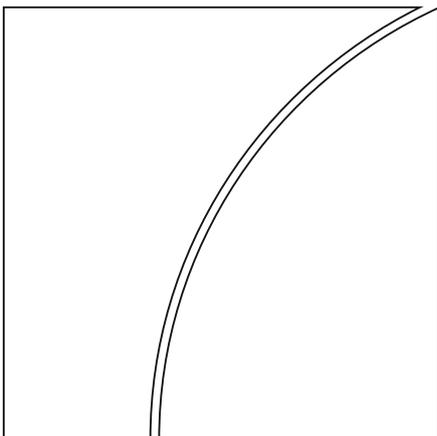


Basel Committee on Banking Supervision

Discussion paper



The regulatory framework: balancing risk sensitivity, simplicity and comparability

Issued for comment by 11 October 2013

July 2013



BANK FOR INTERNATIONAL SETTLEMENTS

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ISBN 92-9131-940-6 (print)

ISBN 92-9197-940-6 (online)

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The regulatory framework: balancing risk sensitivity, simplicity and comparability

1. Introduction

1. The financial crisis highlighted a number of shortcomings in the financial system's regulatory framework. In response, the Basel Committee introduced a range of reforms designed to substantially raise the resilience of banks, and thereby the financial sector more broadly, against shocks. While some of these measures strengthen the bank capital adequacy framework itself, others are designed to reduce reliance on a single capital adequacy ratio as the primary means of ensuring the soundness of banks. These measures include the introduction of a leverage ratio, an additional capital surcharge for global systemically important banks (G-SIBs), a proposed framework for measuring and controlling large exposures, and minimum liquidity and funding standards. The Committee has also established a comprehensive regulatory consistency assessment programme with a view to ensuring consistent implementation of Basel III across banks and jurisdictions.

2. Having substantially strengthened the banking system's regulatory framework, the Committee's attention is now turning to the framework's complexity and the comparability of capital adequacy ratios across banks and jurisdictions. Complexity is largely driven by a desire for risk sensitivity within the capital adequacy regime, ie capital requirements should reflect the underlying risks taken by banks. However, risk is multi-faceted and far from straightforward to measure. While a risk-sensitive regulatory framework offers a number of benefits, the resulting complexity also entails a number of potentially adverse consequences.

3. The Committee believes that a risk-based capital regime should remain at the core of the regulatory framework for banks, supported by liquidity and funding metrics as well as other measures such as a leverage ratio. That said, the pursuit of increased risk sensitivity has considerably increased the complexity of the capital adequacy framework in some areas – particularly the calculation methodology for risk-weighted assets. As a result, there is a risk that the framework may not always strike an appropriate balance between the complementary goals of risk sensitivity, simplicity and comparability.

4. The Committee views the simplification of the Basel capital standards, where possible, as well as improvements to the comparability of their outcomes,¹ as an important part of its agenda to reform the regulatory framework and ensure that it remains "fit for purpose". In June 2012, the Committee mandated a small group of Committee members (the Task Force on Simplicity and Comparability) to undertake a short review of the Basel capital framework with a view to reducing any undue complexity and improving the comparability of its outcomes. In particular, the Task Force was asked to (i) consider whether the current Basel capital adequacy framework strikes an appropriate balance between simplicity and risk sensitivity and (ii) provide the Committee with recommendations on ways in which the framework can be simplified, without materially altering its underlying objective or strength.

5. The Task Force submitted a report to the Committee that analysed various issues concerning the complexity of the Basel capital framework. The report identified a range of ideas and potential responses for the Committee's consideration. This discussion paper, which has been derived from the Task Force's report, discusses the reasons behind the evolution of the current framework, and outlines

¹ Outcomes from the Basel standards reflect the financial metrics generated by using these standards. For example, regulatory capital, risk-weighted assets and capital ratios are the outcomes from the application of the Basel capital standards.

the potential benefits and costs that arise from a more risk sensitive methodology. It paper also discusses ideas that could possibly be explored to further reform the framework with the objective that it continues to strike an appropriate balance between the complementary goals of risk sensitivity, simplicity and comparability.

6. The Committee's view is that the issues raised by the Task Force are important, and require careful consideration before changes to the regulatory framework are proposed. At this stage, the Committee has not made a decision to pursue any of the ideas presented; the purpose of this paper is to elicit comments and feedback from a broad range of interested stakeholders, and therefore to help the Committee refine its thinking in this area. Furthermore, the Committee remains firmly of the view that full, timely and consistent implementation of Basel III remains fundamental to building a resilient financial system, maintaining public confidence in regulatory ratios and providing a level playing field for internationally active banks. Adopting the Basel III reforms (higher and better quality capital, improved risk coverage, capital buffers, and liquidity and funding requirements) in accordance with the internationally-agreed transition period deadlines is itself an important step in improving the consistency and common understanding of bank regulation globally.

7. The remainder of the paper is organised into five sections. Section 2 discusses the concepts of simplicity, comparability and risk sensitivity. Section 3 provides an overview of the current risk-based capital framework's development and rationale. Section 4 discusses the causes and consequences of complexity. Section 5 sets out some ideas that could be explored to address various drivers of complexity, while Section 6 provides some concluding comments and seeks feedback on some specific questions.

8. The Committee welcomes views on the issues outlined in this paper. This input will help inform its approach to the ongoing review of the regulatory framework. Comments should be submitted by 11 October 2013 by e-mail to baselcommittee@bis.org. Alternatively, comments may be sent by post to: Secretariat of the Basel Committee on Banking Supervision, Bank for International Settlements, CH-4002 Basel, Switzerland. All comments may be published on the website of the Bank for International Settlements unless a respondent explicitly requests confidential treatment.

2. Conceptual considerations

Simplicity

9. Simplicity is a design feature of a regulatory framework. In the context of the capital adequacy framework, it has two dimensions: the simplicity of the capital standard itself, and the simplicity of the capital calculation process.

10. A capital standard is simple if it is clear and can be understood with reasonable effort. This requires:

- *Simple exposition:* a simple standard is clearly expressed in straightforward language. It is easily explained to banks to which it is meant to apply, as well as to other groups with a legitimate interest, such as market analysts.
- *Simple interpretation:* a simple standard is precise and unambiguous: it avoids imprecise terms that are capable of widely divergent interpretations.

11. A capital calculation process is simple if it requires:

- *Simple inputs:* a simple standard does not require a large number of inputs and avoids reliance on inputs not captured within the normal accounting or risk management systems of banks (ie, the inputs are subject to internal or external validation so the data called for is more readily accessible, better understood, and more reliable).
- *Simple calculations:* a simple standard can be calculated without the need for the use of highly advanced mathematical and statistical concepts, avoids iterative calculations, and can be easily verified by external parties such as supervisors or auditors.

