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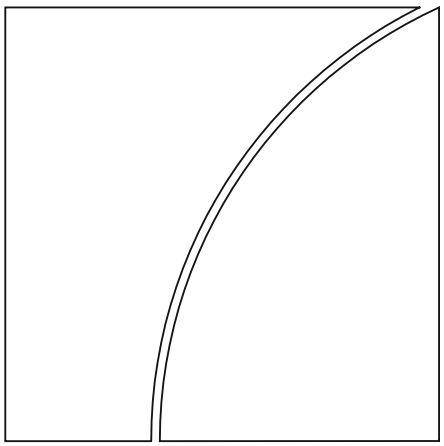

Convergence in the prudential regulation of banks – what is missing?

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Contents

Executive summary 4

Section 1 – Introduction 6

Section 2 – Asset valuations and capital measurement 7

- Overview 7
- Loan valuations and accounting standards 8
- Measurement of non-performing exposures (NPEs) 9
- Loan valuations and prudential backstops 11
- Other hard-to-value assets – accounting and prudential considerations 12

Section 3 – Pillar 1 requirements of the Basel framework 13

Section 4 – Pillar 2 requirements of the Basel framework 15

- Stress testing 17

Section 5 – Conclusion 18

References 20

Convergence in the prudential regulation of banks – what is missing?[1]

Executive summary

Regulatory divergence, or differences in how jurisdictions apply Basel III and other global banking standards, is a significant source of market fragmentation. For banks that operate in several jurisdictions, such variations create an uneven playing field and may hinder market entry, reduce efficiency and impede global risk-sharing among a broader array of market participants.

Global standard setters, such as the Basel Committee on Banking Supervision (BCBS), promote a level playing field for internationally active banks. A full, timely and consistent application of the Basel III framework bolsters the stability of national and global financial systems and promotes the comparability of prudential metrics across jurisdictions. Nevertheless, country-specific rules may still be justified as a means of strengthening the resilience of the domestic economy.

Following the 2007–09 Great Financial Crisis, the BCBS and the Financial Stability Board (FSB) have adopted programmes to assess how their members have implemented the post-crisis reforms. Such initiatives have helped to align domestic regulations with the agreed reforms across jurisdictions. However, these studies have also found some inconsistencies in implementation, including differences in when and how international standards were adopted.

Under Japan's presidency of the G20 in 2019, the FSB investigated whether regulatory policies and supervisory practices have led to market fragmentation and considered tools to address the issue. The FSB report outlined ways of mitigating the negative effects of market fragmentation from a market efficiency and financial stability perspective. It recommended taking into account the fragmentary effects of regulation during the standard-setting process and the implementation monitoring programmes of standard setters. It also suggested that authorities should enhance communication and information-sharing between themselves.

This paper leverages off the FSB's report and identifies specific sources of regulatory divergence in the banking sector. The findings are based upon a synthesis of earlier publications of the Financial Stability Institute that identified the methods that authorities use to implement international standards and to develop policies in areas for which no sufficiently prescriptive guidance exists.

An overarching observation is that the full, timely and consistent application of Basel III is a necessary but not sufficient condition in harmonising the prudential oversight of internationally active banks. While variations in Basel III implementation may increase the scope for market fragmentation, there are fundamental causes of regulatory divergence that warrant further scrutiny.

Domestic regulations, even when assessed as compliant with Basel standards, may still lead to different prudential outcomes across jurisdictions. This can be attributed to at least three factors: (i) varying practices in asset valuations that may impact the measurement of banks' regulatory capital; (ii) differences in the scope of application of Pillar 1 across jurisdictions; and (iii) distinct implementations or interpretations of Pillar 2 provisions that may lead to differing requirements.

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Differences in how banks calculate regulatory capital are a key source of regulatory divergence. Regulatory capital (subject to certain adjustments) is based on the difference between the value of a bank's assets and liabilities. As liabilities are mostly held at amortised cost, asset valuations materially impact a bank's reported capital figure. As banks are highly leveraged, even small changes in asset values can have a disproportionate effect on capital. Thus, heterogeneous asset valuation practices may materially affect the consistency of bank solvency assessments across jurisdictions, as the regulatory capital figure is the starting point for assessing compliance with Pillars 1 and 2 of the Basel framework.

The valuation of loans drives the reported capital number of banks. The loan valuation process impacts earnings and common equity Tier 1 (CET1), via loan loss provisioning. The magnitude of provisions is affected by how banks measure losses on non-performing exposures (NPEs), for which there is no single accounting or prudential standard. In addition, the introduction of expected loss (EL) provisioning significantly expands the scope for judgment and dependency on internal models. Furthermore, some authorities have implemented country-specific prudential backstops to accounting provisions, which can also undermine the comparability of reported regulatory capital across jurisdictions.

Other hard-to-value assets can also affect a bank's capital figure. Accounting rules require certain assets to be measured at fair value (FV), with the unrealised gains or losses impacting CET1 capital. Some assets measured at FV, such as Level 2 and 3 assets, are not traded in an active market, necessitating modelling assumptions. The assumption dependent nature of these valuations can lead to varied practices.

Differences in the scope of application of Pillar 1 may lead to additional sources of regulatory fragmentation. Variations in Pillar 1 requirements stem from differences in the timing and substance of the implementation of international standards. The lack of a uniformly agreed definition for an internationally active bank is another cause of discrepancy, as is the adoption of country-specific rules for banks not subject to the Basel framework.

As for Pillar 2, it is a principles-based standard that is intended to accommodate a range of approaches, which, in turn, can lead to varied prudential outcomes. Jurisdictions require a diverse set of banks to submit a self-assessment of their own capital adequacy, setting the context for the supervisory review process. Authorities also apply various approaches to determine capital add-ons and stress-testing exercises, including where the add-ons, if applied, belong in a bank's capital hierarchy. Finally, supervisory expectations for liquidity add-ons are not specified in Pillar 2.

It is neither feasible nor desirable to eliminate all regulatory discrepancies across jurisdictions. The Basel framework consists of minimum standards that should be applied, at least, to internationally active banks, and jurisdictions are free – indeed, encouraged – to apply higher standards if warranted for their banking systems (ie gold-plating). The standards can, therefore, co-exist with domestic rules aimed at adjusting the prudential regime to the specificities of their national financial systems.

