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Basel: The Next Generation What is the future for internal regulatory capital models?



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Introduction

While the dust is still settling from the sweeping reforms of Basel III, the Basel Committee on Banking Supervision has not been idle. A series of consultations and proposals launched throughout 2014, with more to come this year, suggest another fundamental overhaul of banking capital requirements is on the horizon.

In recent months, the Basel Committee on Banking Supervision (BCBS) launched a series of standards and consultation papers on various areas of the regulatory framework. Many of the proposals have a target implementation date of 2017-2018, setting the scene for a consolidated package of legislation to overhaul regulatory standards once again. The breadth and scale of the changes should not be underestimated. In fact, some have questioned whether this heralds the beginning of the end for the use of internal models in regulatory capital.

The core theme underpinning the new BCBS proposals, as reported to the G20 in November 2014¹, is a desire to reduce the variability in capital ratios arising from modelling differences between banks. This intention, which has not been met with universal approval, appears to have stemmed from the results of the BCBS hypothetical portfolio exercise at the end of 2013², which illustrated a material variation in risk-weighted assets (RWA) calculated on the same portfolio by different banks.

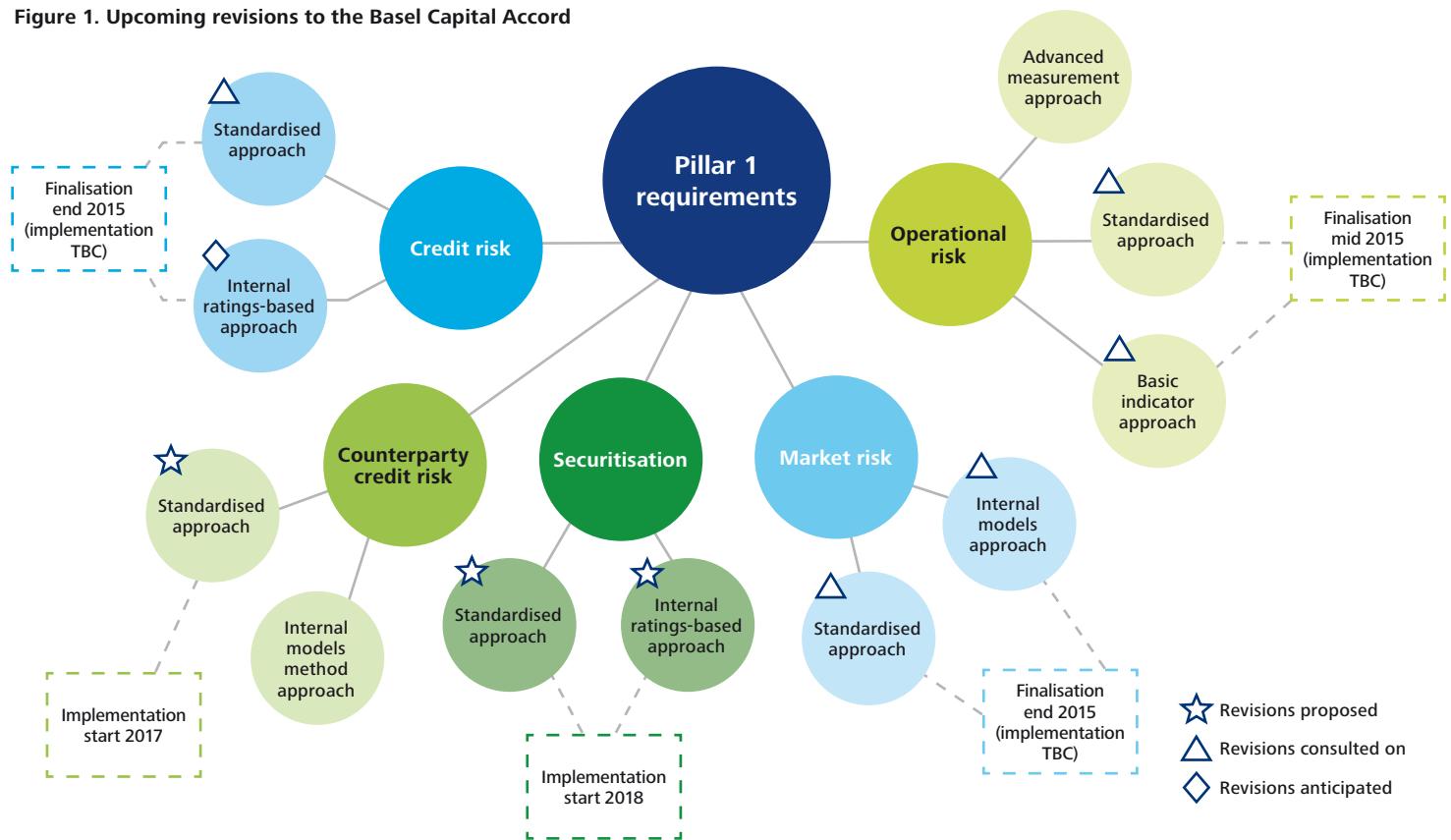
Concerned that excessive variation in RWA due to modelling choices undermines public confidence in reported capital ratios, the BCBS is approaching the problem from multiple angles:

- Harmonising modelling practices across the industry through, for example, the **fundamental review of the trading book**³ (FRTB)
- Revising standardised approaches for capital calculations across **credit risk**⁴, **securitisations**⁵, **counterparty credit risk**⁶, **market risk**³ and **operational risk**⁷
- A revised **capital floor**⁸ for models, replacing the existing capital floor based on Basel I.