12. Impediments to simplicity within the current framework include:

- increased focus on the risk sensitivity of capital requirements, which in turn is driven by multidimensional risks and the diversity of modern financial instruments to which banks have exposures;
- basing measurement of capital requirements on banks' internal models, which are continuously evolving to reflect advances in risk management;
- efforts to avoid different interpretations of certain terms and achieve precision that may result in additional or more specific criteria;
- the need to reflect the specific circumstances of all member jurisdictions, which leads to the expansion and complexity of the globally agreed standards; and
- the need to provide a range of options to measure capital requirements, keeping in view the varying stages of development of different financial systems.

Comparability

13. Comparability is an outcome of a regulatory framework. A capital framework achieves perfect comparability if it delivers:

- *Comparability between banks:* two banks with portfolios having identical risk profiles apply the framework's rules and arrive at the same amount of risk-weighted assets and two banks with different risk profiles should produce risk numbers that are different proportionally to the differences in risk.
- *Comparability over time:* a bank's risk-weighted assets do not change over time if the underlying risks remain unchanged, and change proportionally when risks do change.

- *Comparable information*: any differences in risk-weighted assets across banks, jurisdictions and over time can be understood and explained.
14. Impediments to comparability within the current framework include:²
- computational complexity, which makes it harder to understand the drivers of changes in risk-weighted assets;
 - choices given to banks (eg choices between advanced and standardised approaches, and modelling choices within the advanced approaches);
 - differences in interpretation of information and differences in the level of conservatism applied by banks (eg. value adjustments/provisions, rating grades, and estimates of PD/LGD);
 - choices given to supervisors (eg national discretions); and
 - differences in measurement and valuation regimes, including in particular accounting frameworks.

Risk sensitivity

15. Risk sensitivity can be both a design feature and an outcome of a regulatory framework. In the context of capital requirements these two different dimensions can be thought of as:

- *Ex ante risk sensitivity*: a risk-sensitive standard draws fine distinctions based on the characteristics of individual exposures or transactions. In the capital adequacy framework, this is primarily reflected in the granularity of the risk weights.
- *Ex post risk sensitivity*: a standard is risk-sensitive if, other things being equal, it can accurately differentiate in advance between different risk profiles. For a capital framework, this implies that it can distinguish with reasonable accuracy between sound banks and those that are likely to fail. Risk is, of course, unobservable; hence, this type of risk sensitivity can only be accurately assessed ex post.

16. Impediments to ex ante risk sensitivity within the current framework include:

- the multidimensional nature of risk in complex banking organisations, which makes comprehensive risk assessment extremely challenging;
- the limits to data collection, storage and analysis; and
- the need to offer simple approaches for a range of different banks.

17. Impediments to ex post risk sensitivity include:

- the use of risk models, simplified representations of reality built on assumptions that may fail;
- the nature of risk itself, and the inability to predict the future with certainty; and
- the possibility that indicators may lose their predictive power when relied on for regulatory purposes (Goodhart's Law).

² Inconsistent implementation across jurisdictions, both in terms of timing of adoption and transposition of standards into national regulations, also contributes to reduced comparability of outcomes. However, these factors are not the focus of this paper.

3. The evolution and objectives of the risk-based capital adequacy framework

18. Does a bank have sufficient capital to meet the losses that it might incur? The question is fundamental to the assessment of banks' safety and soundness and it sits at the heart of the first risk-based capital adequacy framework developed by the Basel Committee 25 years ago.³ The 1988 Basel Accord responded to concerns that varying capital standards and measures in different jurisdictions were distorting competition and incentives. These concerns were magnified by a general downward trend in bank capital ratios (however measured) during that period.

19. The 1988 Basel Accord's capital adequacy regime was designed to be applied to all internationally active banks so that (i) banks held an adequate amount of capital against the risks they were exposed to, (ii) the playing field for cross-border banking was levelled, and (iii) comparison of bank capital positions was simplified. It comprised:

- a definition of eligible capital, which included a tiering structure acknowledging that not all capital instruments have equal loss-absorbing capacity; and
- a set of simple asset risk weights, in recognition that different asset classes exposed banks to varying risks of loss. Most of the off-balance sheet exposures were also captured via a simple methodology for converting various types of off-balance sheet exposures into on-balance sheet equivalents (thereby reducing the incentive to move assets off-balance sheet).

20. The development of a risk-based capital framework proceeded from a recognition that capital adequacy and leverage are distinct (albeit related) concepts. A leverage ratio (ie the ratio of capital to assets) measures the extent to which a given portfolio of assets is supported by capital. Such a ratio is relatively simple and transparent. But it is not risk-sensitive (in an ex ante sense) and may not be comparable without adjustments for different accounting standards. Risk-based capital adequacy ratios, on the other hand, seek to assess whether the level of capital is adequate to cover the losses that might be incurred by the portfolio of assets being held, along with any contingent exposures not recorded on the balance sheet. In particular, at the time the Accord was developed, the Committee judged that the risk-based capital regime had the following advantages over a simple leverage ratio:

- it provided a fairer basis for making comparisons across banking systems whose structures differ;
- it allowed off-balance-sheet exposures to be incorporated more easily into the measure; and
- it did not deter banks from holding liquid or other assets which carry low risk.⁴

21. While the conclusion of this international agreement was lauded at the time, the 1988 Accord had its limitations. Most obviously, it considered only the credit risk of bank assets, ie the risk that the bank's counterparty would default. This kept the framework simple, but meant that other types of exposure – eg market and operational risks – were not explicitly accounted for. Given its very simple risk-weighting structure and exclusive focus on credit risk, the adequacy of the 1988 Accord was challenged

³ The concept of risk-based capital requirements for banks had already existed for many years prior. Indeed, early studies by the Basel Committee showed that, even before 1975, some jurisdictions had risk-based requirements in place, in one form or another. But other jurisdictions were still using leverage ratios or other simple metrics to regulate bank capital.

⁴ Basel Committee on Banking Supervision, *International convergence of capital measurement and capital standards*, July 1988, paragraph 28.

by the rapid developments in the financial sector during the 1990s, such as the emergence of derivatives and securitisation. In 1996, therefore, the original Accord was updated with the market risk amendment, which recognised that banks were raising their exposure to market-related risks through their increased trading of financial assets and derivatives.⁵ As a result, a market risk capital requirement was introduced to complement the existing credit risk framework so that banks' capital requirements would rise in proportion to the market risk incurred from their trading activities.⁶

22. The market risk amendment was also notable because, for the first time, internal models were accepted as part of the regulatory framework: banks, subject to supervisory approval, could choose between a standardised calculation and the use of their own internal (value-at-risk) models to determine their regulatory capital requirement for market risk. The use of internal models in the regulatory framework – the first step away from the original Accord's "one size fits all" approach – acknowledged that the standardised approach for market risk may not be adequate to capture the risks inherent in large and complex trading and derivative portfolios. It was accepted that value-at-risk models could be a superior measure on which to base regulatory capital requirements. That is, if used correctly and with appropriate safeguards, models would offer greater risk sensitivity and precision, could help avoid duplication and should create incentives for banks to develop strong risk management systems.