There could, however, be benefits in achieving more consistent practices across jurisdictions. On the first source of discrepancies, there is scope to reduce divergent practices in the measurement of NPEs, Level 2/3 assets and performing loans under EL provisioning. One potential way of addressing such variability is through the design of prudential backstops. On the second and third sources of discrepancies – different scope of application of the Basel framework and the implementation and interpretation of Pillar 2 requirements – there is room to analyse which areas may be most prone to different outcomes and whether these are justified to accommodate national specificities.

There are a variety of instruments that can be used to address unwarranted regulatory fragmentation. The BCBS evaluates the implementation of its standards in all member jurisdictions, and it has already issued guidance on elements of the prudential regime where significant discrepancies exist. Additional policy work may be considered in areas where excessive heterogeneity remains, such as those relating to the measurement of NPEs and other hard-to-value assets that are consequential in the calculation of regulatory capital. Further guidance on the scope of application of the Basel framework and greater clarity on certain features of Pillar 2 can also promote more regulatory convergence.

Section 1 – Introduction

1. **Following the 2007–09 Great Financial Crisis (GFC) the G20 Leaders agreed to strengthen the rules governing the global banking system.** The centrepiece of these reforms was the introduction of Basel III, which significantly enhanced existing risk-based capital rules and imposed new requirements on leverage, liquidity and large exposures. Other measures included more intensive supervision; resolution regimes and resolvability requirements for systemically important firms; and enhanced accounting standards to prompt banks to recognise credit losses earlier in the credit cycle.

2. **To ensure that the G20 commitments were being implemented, global standard-setting bodies emphasised the need for full, timely and consistent adoption and implementation of the Basel standards for internationally active banks.** In this context, both the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) established robust programmes to monitor and assess the implementation of applicable prudential standards across member jurisdictions.[2]

3. **Despite these significant efforts, differences remain in national regulatory policies and supervisory practices for internationally active banks.** These differences, referred to as regulatory-driven market fragmentation, can undermine the comparability and usefulness of key prudential ratios across banks and jurisdictions. For internationally active banks, fragmented markets may also discourage or prevent them from undertaking some cross-border activities. This, in turn, may reduce the efficiency of the global financial system and its ability to facilitate risk-sharing across jurisdictions.

4. **In some cases, divergent prudential frameworks may be warranted to address domestic considerations.** There are at least two sets of policy considerations that justify varied prudential regimes.[3] First, authorities may impose higher prudential standards (ie gold-plating) than the applicable international norms to strengthen resilience in the domestic economy. Second, the Basel standards are intended for internationally active banks, and all jurisdictions supervise some banks that are not internationally active. In these circumstances, authorities have the flexibility to impose prudential standards that are proportionate to a bank's risk profile, size and complexity.

5. **Under the auspices of Japan's 2019 presidency of the G20, the FSB examined issues around market fragmentation.** The FSB report[4] focused on areas where reducing market fragmentation can have a beneficial impact on financial stability or enhance market efficiency without undermining financial stability. The report looks at some examples of financial activities where supervisory practices and regulatory policies may give rise to market fragmentation and discusses potential trade-offs that authorities have considered between the benefits of increased cross-border activity and a need to tailor domestic regulatory frameworks to local conditions and mandates. Some types of market fragmentation might stem from measures to strengthen domestic resilience, while other types may reduce the resilience of both global and domestic financial systems.

6. **The FSB report identified a number of possible mechanisms and approaches to mitigate the negative effects of fragmentation due to divergent regulatory policies or supervisory practices.** In this context, the report outlined specific actions, such as considering the issue of market fragmentation more prominently and systemically during the standard-setting process; incorporating market

[2] See FSB (2011) on the allocation of responsibilities with respect to the implementation monitoring programmes of the FSB and the various standard-setting bodies, including the BCBS.

[3] See Claessens (2019) for an analysis on how financial market fragmentation relates to financial stability.

[4] See FSB (2019).

fragmentation as part of the implementation monitoring programme of the FSB and standard-setting bodies; and enhancing cross-border communication and cooperation.

7. **This paper builds on the FSB's work and outlines relevant sources of divergence in prudential regulation.**[5] The findings draw on previous FSI publications that document the range of approaches that authorities use to measure assets and to implement key prudential and supervisory review requirements of the Basel framework.[6] Section 2 outlines the divergent methods applied across jurisdictions to value bank assets and explains their effects on banks' regulatory capital. Sections 3 and 4 describe the range of approaches used across countries in adopting Pillars 1 and 2 of the Basel framework and outline some of the reasons for these differences. Section 5 concludes.

Section 2 – Asset valuations and capital measurement

Overview

8. **A bank's reported level of regulatory capital is a key metric used by supervisors and market participants to assess its financial health.** Supervisors use the regulatory capital figure (in either the numerator or denominator) to assess a bank's compliance with the minimum risk-based capital, leverage and large exposure requirements under Pillar 1 of the Basel framework. This is also the variable used to determine capital add-ons under Pillar 2. The regulatory capital number also has macroeconomic implications as it has repercussions for a bank's borrowing capacity and the volume of loans it can originate at any given point in time.

9. **How regulatory capital is measured is, therefore, a key area of supervisory focus.** Capital is a residual. It is the difference between the value of assets and liabilities, both of which are driven by rules prescribed by applicable accounting and prudential standards. In general, the vast majority of bank liabilities are carried at amortised cost; therefore, the value assigned to bank assets, which are subject to multiple valuation rules, can have a significant influence on the reported level of regulatory capital.

10. **The measurement of loans, as they comprise the largest asset class in many banks and banking systems, often drive the reported capital number of banks.** While loans are typically carried at amortised cost, applicable accounting rules require banks to reduce the loan's carrying value to its estimated recoverable amount, if it does not expect to receive the full amount due. These valuation adjustments are taken through the loan loss provisioning process, which, in turn, affects a bank's net income and, hence, regulatory capital. This process is inherently judgmental and requires banks in each jurisdiction to apply various principles-based accounting rules, sometimes in concert with country-specific prudential requirements on credit loss provisioning, leading to different outcomes across countries.

