital Standards. A Revised Framework. Comprehensive Version.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2011. *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems.* Revised version (original published December 2010). Basel, Switzerland: Bank for International Settlements (BIS).

———. 2012. *A Framework for dealing with Domestic Systemically Important Banks.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2015. *Corporate Governance Principles for Banks. Guidelines.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2017a. *Basel III: Finalising Post-Crisis Reforms.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2017b. *Twelfth Progress Report on Adoption of the Basel Regulatory Framework.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2018a. *History of the Basel Committee.* Basel, Switzerland: Bank for International Settlements (BIS).

———. 2018b. *Basel III Summary Table.* Basel, Switzerland: Bank for International Settlements (BIS).

EBA (European Banking Authority). 2014. "Guidelines on Common Procedures and Methodologies for the Supervisory Review and Evaluation Process (SREP)." EBA/GL/2014/13. London: EBA.

———. 2016. "Guidelines on ICAAP and ILAAP Information Collected for SREP Purposes. Final Report." London: EBA.

Financial Stability Board (FSB). 2014. *Key Attributes of Effective Resolution Regimes for Financial Institutions.* Basel, Switzerland: FSB.

Ingves, Stefan. 2015. "From the Vasa to the Basel Framework: The Dangers of Instability." Unique lecture presented at the 2015 Annual Convention of the Asociación de Mercados Financieros, November 2, 2015, Madrid, Spain.

Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation and Office of Thrift Supervision. 2008. "Supervisory Guidance: Supervisory Review Process of Capital Adequacy (Pillar 2) Related to the Implementation of the Basel II Advanced Capital Framework." Office of the Federal Registrar, Washington, DC. https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20080715a1.pdf.

Office of the Superintendent of Financial Institutions. 2010. "Internal Capital Adequacy Assessment Process (ICAAP) for Deposit-Taking Institutions." Guideline E-19. Government of Canada. http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/icaap_dti.aspx?pedisable=true.

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