23. The next major refinement of the Basel framework – the Basel II package of reforms in 2004 – was motivated by the evolution of modelling approaches to risk management within the banking industry, and a move by regulators to improve the incentive structures provided by the risk-based capital framework. Focusing on the measurement of risk-weighted assets, this set of reforms sought to harness the perceived advantages of internal models for the measurement of credit risk – still the most important risk category for banks. An explicit capital requirement for operational risk was also introduced. In addition, Basel II also gave formal recognition to the supervisory review process (Pillar 2) and the role of disclosure and market discipline (Pillar 3) within the capital adequacy framework. These additional Pillars were introduced to reinforce the concept that boards and management were primarily responsible for managing risk and capital requirements, and the need to promote appropriate controls and oversight of the advanced internal model approaches. These expectations encouraged significant enhancements in the role and responsibilities of an independent chief risk officer and risk control department.

24. The expanded role for internal models meant that the Basel II framework provided a suite of calculation methods for determining regulatory capital requirements – a framework which is still in force today. Banks must calculate capital requirements for credit, market and operational risk using either a prescribed standardised approach or, with supervisory approval, an internal model-based method. In adopting this approach, the Committee sought to add two additional objectives beyond the original objectives of adequate capital:⁷

- to ensure the framework could be applied to a wide range of banks; and

⁵ While the focus of the market risk amendment was on introducing a new capital requirement to cover market risks, the Committee did accept that the liquidity of assets and liabilities associated with trading positions had some advantages. The market risk framework therefore introduced the distinction between the trading book and the banking book on bank balance sheets, with positions in the former generally receiving lower capital requirements to reflect the fact that banks – at least individually – can more readily exit trading positions than they can divest themselves of traditional buy-and-hold loans. However, this also created potentially adverse incentives, ie to structure products in a manner that allowed them to meet the criteria necessary for inclusion in the trading book since the models used to generate market risk capital did not fully capture the risks present in these exposures. Hence, the need for Basel 2.5 package.

⁶ Basel Committee on Banking Supervision, "The Amendment to the capital accord to incorporate market risks", July 1996.

⁷ When Basel II was formulated, this objective was considered to be adequately achieved by keeping the overall capital requirement for the banking system unchanged, even though the framework's risk sensitivity had been increased.

- to increase the risk sensitivity of capital requirements, which in turn was intended to:
 - better align economic and regulatory capital, and thereby reduce incentives for regulatory arbitrage; and
 - create incentives for banks to develop improved risk management systems.

25. However, the financial crisis showed that both the overall minimum level of capital and the quality of regulatory capital were deficient. The Basel III reforms (and the so-called Basel 2.5 package that raised capital requirements for specific trading and securitisation-related activities) therefore aimed to substantially strengthen capital requirements by raising the overall minimum level of capital. It also simplified and strengthened the new regulatory capital base by requiring that eligible regulatory capital was of higher quality and genuinely loss-absorbing. The Basel III changes were announced in 2010, to take effect from the beginning of 2013.

26. Basel III further strengthened the regulatory framework by introducing the (non-risk-based) leverage ratio, intended as a backstop to prevent any excessive leverage that might be possible under a risk-based framework. In addition, two liquidity standards were introduced: the Liquidity Coverage Ratio and the Net Stable Funding Ratio plus a series of monitoring metrics. The two standards and the monitoring metrics are intended to, respectively, strengthen banks' short-term liquidity positions and ensure that they maintain a prudent funding structure.

27. These additional measures will lessen the regulatory reliance on the risk-based capital ratio as the sole measure of bank financial health, and provide a broader perspective on bank safety and soundness (this is often referred to as a "belts and suspenders" approach). However, while lengthening the regulatory "rulebook", these new measures add considerably to the overall strength of the risk capture and comparability of outcomes of the overall regulatory framework.

28. In retrospect, the evolution of the risk-based capital regime highlights the constant challenge of balancing simplicity, comparability and risk sensitivity:

- The 1988 Basel Accord was risk-based, yet relatively simple. But it attracted criticism as a measure of capital adequacy for focusing exclusively on credit risk and for the crudeness of the risk weights applied to asset classes. While it was straightforward to compare bank capital ratios under this regime, the meaningfulness of such comparisons could easily be called into question.
- Enhancements to the framework via the market risk amendment and Basel II/III have been designed to make risk measures more sensitive to the underlying risks within bank balance sheets and reduce arbitrage, but they have done so at the price of added complexity. This is particularly the case where internal models are used for regulatory purposes. The current capital adequacy framework entails a much deeper analysis of banks' underlying risk profiles, but this depth of analysis also makes the comparison of outcomes more difficult.

29. Clearly there are trade-offs to be made in finding the right balance within the regulatory framework, and the framework should regularly be reviewed to assess whether this balance can be improved. Thus, the remainder of this paper discusses ideas that could be pursued to simplify and improve the comparability of bank capital requirements in the light of concerns that, in its current form, the capital adequacy framework may be too complex and that, as a result, comparability is being hindered. These ideas should be assessed against the primary aims of the capital adequacy framework: that is, the capital adequacy framework should:

- produce a sound minimum standard of capital adequacy for internationally active banks, but also be capable of application to smaller institutions;
- deliver a well-understood measure of capital adequacy that is comparable across banks and over time;
- support a reasonable level playing field between banks;

- take into account the effects of capital requirements on banks' risk-taking incentives, eg when faced with regulatory constraints on their capital (and therefore the size of their balance sheet), to seek higher-risk assets as a means of boosting expected returns; and
- promote improved risk measurement and management within banks.

4. The challenges of complexity and comparability in the Basel capital framework

30. Supervisory confidence in risk weights is critical to the success of the regulatory framework. The Committee's work on the implementation of the Basel capital framework is providing evidence that variations in capital outcomes generated by internal models (with respect to portfolios with similar risk profiles) may be larger than originally expected. The limits to comparability, and the complexity of the modelling processes which underlie a part of it, may create difficulties for supervision. It might, for example, lead to a misallocation of resources, if some banks looked weaker or stronger than they really were, because the methods of calculating risk weights were not comparable.

31. Investor confidence in risk weights is also a crucial element of the regulatory infrastructure. When stakeholders believe that risk-based ratios provide reliable signals for the absolute and relative resilience of banks, the sensitivity of bank funding costs to changes in risk-taking is likely to increase, strengthening the effectiveness of market discipline in good times. And confidence in the risk-weighting regime should reduce uncertainty over counterparty solvency, reducing the risk of strains in bank funding markets in times of stress. Conversely, a lack of comparability, driven by complexity in the risk-weighting process, may erode market confidence in risk-based capital ratios as a measure of financial soundness, adding an uncertainty premium to bank liabilities. In recent years, bank equity analysts have frequently remarked on the difficulty of understanding differences in risk-weighted assets both across firms and through time.

The trend towards increased complexity and reduced comparability

32. Beyond the drive towards greater risk sensitivity within the capital adequacy framework, a number of factors have contributed to the ever-growing complexity of the regulatory framework. These include the continuous innovation within financial markets, alignment with banks' risk management practices, adaptation of rules to accommodate new products, and the process of reaching international agreement on standards that must be applied across many jurisdictions. Some complexity has also been introduced to reduce the potential for risk-shifting that overly simple rules can allow. Furthermore, some complexity within the regulatory framework is inevitable, as banks' business models cannot be simplified beyond a certain point.