11. **Other hard-to-value assets that are subject to fair value accounting rules can also impact a bank's capital figure.** Accounting rules typically require certain assets that are not carried at amortised cost (such as trading assets) to be held at fair value (FV), with the unrealised gains (or losses) eventually flowing through to regulatory capital. The challenge with FV accounting arises when the underlying assets are not traded in an active and liquid market. In these cases, banks and supervisors need to exercise various degrees of judgment in determining fair market value for all such assets.

[5] Heterogeneous supervisory practices, such as those related to the validation of internal models, are another potential source of divergence. This paper, however, focuses primarily on issues related to regulatory-driven market fragmentation.

[6] See Restoy (2019) for further discussion of regulation and market fragmentation.

Loan valuations and accounting standards

12. **There is no single, global accounting standard for the loan loss provisioning process.** Currently, several accounting standards are used for this purpose, which can lead to different provisioning outcomes, given the same set of facts and circumstances. While some differences stem from the discretionary nature of the loan valuation process, other disparities can be attributed to the different accounting standards that are in use. These include International Accounting Standards (IAS) 39, International Financial Reporting Standards (IFRS) 9 and national accounting standards, such as in the United States, under the current expected credit loss (CECL) model prescribed by the Financial Accounting Standards Board. The latter two standards, in particular, are complex, significantly expanding the scope for judgment.

13. **Under IAS 39, banks are required to estimate loan loss provisions only if there is objective evidence of credit impairment as of the balance sheet reporting date.** IAS 39 is referred to as an "incurred loss" model because a loss event must have occurred at the reporting date in order to trigger loan loss provisions. This standard was viewed by some[7] as exacerbating the GFC's severity, because it constrained the ability of banks to recognise loan loss provisions in advance of credit impairment. While IAS 39 has been superseded by IFRS 9, a number of jurisdictions remain under this standard (or its local equivalent).

14. **IFRS 9 became effective on 1 January 2018 and is a significant improvement on IAS 39.** IFRS 9 addresses two of the major shortcomings of IAS 39. First, it requires entities to calculate provisions based on expected rather than incurred losses, lowering the threshold that prompts loan loss provisions. Second, it requires entities to consider future events/forecasts in determining credit loss expectations. Jurisdictions in the EU and several other countries have adopted this standard.

15. **Other jurisdictions operate under national standards, including the United States.** Until 2020, US entities will follow an incurred loss approach to setting provisions, which is similar to IAS 39. Starting in 2020, certain US entities will migrate to the CECL model, which is comparable to, but has differences with, IFRS 9. The main difference between CECL and IFRS 9 is that the former requires banks to book lifetime expected credit losses for all loans at credit origination; in contrast, IFRS 9 requires lifetime expected losses only when the credit exposure has experienced a significant increase in credit risk. Table 1 below summarises the difference between IAS 39, IFRS 9 and CECL.

Comparing provisions under IAS 39, IFRS 9 and US CECL — Table 1

IAS 39	**Performing loans** Minimal		**Impaired loans** **Impairments:** lifetime incurred and expected loss
IFRS 9	**Stage 1** Performing loans **Impairment:** 12-month expected loss	**Stage 2** Underperforming loans **Impairment:** lifetime expected loss	**Stage 3** Non-performing loans **Impairments:** lifetime incurred and expected loss
CECL (US GAAP)	**All lifetime expected credit losses recognised on day 1**		

Sources: Barclays, IASB, US GAAP, FSI analysis.

[7] See Financial Stability Forum (2009). The Financial Stability Forum was reconstituted as the Financial Stability Board in April 2009.

16. **The expected loss provisioning standards under both IFRS 9 and CECL are welcome developments in that they require banks to make provisions earlier in the credit cycle.** This conceptual shift has long been supported by supervisors and it should lead to the recognition of more timely provisions, as compared with the incurred loss model. From the viewpoint of financial statement transparency, both IFRS 9 and CECL make the valuation of loans more informative by incorporating future expected losses into the valuation estimates, helping to mitigate the excessive procyclicality associated with the incurred loss provisioning methodology.

17. **At the same time, both standards are complex and significantly expand the scope for judgment.** The judgments required under IFRS 9 and CECL exceed the discretion permitted for banks that are approved to calculate regulatory capital under the advanced internal ratings-based approaches (A-IRB) to credit risk capital measurement.[8] This, in turn, raises concerns about unsubstantiated divergence in provisioning outcomes across banks and jurisdictions, given the same set of facts and circumstances.[9] Table 2 compares the modelling parameters/constraints under the IRB approaches to credit risk capital measurement with IFRS 9 and CECL. The table indicates that the implementation of IFRS 9 and CECL demands a greater degree of discretion than is permitted even for A-IRB banks.

Modelling parameters under IRB vs IFRS 9 and CECL — Table 2

Portfolio/modelling parameters	Basel III IRB – credit RWA	IFRS 9	CECL
Exposures to banks and financial institutions	A-IRB not allowed	no explicit constraints in the use of models in calculating expected loss– all banks	
Large and mid-sized corporates	A-IRB not allowed		
Equities	IRB approaches not allowed		
PD time horizon for unimpaired portfolios	12 months	Stage 1: 12 months Stage 2: lifetime	All loans lifetime
PD input floors	Corporate: 5 bp Retail: 5–10 bp	No input floors for PD or LGD – all banks	
LGD input floors: A-IRB banks	Corporate unsecured: 25 bp Corporate secured: 0–15% Retail unsecured: 30–50%		
Overall supervisory floor	72.5% of standardised RWA	No floor	

Note: Both IFRS 9 and CECL contain principles that guide the measurement process, which, in turn, requires the exercise of judgment.

Measurement of non-performing exposures (NPEs)

18. **Regardless of the accounting standard applied, loans that are classified as impaired or non-performing typically generate the largest volume of provisions, which is highly dependent on the value assigned to collateral.** This is because an NPE is at or near default, so that the value assigned to collateral drives the level of required provisions. Unless collateral is highly liquid and can be immediately accessed, the market value of collateral can be difficult to estimate accurately.

[8] See Restoy and Zamil (2017) and (2018) for further details.

[9] In view of the complexity of, and the significant judgment involved in, the adoption of expected loss provisioning and to foster high-quality implementation, the BCBS issued supervisory guidance on credit risk and accounting for expected credit losses. See BCBS (2015) for further details.