33. More generally, regulatory regimes have a natural tendency to accumulate complexity over time, as rules are refined to hinder arbitrage and to accommodate innovations or "difficult cases". While senior supervisors and senior bank management may prefer a simple framework that they can understand and apply flexibly, staff on both sides of the regulatory relationship who are charged with ensuring compliance tend to seek clarity to ensure that the boundaries of regulatory framework are obvious to all. Such demands typically generate increasingly detailed rules to deal with the many nuances and subtleties that banking transactions can involve.

34. The issue of complexity in the capital adequacy framework arises mainly in the context of banks' use of internal models. As noted in Section 3, the 1996 market risk amendment and Basel II sought to build on modern techniques of risk management that were viewed as superior to a prescriptive "one size fits all" methodology. In particular, the regulatory capital framework harnessed banks' own use of quantitative techniques in risk management, with the aim of bringing the regulatory assessment of risk closer into line with banks' own assessments, thereby reducing the incentives for regulatory arbitrage. This alignment was further strengthened by the "use test" requirements. Given that banks may have an incentive to influence both the input and output of the capital measurement models with the aim of reducing their capital requirements, the use test requirements seek to ensure that banks use the same inputs and methodologies for their internal risk management purposes as they do for

regulatory purposes. However, a side effect of this linkage is that regulatory models have come to embody the increasing complexity of banks' risk management models.

35. The drive to make capital requirements more risk-sensitive ex ante has encouraged greater use of advanced mathematics in risk modelling. When these models are customised to accommodate a wide array of exposures and portfolios with different risk profiles, the consequent parameterisation adds further to their complexity. Today, large internationally active banks are likely to employ a large number (possibly hundreds) of models to determine their consolidated capital requirements. These models are, in turn, based on a very large number of inputs – often parameters that are themselves estimated using complex quantitative techniques. These methods are intended to improve the accuracy of risk assessments, but clearly make the calculation process highly complex. The regulatory framework naturally expands and adds complexity when it seeks to keep pace with this increased sophistication.

36. The banking industry has also contributed to the increasing complexity of the capital framework and the consequent reduction in comparability by, for example, seeking special treatment for certain classes of business, often in specific jurisdictions that are viewed as requiring a differentiated approach. In some respects, these requests have been met by the use of internal models that allow for differential risk profiles across (and even within) national boundaries to be reflected in capital requirements. However, models alone cannot help jurisdictions achieve the full range of discretionary treatment sought – most obviously in the case of banks that lack the capability and/or supervisory approval to use models for capital adequacy purposes.

37. To allay level-playing-field concerns (equals must be handled equally, but disparate cases must also be treated differently), the Basel standards also contain a large number of national discretions beyond the normal supervisory judgements that are naturally part of an internal model-based regime. These discretions allow supervisors to tailor the application of international standards to domestic circumstances. For example, in the standardised approach for credit risk, two options may be used to risk-weight claims on a bank: supervisors may allow the weightings to be derived from the sovereign credit rating, or from the bank's own external credit rating. These discretions can provide significant scope for variation in risk weights for exposures with similar risk profiles, thereby reducing the comparability of reported capital ratios.

38. As noted above, risk-sensitive capital requirements have many advantages. In particular, they can:

- allow supervisors to better identify banks' risk exposures and their individual risk profiles, and demand corresponding capital requirements;
- provide a fair basis for a level playing field of banks in systems with different banking structures;
- strengthen comparability by reflecting a variety of different risk drivers;
- encourage better risk management by banks;
- allow banks to manage their businesses more efficiently in terms of the use of scarce capital;
- drive a better alignment of prices of banking products and services with their associated risks; and
- reduce incentives for regulatory arbitrage if supported by clear and detailed requirements.

39. To the extent that a degree of complexity achieves much more accurate risk measurement, it is an investment worth making. In practice, however, not all the aforesaid benefits may be fully achievable.

In the Committee's view, therefore, there may be scope for reducing the complexity of the capital framework without altering its overall rigour so as to improve the balance between simplicity and risk sensitivity, and to enhance comparability. In particular, the Committee's focus is on undue complexity. While Basel III has already significantly simplified the numerator of the capital adequacy ratios,⁸ the removal of undue complexity from the denominator (ie the risk-weighted asset calculation methodologies) has the potential to improve the effectiveness of the capital adequacy framework by increasing the comparability of reported capital ratios and making the framework easier to understand. Strengthening market discipline by providing more detailed disclosures may complement these efforts and further enhance the capital regime's overall effectiveness.

Consequences of undue complexity

40. Maintaining a reasonable balance between simplicity and risk sensitivity is critical to the success of the Basel capital framework. There is some evidence that some parts of the capital framework have become unduly complex and that the marginal benefits from incremental complexity may be small, or even negative. Furthermore, such undue regulatory complexity has a number of potential consequences.

41. From an internal risk management perspective:

- A bank's board and senior management may, at times, find it challenging to fully understand the risk profile of a bank's underlying risk profile and, as a result, the key drivers of the capital framework, even though the public has a legitimate expectation that they have that ability, and they are under a legal obligation to do so. This can impair bank's risk management and impact the ability of the board and senior management of a bank to ensure that the bank has adequate capital to support its risks.
- The use of highly complex internal models can jeopardise sound internal risk management to the extent that bank management places undue reliance on them. Risk management decisions based entirely on the output of complex quantitative analysis ("black boxes") may not result in effective and prudent decision-making.
- Compliance with an unduly complex capital framework in large and complex banking organisations may require specialist units to be set up to manage the regulatory capital positions. These units may assist in structuring transactions to help the bank use its capital as efficiently as possible. They may also help risk-takers to identify gaps or loopholes in the capital system that can be exploited. From that perspective, undue complexity might close one gap for regulatory arbitrage while inadvertently opening others.

42. Undue complexity in pursuit of increased risk sensitivity may also not be always rewarded with high precision (that is, ex post risk sensitivity), but may increase model risk. There are well known cases⁹ where the quest for precision has led to costly modelling errors. In addition, from an external perspective:

- The use of internal models can provide unintended incentives to banks to underestimate minimum capital requirements. Basel II was introduced, in part, in response to increased

⁸ Basel III introduces additional calculations and analysis for determining deductions and additional criteria for determining the eligibility of capital instruments. Notwithstanding these changes that apparently look more demanding, elimination of Tier 1 and Tier 2 capital with innovative features, clearly delineating the essential features of various categories of regulatory capital instruments, and harmonising regulatory adjustments to capital has added to the simplicity of the definition of capital.

⁹ For example, certain structured finance positions of banks whose credit risk was found to have been under-estimated both by banks and the credit rating agencies, as revealed during the financial crisis

regulatory arbitrage in Basel I. To avoid comparatively high regulatory capital requirements, banks securitised credit risk and shifted positions into the trading book or off their balance sheets. A more risk-sensitive regime was intended to be more robust to regulatory arbitrage. But banks may have incentives to distort their models if they are used to calculate risk-weighted assets. This may undermine the effectiveness of the Pillar 1 regime.

- Complexity has rendered aspects of the supervision of large and complex financial institutions more difficult. As capital adequacy calculations have become more complex and employ ever more sophisticated mathematical models, increasingly high demands are placed on a relatively small pool of supervisors with expert knowledge of advanced modelling methodologies. This is particularly acute in the case of large and complex financial institutions, where the use of models is extensive. Supervisors need to be alert that focusing their efforts on validating complex internal models can consume a significant amount of valuable resources, potentially undermining the broader supervisory review process under Pillar 2.
- Comparability of capital outcomes across banks and over time is an important attribute of a sound capital adequacy regime. The dispersion in the calculation of risk-weighted assets revealed by the Committee's recent analytical studies of trading¹⁰ and banking book¹¹ portfolios have highlighted the difficulty of comparing capital requirements and capital ratios. Complexity associated with the use of internal models, significant choice in the modelling of risk parameters and national discretions have contributed to material variations in risk-weighted assets across banks. There are limits to how far disclosure can both (i) keep pace with the increasing complexity and sophistication of bank balance sheets and products, and (ii) be sufficiently well understood by a wide variety of stakeholders. In that sense, the undue complexity of the Pillar 1 framework, by making it difficult to compare banks against their peers, may also be weakening the effectiveness of the market discipline provided by Pillar 3.

43. Furthermore, it has been argued that, implicitly at least, supervisors have subsidised complexity by choosing to allow the evolution of complex business models and developing a complex regulatory framework to compensate, and by calibrating capital requirements to generate an incentive to adopt internal models. But complexity in banking, particularly in large internationally active banks, has externalities: the more complex a bank, the harder it is to resolve when it encounters financial problems and hence the greater the value of the implicit subsidy from the perception of systemic importance.

44. To summarise, the negative consequences of undue complexity and reduced comparability in the capital framework could potentially include:

- making it more difficult for bank management to understand the regulatory regime;
- raising challenges in capital planning;
- leading to less (or spuriously) accurate risk assessments;
- creating regulatory gaps and opportunities for arbitrage;
- undermine the ability of supervisors to effectively assess the capital adequacy of banks;
- hindering effective review of the capital management process by supervisors;

¹⁰ Basel Committee on Banking Supervision, *Regulatory consistency assessment programme (RCAP) – Analysis of risk-weighted assets for market risk*, January 2013.

¹¹ Basel Committee on Banking Supervision, *Regulatory consistency assessment programme (RCAP) – Analysis of risk-weighted assets for credit risk in the banking book*, July 2013.

- making consistent, comparable implementation of standards more difficult to achieve; and
- hampering stakeholders in their efforts to understand the risk profile of banks, thereby undermining market discipline.

45. The benefits that come with risk sensitivity also come with costs. These costs include a more complex capital computation regime for both banks and supervisors, and concerns that comparability may be diminished.¹² On the other hand, overly simplistic capital requirements may hide risks or create adverse incentives for banks. Balance is therefore needed. The following section discusses some of the specific ideas that could be explored to minimise undue complexity and enhance comparability.

¹² Risk-sensitivity should potentially increase comparability. However, if there is too much national discretion in the framework or too much variation in the model parameters used, it may actually reduce the comparability of capital outcomes across banks.

5. Potential ideas to improve simplicity and comparability

46. With the aim of improving the comparability of bank capital ratios, the Committee has undertaken a significant study of the consistency of the risk-weighted assets in the trading and banking books across banks in various jurisdictions. This work will help to inform supervisors and external parties about the rationale for the observed differences in risk-weighted assets, thus promoting a better understanding of banks' risk-based capital ratios. Based on the lessons learned, areas have already been identified where the capital framework can be improved to improve comparability.

47. Other measures may well be needed, as complexity and reduced comparability have multiple causes. Mitigating them will require a multi-pronged approach. The Task Force proposed various suggestions to (i) simplify the capital adequacy framework, (ii) mitigate the negative consequences of complexity to the extent that the capital framework cannot be simplified further in the short term, (iii) address other fundamental forces driving the complexity of the regulatory framework, and (iv) improve the comparability of capital outcomes. The Committee is interested in further analysing these ideas, as well as other approaches that might address the problems created by undue complexity. Feedback to this discussion paper will be highly useful in informing the Committee's thinking.

Explicitly recognising simplicity as an additional objective

48. There is no doubt that, in pursuit of greater risk sensitivity, parts of the Basel capital adequacy framework have become very complex. While the Committee has always regarded comparability as important (indeed, the rationale for regulatory disclosure requirements is to allow investors and other interested parties to compare banks), simplicity has, to date, not been recognised as an explicit objective. Adopting such an additional objective, in addition to the existing goals noted in Section 3, could help counter the natural tendency towards more complexity within the regulatory framework and, in particular, it could help prevent the regulatory framework from becoming unduly complex without producing commensurate benefits.

49. Internalisation of the notions of risk sensitivity, simplicity and comparability by all the Committee's policy formulation groups could assist in promoting greater simplicity within the Basel standards. One method for doing so is to establish a standardised framework for assessing policy proposals, while they are being developed, from the standpoints of risk sensitivity, simplicity and comparability. Some possible criteria are listed in Annex 1. Under such a framework, each policy proposal could be assessed against a range of criteria, thereby encouraging each policy formulation group to explicitly consider these issues and better inform the Committee on the inevitable trade-offs to be made.

Enhancing disclosure

50. One of the fundamental problems to have emerged in recent years is the difficulty that investors face in comparing risk-weighted assets across banks and over time. The most direct way of tackling this problem would be to improve transparency: that is, to give investors the information they need to make such comparisons, including the drivers of changes in risk-weighted assets, and especially those affecting risk-weighted assets derived from internal models. This issue was recognised when internal models were introduced in a widespread way into Pillar 1 of the capital adequacy framework. At the same time, extensive Pillar 3 (disclosure) requirements were also established. Feedback suggests, however, that in its current form, Pillar 3 has not adequately met the needs of investors and counterparties.

51. There are two basic dimensions to comparability: for a given bank over time, and between banks. Existing disclosure requirements – and proposals to improve them – deal most directly with the

comparability over time of the capital ratios for a given bank. For this type of analysis, disclosures need only highlight how the bank's position has changed relative to its reported position in prior periods. In such an analysis, many factors can be assumed to be constant (or almost so). Yet comparisons between banks are equally important, and can be much more difficult given the significantly increased number of factors that can lead to differences in the reported ratios between banks. Making meaningful improvements to cross-bank comparisons has the potential to materially improve the effectiveness of the capital adequacy framework.