19. **The valuation of collateral that supports NPEs depends heavily on assumptions.** While accounting standards do not prescribe rules for valuing collateral, they do require firms to consider, in the valuation process, the time and costs needed to access and liquidate collateral (eg the net present value (NPV) concept). These assessments are critical in jurisdictions where the legal-foreclosure framework results in a lengthy time period for creditors to seize collateral. Table 3 illustrates the significant change to the value of collateral when the estimated time horizon for realising the collateral is lengthened from two to eight years. The example shows that the estimated value of collateral falls by 30% and the required provisions more than double for the longer time horizon. Unless the time required to access and liquidate collateral is realistically factored into the NPV analysis, it can materially understate the requisite level of provisions and overstate reported regulatory capital.

Sensitivity of changes in collateral values to changes in time estimates Table 3

Collateral valuation – sale in two years		**Collateral valuation – sale in eight years**	
Current book value	100	Current book value	100
Physical collateral (appraised value)	100	Physical collateral (appraised value)	100
Foreclosure costs and cost to sell at 5% of collateral	5	Foreclosure costs and cost to sell at 5% of collateral	5
Estimated value of physical collateral	95	Estimated value of physical collateral	95
Original interest rate	6%	Original interest rate	6%
Present value of estimated recovery: assume two years, discounted at 6%	85	Present value of estimated recovery: assume eight years, discounted at 6%	60
Required provisions	**15**	**Required provisions**	**40**

Source: Baudino et al (2018).

20. **While the BCBS has issued guidance on harmonising NPE identification frameworks, there is no comparable international regulatory guidance on NPE measurement.** In April 2017, the BCBS published guidance on the prudential treatment of problem assets.[10] This provides harmonised definitions for non-performing and forborne exposures, including entry and exit criteria. As for NPE measurement, in the absence of international guidance, an earlier FSI publication[11] revealed that NPE measurement practices vary significantly across jurisdictions. Variations can be attributed to a range of factors, including differences in whether accounting or prudential rules or a combination of the two are used to set provisioning requirements on NPEs; variations in the methods used to value collateral, including disparities in the time required to take possession of collateral; discrepancies in the regulatory treatment of the accrual of interest income on NPEs; and differences in asset write-off requirements.

21. **The use of multiple and complex accounting standards, combined with divergent approaches used in the NPE measurement process affects regulatory capital.** Of the three standards, IAS 39 demands the least amount of required provisions due to the imposition of a "loss event" threshold to trigger provisioning requirements. When the United States migrates to CECL, disparities with IFRS 9 will persist, even though both models require provisions to be based on expected credit losses. This is because CECL requires lifetime expected credit losses to be recognised on day 1, while IFRS 9 imposes lifetime

[10] BCBS (2017a).

[11] According to Baudino et al (2018), NPE measurement practices vary considerably based on a stocktake of 11 Asian, 10 Latin American and Caribbean countries, the European Union countries (that are supervised by the European Central Bank) and the United States. In this context, some jurisdictions impose regulatory prescribed haircuts to value collateral, while others follow accounting standards that require banks to take a net present value approach (eg to consider the time and costs involved in liquidating collateral). These two approaches are conceptually different and can materially impact provisioning levels. In addition, some jurisdictions require banks to place NPE exposures on non-accrual status, while others allow the accrual of interest on an NPE, which also affects provisioning outcomes.

losses on only a subset of exposures (eg stages 2 and 3). The judgmental nature of the net present value calculation that underlies the collateral valuation process, particularly for NPEs, can further accentuate divergent provisioning outcomes, thus resulting in different calculations for regulatory capital.

Loan valuations and prudential backstops

22. **When the only provisions that are recognised in the profit and loss statement of banks are accounting provisions, prudential authorities sometimes require some form of a regulatory backstop.** When prudential authorities have no powers to override the accounting standards, backstops can ensure that prudential provisioning considerations are taken into account, at least, in the calculation of regulatory capital.

23. **One such internationally agreed prudential backstop, referred to as the regulatory expected loss (EL), is applicable for banks that are approved to use internal models for credit risk measurement.** Under this approach, banks that are allowed to use their own internal models must calculate a figure for regulatory EL provisions according to a specified, globally harmonised methodology. This amount is then compared with their actual accounting provisions and, if the regulatory EL calculation is greater than the amount of accounting provisions held, the difference is deducted from regulatory capital. This framework has allowed prudential authorities to impose an expected loss provisioning regime (based on the regulatory EL calculation) when accounting standards remained under an incurred loss approach under IAS 39, at least in the calculation of regulatory capital.

24. **The regulatory EL provisioning backstop is, however, prone to model risk and its parameters may no longer be fit for purpose now that accounting standards have shifted to expected loss provisioning.** It is important to consider that the contours of the regulatory EL backstop were developed under Basel II, when accounting provisions were calculated based on incurred losses. Table 4 below illustrates the different modelling parameters used in calculating regulatory EL, IFRS 9 and CECL. These differences cast some doubt on whether the regulatory EL measure can act as an effective backstop in the new environment, since the time horizon for the probability of default under both IFRS 9 and CECL is *more* conservative than the regulatory EL measure.

Comparison of regulatory EL backstop, IFRS 9 and CECL modelling inputs Table 4

Modelling inputs	Basel II regulatory EL backstop	IFRS 9	CECL
Probability of default (PD)	Through the cycle	Point-in-time	Point-in-time
Time horizon (PD)	12 months for all loans	12 months for Stage 1 loans Lifetime for Stage 2 and 3 loans	Lifetime losses for all loans
Loss-given-default (LGD)	Downturn; fixed LGDs for foundations IRB	Point-in-time	Point-in-time
Discount rate	Weighted average cost of capital	Effective interest rate	Effective interest rate

25. **Some jurisdictions have also developed and imposed prudential backstops for banks under the standardised approach to credit risk capital measurement.** Such backstops, which are common in several Asian[12] and some Latin American countries, vary in terms of design, scope and prescriptiveness. The bespoke nature of such backstops adds an additional layer of variability in provisioning outcomes, thus impacting the reported level of regulatory capital.

26. **Where countries have recently experienced high levels of problem assets, some authorities have imposed prudential backstops to deal with NPEs.** Following the GFC, some European countries are still in the process of trying to resolve legacy NPEs. In response, the European Central Bank has issued non-binding supervisory expectations with respect to prudential provisions for uncollateralised and collateralised NPEs (ECB (2018)). Subsequently, the European Union amended its capital requirements regulation[13] to impose a minimum loss coverage for NPEs as a Pillar 1 requirement.

Other hard-to-value assets – accounting and prudential considerations

27. **Accounting standards require certain financial instruments to be carried at fair value, with the unrealised gains and losses eventually affecting a bank's common equity Tier 1 (CET1) capital.** These include trading exposures that are carried at fair value, with any changes in value (realised or unrealised) directly impacting banks' profit and loss statements. They also include financial instruments that are classified as "available for sale" (US GAAP) or "fair value through other comprehensive income" (IFRS), whose fair value changes are reflected as a component of equity. In both cases, the Basel standards permit the unrealised gains and losses from all such exposures to count towards an institution's reported CET1 figure.

28. **At a conceptual level, the application of fair value accounting rules to certain bank assets provides useful information to banks, market participants and supervisors.** This is certainly true for financial instruments that are traded in an active and liquid market, where underlying market prices are readily verifiable. Prudential concerns may arise when the price discovery of "fair value" is contingent on a bank's assumptions.

29. **Fair value measurement is an area where both IFRS and US GAAP generally converge, with both standards setting a three-level fair value hierarchy based on the inputs used to measure fair value.** Level 1 inputs are considered the highest priority and are based on unadjusted inputs from quoted prices for identical assets and liabilities in an active market. Level 2 inputs are other than quoted market prices included within Level 1 that are observable either directly (eg as prices) or indirectly (eg derived from prices). Level 3 inputs are unobservable inputs for the asset or liability and reflect the bank's own assumptions based on the best available information.

30. **From a prudential perspective, all Level 3 and (certain) Level 2 exposures warrant heightened supervisory scrutiny.** Given that such exposures are either wholly (Level 3) or partially (Level 2) measured based on internal bank assumptions, supervisors should approach their assessment of the underlying assumptions with a sufficient degree of professional scepticism, particularly since the estimated unrealised, FV gains (and losses) on all such instruments immediately impact a bank's reported CET1.

31. **In the absence of a robust supervisory challenge, aggressive or unsupported valuation assumptions by bank management can undermine the reliability of reported regulatory capital measures and, thus, become a source of market fragmentation.** Table 5 indicates the materiality of Level 2 and 3 asset holdings of 23 reporting global systemically important banks (G-SIBs), in relation to their CET1 capital figure. In particular, the median ratio for the 23 reporting G-SIBs suggests that a 10%

[12] See Restoy and Zamil (2017) for further details.

[13] See the EU Regulation 2019/630, which amends the Capital Requirements Regulation (Regulation 575/2013).

decline in the estimated FV of their aggregate Level 2 and 3 asset holdings would eliminate half of their CET 1 capital.

Level 2/3 asset holdings of 23 G-SIBs as of end-2018 Table 5

Ratio	Ratio range for 23 G-SIBs	Median ratio for 23 G-SIBs
Level 2+3 assets as % of CET1 capital	154–1,077%	515%

Note: the information above is based on end-2018 data for 23 G-SIBs as reported in SNL financial. Information on seven G-SIBs domiciled in China and Japan was not available.

32. **So that standards are consistently applied across jurisdictions, the BCBS has issued supervisory guidance for assessing banks' financial instrument fair value practices.** The guidance, issued in the midst of the GFC, includes 10 principles covering valuation governance and controls, risk management and reporting for valuation, and supervisory assessment of valuation practices. Given the relevance of these assets in the portfolios of some banks, supervisors could consider whether sufficient resources are being allocated to assessing a bank's compliance with these principles. At the same time, there is merit in considering whether regulatory-driven approaches – such as supervisory-imposed haircuts or other forms of prudential backstops – might be warranted, to ensure that a prudent valuation is considered in the calculation of regulatory capital.

Section 3 – Pillar 1 requirements of the Basel framework

33. **Variations in Pillar 1 requirements, such as quantitative capital and liquidity ratios, may be caused by differences in the timing, substance and scope of application of these requirements.** As a result, banks with similar systemic relevance and risk profile that operate in distinct jurisdictions may have to comply with fundamentally different minimum prudential requirements. Therefore, differences in the capital adequacy and liquidity ratios of these banks may be associated with differences in the domestic implementation of international standards.

34. **Differences in the timing of implementation in relation to the internationally agreed timeline create an uneven playing field.** According to a recent progress report on the adoption of the Basel regulatory framework (BCBS (2019c)), BCBS member jurisdictions have made progress in the adoption of most standards. However, some challenges remain. In particular, a number of jurisdictions have not met the agreed timelines for specific standards such as the Net Stable Funding Ratio and the large exposure framework. When this is the case, banks headquartered in jurisdictions that are not following the internationally agreed timeline have a temporary competitive advantage over those that have to meet these particular requirements.