52. Enhanced disclosure also has the advantage that it can be achieved without sacrificing the intended objectives of the capital framework's risk sensitivity. While significant progress has already been made in improving disclosures, further enhancements would boost the comparability of the outcomes from the Basel capital standards. The Committee recently established a working group to review Pillar 3, with a view to making it more effective. In considering how to enhance Pillar 3 disclosures, the Committee will take into account similar initiatives, such as the recent recommendations of the Enhanced Disclosure Task Force (EDTF),¹³ which offered specific ideas for improving the disclosure of the drivers of risk-weighted assets. The EDTF report included disclosure of capital requirements for each method used for calculating risk-weighted assets for credit risk (by Basel asset class and major portfolios within); market risk and operational risk; information on the average probability of default (PD), loss-given-default (LGD) as well as exposure at default (EAD), total risk-weighted assets and average risk weights by Basel asset class; information on key model choices, eg data period, methodology for calculating LGD etc; mapping of internal ratings grades and PD bands to external credit ratings; and a risk-weighted asset flow statement that explains movements in risk-weighted assets over the reporting period for each risk type.

53. These proposals seek to bring to light more detailed information about the inputs and outputs of the capital adequacy calculation. Other types of disclosure might also be of assistance: for example, banks could be asked to regularly disclose the results of applying their models to standardised hypothetical portfolios, thereby providing additional insights into the different modelling choices banks have made. Or they could be asked to disclose both modelled and standardised calculations, which would provide an alternative benchmark against which the modelled outcomes could be compared. Additional data typically collected by supervisors – for example, on model performance – could also be disclosed to improve external understanding of the reliability of modelled risk estimates.

Using additional metrics

54. In a highly complex world in which banks' risks can be estimated only with uncertainty, reliance on a single indicator to assess banks' solvency is unlikely to be a successful strategy, either for supervisors or for investors. Therefore, a broader set of metrics against which banks can be compared could prove valuable.

55. Evidence exists that measures other than regulatory capital can also be useful and robust predictors of serious distress. In this regard, some studies suggest that some simpler metrics performed better than the risk-based measures at distinguishing banks that failed or needed state support during the crisis from those that survived. Viewing capital adequacy through multiple lenses is likely to be more informative than relying on any single measure: indeed, different measures could provide an early warning of distress in differing circumstances. Possible examples of the suite of metrics that could be used to assess bank solvency include risk-based capital ratios, risk-weighted assets calculated under the

¹³ Financial Stability Board, Enhanced Disclosure Task Force, *The risk disclosures of banks*, report presented to the FSB, 29 October 2012, www.financialstabilityboard.org/publications/r_121029.pdf.

standardised approach, capital ratios using market values of equity in the numerator, leverage ratios, risk measures derived from equity volatility, revenue-based leverage ratios (capital/revenue), historical profit volatility, price-to-book ratios, asset growth and the ratio of non-performing assets to total assets.

56. While most potential measures can be produced at low marginal cost, and many are already in the public domain, investors may find it challenging to collate and compare them. As such, there might be benefit if a standardised suite of resilience measures was to be developed, together with a standardised definitions and a disclosure template, in order to help investors and supervisors compare these indicators across banks and over time. Standardised disclosures of this sort may have the potential to improve market discipline, as well as the effectiveness of supervisory review, and they would avoid over-dependence on the risk-based regulatory capital framework as a major indicator of the banking sector's strength at any given time.

Ensuring the effectiveness of the leverage ratio

57. As part of Basel III, the Committee established the leverage ratio to serve as a supplementary measure to the risk-based capital framework. The leverage ratio affords three important benefits within the capital adequacy regime: (i) it constrains the build-up of leverage in the banking sector, which the risk-based regime is not designed to supply, (ii) it reinforces the risk-based requirements with a simple non-risk based "backstop" that provides a floor to the outcome of risk-based capital requirements which provides a protection against model risk¹⁴ and the reduction of capital requirements via the optimistic use of models and parameters, and (iii) it represents a standardised measure that investors and counterparties can use to make comparisons between banks and over time. In addition, many academic studies have established that the leverage ratio is a statistically significant predictor of potential bank failure.

58. Although the leverage ratio will be subject to an appropriate review and calibration in 2017 with a view to migrating it to a Pillar 1 treatment in 2018, banks will be required to disclose a standardised leverage ratio from the beginning of 2015. The Committee is developing a standardised leverage measure and associated disclosure requirements, which will allow comparability across jurisdictions despite underlying differences in accounting standards and seek to ensure comparability across different forms of leverage, eg credit exposure from derivatives relative to on balance sheet loans and bonds. The Committee intends to consult on the calculation methodology and disclosure requirements over the next few months, in order to allow sufficient time for the requirements to be finalised and published, and for banks then to be able to develop the necessary reporting systems. More generally, the Committee will examine the calibration of the leverage ratio relative to the risk-based capital ratio, once the leverage ratio' specification is finalised, to ensure that it will be able to play its intended role as a meaningful support to the risk-based regime within the overall capital framework.

59. Beyond the current proposals, other ideas to further strengthen the benefits of the leverage ratio within the regulatory framework could include:

- adjustments to the design and calibration of the leverage ratio, such as adopting a similar "buffer" structure for the leverage ratio as has been done for the risk-based capital requirements under Basel III; and/or

¹⁴ Model risk refers to the risk that the limitation of models may lead to material divergence between predicted and actual outcomes. This can be due to risk factors not considered in models, backward-looking nature of parameter estimation, potential underestimation of tail risk due to assumptions with respect to probability distributions, and residual uncertainty

- the inclusion of stronger leverage ratio requirements for G-SIBs, so that the leverage ratio maintains its relative strength as a backstop for the most systemically important banks.

Utilising added floors and benchmarks to mitigate the consequences of complexity

60. While progressively seeking to reflect greater risk sensitivity, the capital measures generated by more sophisticated approaches may be prone to model risk. Accordingly, the capital framework already contains a number of floors. For example, banks using advanced approaches for credit risk or operational risk are, for the moment, subject to a floor on their capital requirements that is tied to the Basel I calculation methodology.¹⁵ In the internal ratings-based (IRB) approach to credit risk, the probabilities of default (PDs) for the highest-rated corporate and bank exposures are subject to a floor of 3 basis points.¹⁶ In the case of retail exposures secured by residential properties, the loss-given-default (LGD) is subject to a floor of 10%.¹⁷ These floors are designed to prevent modelled parameters from falling too low, based on favourable (but unsustainable) experience within a given bank's data set. They should, therefore, help to limit the variability of modelling inputs.

61. The Committee's recent analytical work on risk-weighted assets has also demonstrated that risk-weighted assets derived from internal model calculations still display substantial variation, despite floors and the broader validation requirements of the modelling approaches to capital adequacy. Therefore the use of new/additional floors on internal model outputs, based on standardised methods could be considered, in order to constrain the variation in risk-weighted assets and protect against the risks in internal models. For example, the fundamental review of the trading book, which has been the subject of a recent round of consultation, is considering the merits of imposing a standardised approach floor on modelled market risk capital requirements, once the market risk standardised approach has been improved.