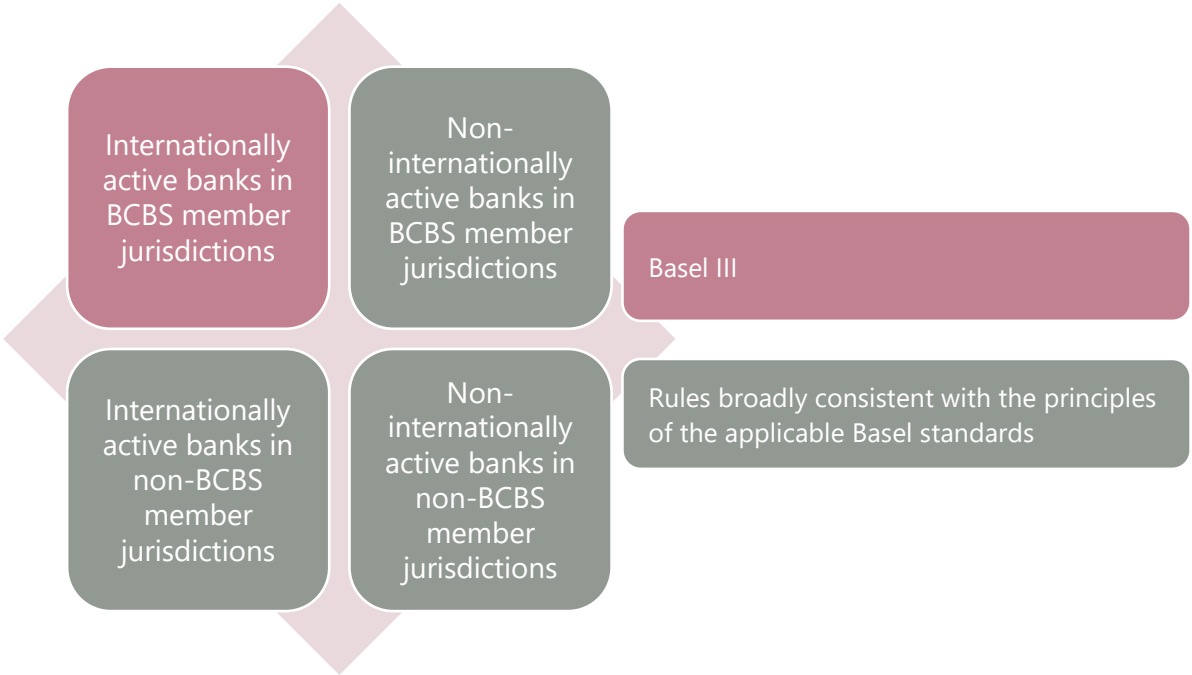
35. **Deviations in the domestic implementation of international standards are another major source of regulatory inconsistency for internationally active banks.** This is typically the outcome when financial authorities adopt more restrictive (ie gold-plated) or more lenient requirements, reflecting domestic priorities, in order to achieve policy objectives in areas such as financial stability or competition. In other cases, the transposition of international standards into domestic laws involves going through complex and lengthy legislative processes, in which idiosyncratic adjustments may potentially be made to the internationally agreed principles. In either case, jurisdictions are likely to receive a negative assessment as a part of the BCBS's Regulatory Consistency Assessment Programme (RCAP) if such adjustments result in domestic standards being less stringent than the minimum international requirements.

36. **Disparities in the scope of application of Pillar 1 requirements, which are intended for internationally active banks, are a cause of regulatory divergence.** As there is no commonly agreed definition of an internationally active bank, each jurisdiction is free to apply its own interpretation. In some countries, a bank is considered internationally active if its size or cross-border activities exceed a certain threshold. In others, a bank is deemed internationally active if it has branches and subsidiaries in foreign countries. These differences in interpretation influence the selection of banks that are subject to Pillar 1 requirements.

37. **BCBS standards constitute minimum requirements and BCBS members may decide to go beyond them, which includes expanding the scope of application to banks that are not internationally active.** This is the case, for example, in the European Union, where, in general, quantitative capital and liquidity requirements are applied to all banks, and not limited solely to those classified as internationally active.

38. **However, in most BCBS jurisdictions, non-internationally active banks are subject to tailored requirements.** Since countries differ in their definitions of "internationally active", the scope of banks subject to tailored prudential requirements can vary substantially across jurisdictions.[14] In other words, banks with the same business model and size may be considered internationally active in one jurisdiction and not in another and, as a result, may or may not be subject to Pillar 1 requirements that are aligned with international standards.

Figure 1: Scope of application of Basel standards in BCBS and non-BCBS jurisdictions



39. **How the proportionality principle is applied varies significantly among BCBS member jurisdictions.** There are differences in the criteria used to differentiate institutions (eg size, risk profile, international activity, trading volume), the scope of requirements that are subject to tailoring (eg Pillar 1 requirements in general, specific requirements such as the market risk framework) and the method used to tailor prudential requirements (eg exemptions, simplified versions of international standards).

[14] According to Castro Carvalho et al (2017), the size threshold used by selected jurisdictions to define the scope of internationally active banks, either explicitly or implicitly when characteristics other than size are used, ranges from EUR 14.5 billion to EUR 226.8 billion.

Furthermore, some countries use a tiering approach, by which banks are grouped into several classes, and these categories are used as the basis for differentiating requirements; others establish tailored criteria for the application of specific requirements for a subset of prudential standards, such as disclosure requirements, liquidity ratios, large exposure limits and market risk.[15]

40. **Most non-BCBS member jurisdictions have implemented standards that are broadly consistent with the principles of the applicable Basel standards.** Although these jurisdictions are under no commitment to implement the Basel framework, most have adopted at least some elements of one of the versions of the Basel standards.[16] In most of these jurisdictions, banks' business models tend to be less complex than those of large internationally active banks. Requirements are thus typically tailored to domestic conditions. In many cases, this results in smaller and less complex institutions being subject to simpler, less risk-sensitive but often more stringent requirements.[17] The proportionality approaches taken range from exempting a subset of banks from specific standards to applying a single simplified framework to all the banks in the financial system. Many jurisdictions have also adopted domestic rules, in lieu of imposing the applicable Basel standards.[18]

Section 4 – Pillar 2 requirements of the Basel framework

41. **Actual capital and liquidity requirements of banks are determined by the combination of minimum Pillar 1 rules and Pillar 2 add-ons.** The goal of the Pillar 2 supervisory review process is to ensure that banks have adequate capital and liquidity to support all the risks in their business. In particular, Pillar 2 seeks to ensure that risk management and internal controls at each bank are aligned with its risk characteristics and that the levels of capital and liquidity held are commensurate with its overall risk profile. Therefore, Pillar 1 can be effective only if it is supported by strong and effective implementation of Pillar 2.

42. **While minimum Pillar 1 capital and liquidity requirements are clearly prescribed in the Basel standards, the framework for Pillar 2 is principles-based.** The Pillar 2 framework is based on four key principles. Principle 1 requires banks to have a process that assesses their overall capital adequacy in relation to their risk characteristics, as well as a strategy for maintaining their capital levels. The remaining principles apply to supervisors and cover: the supervisory review of a bank's internal capital adequacy

[15] According to BCBS (2019a), over 85% of the surveyed BCBS member jurisdictions apply a proportionality regime to a subset of banks. In those cases, the most-cited determinants used for proportionality thresholds relate to balance sheet metrics (over 60% of the respondents) and business models (about 45% of the respondents). In addition, the areas where a proportionality regime is more frequently applied are disclosure (about 79% of the respondents), capital requirements (75% of the respondents) and liquidity requirements (almost 60% of the respondents).

[16] Although there is no requirement for non-BCBS member jurisdictions to implement the Basel standards, the Core Principles for Effective Banking Supervision are relevant for all banks and jurisdictions around the world. Notably, according to Core Principle 16 "the supervisor sets prudent and appropriate capital adequacy requirements for banks that reflect the risks undertaken by, and presented by, a bank in the context of the markets and macroeconomic conditions in which it operates."

[17] For example, Hohl et al (2018) identify a number of non-BCBS jurisdictions that exempt all or a subset of banks from the market risk capital rules, while simultaneously requiring higher minimum risk-based capital requirements than do the applicable Basel standards. Similarly, Coelho et al (2019) show that, in a number of jurisdictions, small and less sophisticated financial cooperatives comply with simpler but higher capital and liquidity requirements than do internationally active banks.

[18] According to Hohl et al (2018), out of the 100 surveyed jurisdictions, 97 apply proportionality. Among those, 55 apply a single simplified framework to all banks in the financial system, 24 use an approach whereby specific differentiation criteria is used for a particular standard or a set of standards and only five use a categorisation approach through which a specific regulatory regime is applied to all banks within each category. The remaining jurisdictions apply a combination of these approaches.

assessments (Principle 2); the importance for banks to operate above the minimum requirements (Principle 3); and the need for supervisors to intervene at an early stage (Principle 4).

43. **The principles-based approach results in a wide range of supervisory methods for determining Pillar 2 capital add-ons across jurisdictions.** The Pillar 2 framework was constructed in a flexible way so that it could be tailored to the idiosyncrasies of the respective jurisdictions. Supervisors thus apply a range of approaches, methodologies and strategies with a view to ensuring that banks hold enough capital to support all their risks. As a result, even if Pillar 1 requirements were fully harmonised, capital adequacy ratios would not be entirely comparable since differences in the implementation of the Pillar 2 framework will lead to different Pillar 2 add-ons across jurisdictions.[19]

44. **Different outcomes arise because of variations in the methodology used for setting capital requirements across jurisdictions.** Findings in an earlier FSI publication[20] indicate that authorities apply Pillar 2 add-ons based on one of two approaches. Most jurisdictions apply variations of "guided discretion" methods. Under this approach, authorities combine prescriptive guidance with supervisory judgment. For example, in at least two jurisdictions, Pillar 2 add-on ranges are tied to supervisory bank ratings. In other jurisdictions, the determination of Pillar 2 add-ons follows high-level principles, relying largely on the informed judgment of supervisory teams. A key difference between these two approaches is how the proportionality principle is taken into account. In the former, authorities provide more explicit guidance in setting the contours of the Pillar 2 capital add-ons while in the latter the responsibility for tailoring rests with the supervisory teams.

45. **There are also variations in relation to how Pillar 2 capital add-ons interact with Pillar 1 capital requirements and also with respect to the risks they are supposed to cover.** In most jurisdictions, Pillar 2 capital add-ons are combined with Pillar 1 capital charges. In those jurisdictions, the types of risk covered by these add-ons differ in that some focus on risks not covered by Pillar 1 requirements while others expect Pillar 2 add-ons to also support risks not fully captured or underestimated by the Pillar 1 process. In other jurisdictions, a holistic approach is used. Under this approach, instead of being an add-on to Pillar 1, Pillar 2 is used to assess the overall capital requirements of banks.

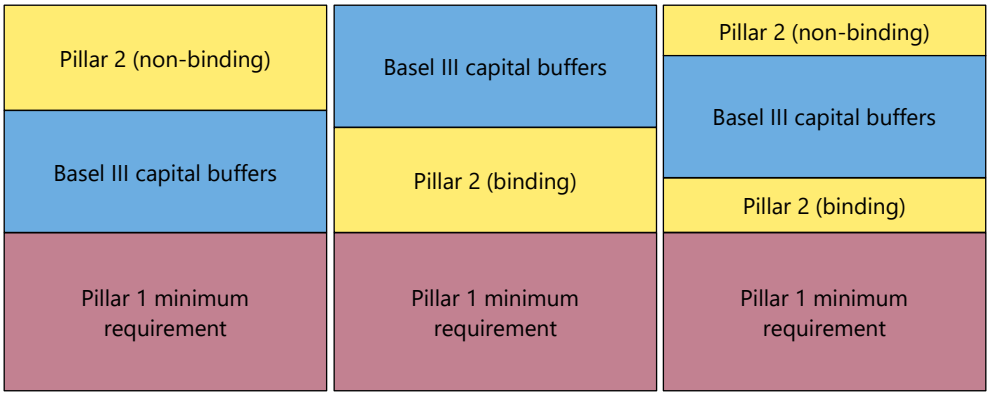
46. **Some differences relate to the implications of breaching these requirements.** In some jurisdictions, Pillar 2 add-ons are binding requirements, while in others they are non-binding. In another group of jurisdictions, parts of the Pillar 2 requirements are binding while other parts are non-binding. In these jurisdictions, binding Pillar 2 add-ons are typically expected to be met at all times, can be publicly disclosed and tend to affect capital distributions. In addition, they are commonly used to cover risks that are well defined and more easily measured. Non-binding Pillar 2 add-ons, on the other hand, can be used in times of stress, are unlikely to be publicly disclosed and tend to be related to uncommon risks and specific supervisory concerns.

47. **Pillar 2 add-ons also interact with the buffer requirements introduced under Basel III in various ways.** In most jurisdictions, Pillar 2 add-ons are typically stacked between Pillar 1 requirements and Basel III capital buffers (ie conservation, countercyclical and systemic importance buffers). However, in others, Pillar 2 add-ons are placed above Pillar 1 requirements and Basel III buffers. The differences in the hierarchy of the buffers have implications for the timing of when supervisory corrective measures are triggered and also for how automatic constraints on distributions are applied. Figure 2 illustrates the different approaches applied across jurisdictions.

[19] See BCBS (2019b) and Duckwitz et al (2019) for a range of practices regarding the implementation of the Pillar 2 framework across a number of BCBS and non-BCBS jurisdictions.

[20] See Duckwitz et al (2019) for further discussion.