62. The concept of tying model-derived capital requirements more closely to the standardised calculations used by the vast majority of (smaller) banks could be expanded to provide additional support for the IRB approach for credit risk and advanced measurement approaches (AMA) for operational risk as well. This could be applied in a number of ways:

- Floors, akin to the current Basel I floor, that would apply to banks' aggregate capital requirements – which would be the higher of the modelled result or a percentage of the standardised approach (the percentage could be 100%, or less);
- Floors, akin to that currently applied to corporate and bank PDs and mortgage LGDs, that would be applied to the parameters used to estimate the capital requirements for individual asset classes or product types – banks would use the higher of their own estimates or the regulatory floors.
- Benchmarks that would not impose a hard floor but would still provide a standardised measure that could be used to evaluate the output from model-based approaches – banks would disclose both measures to supervisors and to investors.

63. The purpose of adding additional floors or benchmarks to the framework would be to (i) constrain the effect of variation in risk-weighted assets derived from IRB/AMA model outputs,

¹⁵ Basel Committee on Banking Supervision, *International convergence of capital measurement and capital standards: A revised framework comprehensive version*, June 2006, paragraphs 45–47.

¹⁶ *Ibid*, paragraph 285.

¹⁷ *Ibid*, paragraph 266.

(ii) provide additional comfort that banks' risks are adequately capitalised, and (iii) make capital ratios more comparable.¹⁸ While the introduction of capital floors may blunt the incentive to develop internal models, banks will still need to develop models for their own risk management and pricing purposes: regulation should not be the sole justification for the development of models by banks.

64. The design, calibration and implications of capital floors would need to be carefully assessed before deciding whether to adopt any additional floors or benchmarks. In particular, it would need to ensure that any new floors do not create adverse effects or incentives; for example, by making comparability more difficult to achieve, creating an unduly mechanistic reliance on external credit ratings, or encouraging arbitrage activity designed to avoid the imposition of the floors.

Reconsidering the linkage between internal and regulatory models

65. Banks' internal risk management models differ in their objectives from those used to calculate regulatory capital. The former are tools to maximise risk-adjusted return to shareholders; they are intended to capture risks consistent with the risk appetite of the bank. The latter seek to estimate tail risks to creditors and to the system as a whole. A model that is suitable for one role may not be entirely so for the other. More broadly, there is a question over whether the objectives of achieving comparability for regulatory capital purposes (under which two banks with identical portfolios would apply the framework's rules and arrive at the same amount of risk-weighted assets) and incorporating best practice in internal risk management practices (under which two banks might use entirely different models to assess risk) are fundamentally compatible.

66. Furthermore, permitting banks to estimate their own inputs into risk-weighted asset calculations provides an incentive to game the system – ie by underestimating risk with the aim of reducing risk-weighted assets. The use test within the Basel framework is intended to make it more difficult for banks to do this. Nevertheless, there may be a case for reconsidering the link between the regulatory and internal models and for refining the use test requirements in order to guard against gaming while preserving the utility of risk management models. In practice, regulatory and risk management models should have aspects in common even where their purposes differ. They should, for example, have similar conceptual foundations and data sources, and diverge only in certain aspects, such as their confidence intervals or time horizons. A refined use test might better specify where the link between internal and regulatory models should be strengthened, and where it might sensibly be severed.

Limiting national discretion and improving supervisory consistency

67. The use of national discretion allows international standards to be better tailored to reflect local conditions. In theory, this should improve comparability and the evenness of the playing field, as the treatment of dissimilar risks is not forced into a "one size fits all" template. National discretions can, for example, smooth the way for global standards to be suitably applied to advanced and emerging economies, taking into account differences in the structure and development of financial systems. In practice, however, the use of national discretions can also impair the comparability of risk-weighted assets across jurisdictions, if supervisors fail to determine the use of national conditions with the same degree of conservatism in mind.

¹⁸ On the flip side, addition of floors can affect the comparability of outcomes in terms of their risk-sensitivity, an example of trade-off between mitigation of consequences of complexity and comparability of outcomes.

68. The Committee is currently undertaking a review of current discretions to assess the need for, and extent of, their use. To the extent national discretions remain necessary, a database of their use could be developed and published as an aid to comparison.

69. The Committee's recent study of risk-weighted assets in both the trading book and the banking book has identified various factors that drive the variation in risk-weighted assets across banks. These studies show that supervisory practices can have a material bearing on the outcomes of capital calculations. These are not specific national discretions given to domestic authorities, but rather the variations in practice that inevitably arise between different supervisory regimes. Of course, these differences cannot, and should not, be fully eliminated – it is reasonable to expect national supervisors to maintain some discretion over their domestic processes to validate and scrutinise banks' internal models. But further work could be undertaken to share experience and ideas with a view to improving the consistency and effectiveness of supervisory activities, thus reducing any undue degree of variation in risk-weighted assets. One promising area of progress would also be to clarify the way jurisdictions assess and validate internal models.

Improving the accessibility of Basel Committee documents

70. A single and readily accessible source of well-structured information would be invaluable for those tasked with enforcing and complying with the regulatory framework. However, following the introduction of Basel III, the complete Basel capital framework is now set out in a range of documents issued at different points in time. Indeed, banks using the most advanced approaches involving internal models still need to complete calculations based on the original Basel I framework introduced 25 years ago. The Committee has initiated a process to consolidate all the standards into a single, accessible, structured set of documents. This will be supplemented by improvements to the Committee's website, designed to make the standards easier to find, navigate and understand.

Addressing factors driving complexity in a more fundamental manner

71. As discussed earlier, today's capital adequacy framework reflects developments in the financial sector over several decades. There are sound reasons why the capital adequacy framework has developed as it has, and any changes will need to be designed so as to preserve the benefits that the framework currently affords. Nevertheless, the Committee is currently reviewing the framework to assess whether the balance between simplicity, comparability and risk sensitivity can be improved. The complete framework is always likely to be – at least in parts – complex, and comparability will always be subject to certain limits. For example, to the extent that supervisors and banks can choose between different calculation approaches, difficulties will continue to be encountered when comparing risk-weighted assets and standards across jurisdictions.

72. The implementation of Basel III has just entered a long phase-in period. Committee members are committed to implementing Basel III framework in full, and the Committee is carrying out a peer review programme to assess how far it is implemented in practice. Nevertheless, as part of its longer-term thinking, the Committee could examine whether there are additional ways to improve the effectiveness of the regulatory framework. These efforts may include addressing the factors driving complexity in a more fundamental manner.

73. For example, in increasing ex ante risk sensitivity and expanding risk coverage, the framework has progressively sought greater alignment of regulatory capital with economic capital. This approach is implicitly premised on the suitability of economic capital as an appropriate measure for regulatory purposes. But the relationship between economic capital and regulatory capital may need re-examination in the light of the recent shift in the focus of regulation and supervision from ensuring the soundness of individual institutions to, additionally, safeguarding the stability of the banking system.

74. In addition, there may be value in re-assessing the relative balance given to each of the three pillars of the Basel framework – minimum capital requirements, the supervisory review process and disclosure. Recent regulatory reforms have focused primarily on strengthening Pillar 1 and, to a lesser extent, Pillar 3. Although a number of steps have been taken to enhance Pillar 2, it has played less of a role in the post-crisis strengthening of the regulatory framework. Whether the current capital framework, when looked at holistically, has the appropriate weighting on each of the three Pillars could therefore be worthy of further consideration.¹⁹

75. A number of fundamentally different approaches to capital adequacy could also be explored in the long term. Examples that by external commentators include:

- *Tangible leverage:* Under such an approach, standards could be set using a single form of capital – tangible equity – and a single measure of risk – tangible assets. Tangible equity is equity as normally defined minus add-ons such as goodwill, minority interests and deferred taxes assets that are of limited value in a crisis. Tangible assets are all assets, minus intangibles. Such an approach is vastly simpler than the current risk-based framework (and indeed the current leverage ratio proposal, which accounts for off-balance sheet business and different accounting standards), but equally it would vastly reduce the ex ante risk sensitivity in the capital framework and places much more importance on effective supervisory practices to maintain bank safety and soundness.
- *Leverage ratio and a standardised approach:* Under such an approach, the regulatory framework would use a leverage ratio and a standardised risk-based approach together, but abandon the use of the internal models approach. This would preserve the “belt and suspenders” approach introduced by Basel III, thus limiting regulatory arbitrage and over-reliance on any single model. It would also substantially simplify the regulatory framework, and make the derivation of bank capital ratios more transparent and understandable for all, although ex ante risk sensitivity would again be reduced.
- *Pre-commitment approaches:* As an alternative to both the standardised approach and modelling approaches, banks could be required to commit to keep capital above a threshold multiple of their measured income volatility. Regulators would set that threshold for all banks in their jurisdiction, forcing them to achieve a trade-off between their return, their capital commitment and the investments they would have to make in risk management to keep income volatility down.

76. As all approaches have specific advantages and disadvantages, the question whether any would enhance the regulatory assessment of capital adequacy would require careful study and analysis. But the Committee recognises the status quo has its own limitations, and that there remains a need to continuously respond to the changing nature of the banking industry. Therefore, while the Committee’s priority remains the full, timely and consistent implementation of the Basel III reforms, it could, over the longer term, consider the possible merits of different approaches to assess whether they could help the Basel framework to better achieve the objectives of an international capital adequacy regime (as described in paragraph 29).

77. Indeed, the complexity of the current framework reflects the way banking has evolved during the past few decades. As it has grown more complex, so has the regulatory framework in response. This being the case, future remedies for complexity may ultimately lie in tackling the fundamental causes of banking complexity – which the simplification of the Basel rules can go only so far in addressing.

¹⁹ On the flip side, more emphasis on Pillar 2 may impact comparability negatively as it is inherently based on supervisory judgement and is institution-specific.

Certainly, some of the more potentially enduring measures for achieving the safety and soundness of banks and banking systems are beyond the direct remit of the Basel Committee. These could include measures to reduce future banking risk and complexity, such as by:

- placing supervisory controls on the pace of development of highly complex and innovative financial instruments;
- restricting activities that are not designed to promote traditional customer-oriented banking business; and
- improving bank resolvability and reducing global and domestic interconnectedness.

6. Questions for feedback

78. The international capital framework has been one of the most significant developments in banking regulation since its introduction 25 years ago. Adequately capitalised banks – and the confidence they instil among investors, depositors, borrowers, bank counterparties and other financial system participants – are the bedrock of a stable financial system. In the aftermath of the financial crisis, the Basel Committee has introduced a number of improvements to the regulatory capital framework that will improve banks' resilience.

79. The capital framework has evolved considerably over time, responding to additional risks and market developments. The Committee continuously evaluates the framework to determine whether scope exists to improve its effectiveness. In response to concerns that the capital framework has become too complex, and that this undue complexity impairs its effectiveness, the Committee has undertaken a review to assess whether the balance between risk sensitivity, simplicity and comparability can be improved. In conducting its review, which is only in its initial stages, the Committee's objective is to investigate ways in which to remove any undue complexity of the capital framework and to improve the comparability of its outcomes, without jeopardising the framework's overall rigour and risk sensitivity. Various ideas are presented in this paper that could potentially be considered in support of this objective. Feedback on the questions posed below will help to inform the Committee's thinking on this critical issue.

- Q1. Does the current framework, with its reliance on the risk-based capital at its core, appropriately balance the objectives set out in paragraph 29?
- Q2. Are there other objectives that should be considered in reviewing the international capital adequacy framework?
- Q3. To what extent does the current capital framework strike the right balance between simplicity, comparability and risk sensitivity, given the costs and benefits that greater risk sensitivity brings?
- Q4. Which of the potential ideas outlined in Section 5 offer the greatest potential benefit in terms of improving the balance between the simplicity, comparability and risk sensitivity of the capital adequacy framework?
- Q5. Are there other ideas and approaches that the Committee should consider?

Annex 1

Potential indicators for the assessment of simplicity, comparability and risk sensitivity

The following indicators could be used as a general guidance when assessing the simplicity, comparability and risk sensitivity of policy measures. The indicators are not intended to be firm rules, but rather illustrative characteristics that would help the Committee and other stakeholders identify policy proposals that contain potentially significant complexity that may not be justified by its benefits.

Potential indicators for assessing simplicity

The following indicators could be used when assessing the simplicity of policy proposals:

- (a) the proposal results in no more than a few calculation approaches, the differences in which are significant enough to justify their use;
- (b) inputs used in any calculation process are simple and observable; the number of (non-observable) parameters required to be estimated is not large;
- (c) incorporation of each of the parameters in the proposal is supported by adequate quantitative analysis that clearly indicates its meaningful contribution to risk sensitivity;
- (d) the proposal does not allow banks to make too many assumptions in the modelling process, and sensitivity of the results to the assumptions is low;
- (e) the level of difficulty in understanding the details of the proposal, the related capital calculation process and its limitations is low (for both banks and supervisors);
- (f) implementation costs (both for banks and supervisors) including cost of collection of data and software and analytical support required are not onerous, and data are easily available;
- (g) supervisors can readily enforce the proposed policy;
- (h) the proposal is easy to communicate to stakeholders in a consistent manner; and
- (i) the proposal is clearly expressed in straightforward, precise and unambiguous language.

Potential indicators for assessing comparability

The following indicators could be used when assessing the comparability generated by policy proposals:

- (a) the proposal results in similar requirements for similar risks, and distinguishes between materially different levels of risk between banks and over time;
- (b) the proposal can be adopted among Committee member jurisdictions in a consistent manner;
- (c) the proposal minimises the need for national discretion; and
- (d) the proposal requires appropriate disclosures to support understanding of the policy outcomes.

Potential indicators for assessing risk sensitivity

The following indicators could be used when assessing the risk sensitivity of policy measures:

- (a) the proposal accounts for different types and sources of risk;
- (b) the proposal differentiates in its response to different types and levels of risk;
- (c) the risk of under-capitalisation is low;
- (d) the risk of regulatory arbitrage is low; and
- (e) model risk is low.