Figure 2: Capital hierarchy – range of practices



Source: BCBS (2019b).

48. **The four principles under Pillar 2 focus mainly on capital-related issues, with limited guidance on the supervisory review of the liquidity coverage ratio (LCR).** Pillar 2 was conceptualised prior to the advent of the LCR under Basel III. So it is only natural that the Pillar 2 framework does not provide specific supervisory guidance on the LCR and the potential need for liquidity add-ons. In this context, it is worth noting that the BCBS has a number of publications that promote sound practices on liquidity risk management that can support the supervisory assessment of the liquidity risk profile of banks. However, in the absence of more specific guidance, jurisdictions can still take a wide range of approaches to assess liquidity under Pillar 2, which, in turn, could lead to regulatory divergence.

49. **How the proportionality principle is implemented domestically also gives rise to relevant differences in relation to the scope of application of Pillar 2 requirements.** When the principle of proportionality is applied for Pillar 2 requirements, it usually takes the form of exceptions for a group of banks and/or the tailoring of supervisory expectations.[21] For example, some jurisdictions require all banks to submit internal capital adequacy assessment process (ICAAP) reports and perform stress tests, but tailor the requirements according to the bank's systemic importance and risk profile. Other jurisdictions impose such requirements on only a subset of banks. In such cases, exemptions are typically based not only on bank size but other criteria such as whether or not the bank uses internal models to determine its regulatory capital requirements.

Stress testing

50. **Stress testing is a fundamental part of the Pillar 2 supervisory review process to assess the capital adequacy of banks.** A bank's capital planning process should include severe, plausible, forward-looking stress tests that identify possible events or changes in market conditions that could adversely affect the bank. Under Pillar 2, the bank's ICAAP must assess capital adequacy under stressed conditions and supervisors should evaluate the effectiveness of a bank's stress-testing regime in detecting relevant vulnerabilities, including the main assumptions that drive stress-testing results.

51. **The use of stress-testing results for assessing capital adequacy is common, but there are differences in how the results are considered in the Pillar 2 process.** There are variations, for example, in the extent to which the results are used to establish capital requirements.[22] In some jurisdictions, authorities adopt specific hurdle rates to determine whether banks have passed or failed a stress test and also to set their capital buffers. In those cases, breaches are deemed capital shortfalls and typically lead to

[21] Duckwitz et al (2019) outline the Pillar 2 implementation approaches in selected jurisdictions, focusing on whether and how they apply proportionality.

[22] Drawing on the results of two surveys, completed respectively by Basel Committee member authorities and by banks, BCBS (2017c) describes and compares supervisory and bank stress-testing practices.

the need for banks to present capital restoration plans. In other countries, stress-testing results are not binding and are used by the financial authorities mainly as an early warning indicator.

52. **There are also differences in the choices made in the design of stress-testing exercises across jurisdictions.** In some cases, authorities use bank-run, bank-specific stress tests, bank-run supervisory stress tests or supervisory-run stress tests or a combination of those approaches. Other differences in the design of stress tests relate to specific features of the exercise, such as the criteria to set the severity of the shock and whether the model used incorporates feedback effects and balance sheet adjustments (Table 5 summarises some of the findings from Baudino et al (2018) about differences in the design of stress tests).[23] All these variations combined can have material effects on the outcomes of stress test exercises, on the supervisory review process and ultimately on the capital adequacy assessment of banks.

Stress testing

Technical requirements and design — Table 6

Objectives	Assess the solvency risk of individual banks Enhance banks' awareness and preparedness for risks Communicate supervisory perspective to banks Assess banks' ability to maintain business continuity under stress
Severity of the scenario	Anchored to one key variable (eg unemployment) Based on previous episodes of financial distress (eg GFC) Expert judgment
Risk coverage	Credit risk Market risk Liquidity risk Operational risk
Modelling assumptions	First-round effect vs second-round effect Static balance-sheet vs dynamic balance sheet Restrictions on income components
Disclosure	To banks and the public, at bank and aggregate level To banks and the public, at aggregate level only To banks only, at bank level

Source: Baudino et al (2018).

Section 5 – Conclusion

53. **Regulatory-driven market fragmentation poses challenges for the proper functioning of the global financial system.** Unwarranted divergence in prudential requirements may distort competition and discourage banks from undertaking cross border activities. If this occurs, it may reduce the efficiency of the financial system, hinder international capital flows and impede global risk-sharing among a broader array of market participants.

54. **Some aspects of divergent prudential frameworks are not necessarily detrimental to financial stability and other policy objectives.** Domestic economic and market conditions may require

[23] Baudino et al (2018) assess stress-testing exercises in four jurisdictions, identifying their key design elements.

regulation to be adjusted in order to achieve a specific policy goal. In some cases, authorities impose higher standards than the applicable international norms with the aim of addressing country-specific concerns. In other cases, authorities may impose different prudential standards on banks that are deemed not to be internationally active, with a view to tailoring the rules to fit the risk profiles of banks operating in their respective jurisdictions.

55. **Full, timely and consistent implementation of the standards, at least to international active banks, is a necessary condition to minimise unwarranted divergence.** The BCBS regularly reviews the implementation of agreed standards in member jurisdictions. In addition, it has already issued guidance on specific elements of the prudential regime where significant discrepancies exist.

56. **Yet domestic regulations that are assessed as compliant with Basel standards may still lead to different prudential outcomes across jurisdictions.** There are at least three key drivers for such deviations: (i) heterogeneous practices in the measurement of certain assets that depend heavily on assumptions; (ii) variations in the scope of the implementation of Pillar 1; and (iii) divergent approaches in the application of Pillar 2. All three factors combined can generate significant variation in prudential regimes that is unlikely to be fully justified by financial stability considerations.

57. **Scope may exist to mitigate unwarranted sources of divergence, particularly where excessive discrepancies remain.** On the first source of variation – asset measurement practices that drive the calculation of regulatory capital – the design of consistently applied prudential backstops, particularly for the measurement of NPEs and Level 2/3 assets, can reduce unwarranted variability across jurisdictions. On the second and third sources of discrepancies – differences in the national implementation of some elements of Pillar 1 and Pillar 2 requirements – there is scope to investigate whether all differences are justified on the basis of national specificities or whether additional guidance may mitigate unwarranted regulatory fragmentation.

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