The BCBS also believes the leverage ratio as proposed in BCBS 270 (which is currently subject to a monitoring period) will be a key tool in combatting variation in RWAs. In an industry still dealing with a host of other regulatory changes, many firms lack the resources to analyse these proposed new revisions in detail, but they cannot be ignored. In this paper we summarise the key changes, their consequent impact, and the resultant potential challenges for banks.

Figure 1 opposite shows the areas of the Pillar 1 framework which are due to be revised by the BCBS:

Figure 1. Upcoming revisions to the Basel Capital Accord



Summary of the key revisions

The current regulatory environment for banks is already one of onerous change. The leverage ratio is forcing many firms to reduce their balance sheets, stimulating interest in portfolio compression and non-core spin-offs. In addition, the Liquidity Coverage Ratio (LCR) and increased margin requirements are raising demand for liquidity and may increase the cost of collateral. IT and modelling departments are struggling to cope with the clearing mandate, building a standardised initial margin model for uncleared trades, and the demanding data aggregation standards mandated in BCBS 239.

It is against this backdrop that the BCBS proposals to revise the risk capital model framework are arriving. The proposed changes are built around the principles of increasing risk sensitivity, reducing reliance on external ratings for standardised approaches, and enforcing greater uniformity and comparability across banks for advanced approaches.

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Figure 2. Summary of the proposed revisions by the BCBS

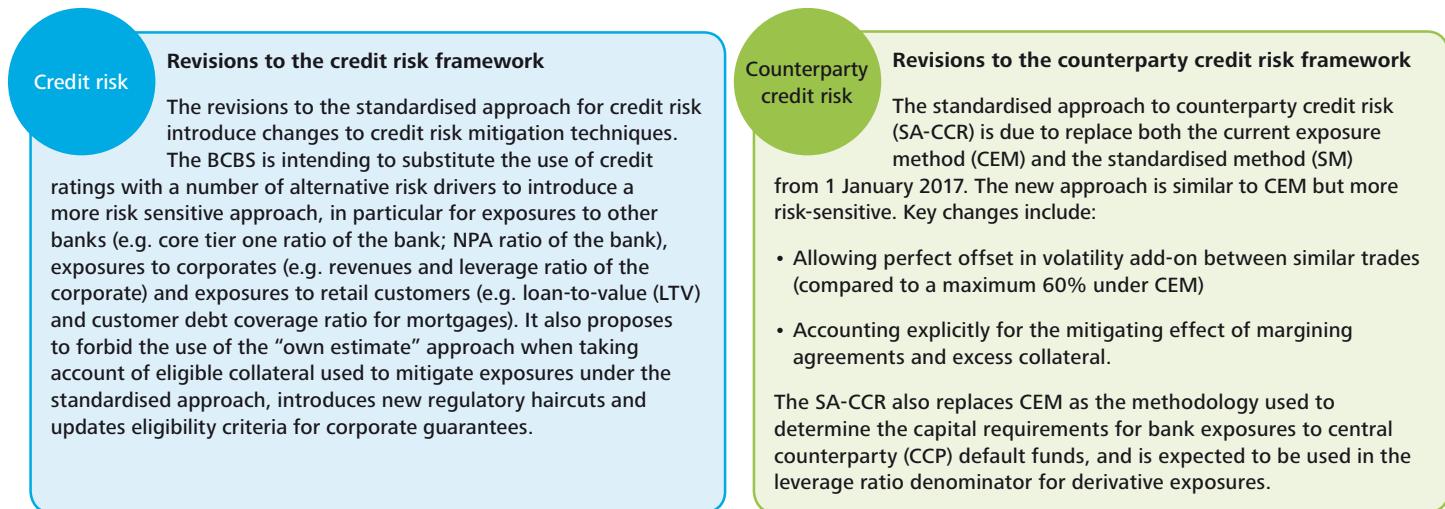


Figure 2. Summary of the proposed revisions by the BCBS (continued)

Securitisation	Revisions to the securitisation framework Revisions to the securitisation framework are designed to simplify the hierarchy of capital calculation methodologies from 1 January 2018. In line with guidance set out by the G20, there is a switch from preferring external ratings to internal ratings, with new requirements for firms to gather increased levels of detail on the underlying portfolios against which they hold tranches of credit risk. Furthermore risk weights are recalibrated, reducing the risk weighting for junior tranches, and increasing the weighting for senior tranches.	Market risk	Revisions to the market risk framework The fundamental review of the trading book (FRTB) is a complete overhaul of the way banks assess market risk in the trading book. The new framework tackles both the internal modelling for market risk (partially revised in 2009 as part of "Basel 2.5") and also the standardised approach (untouched since Basel II). FRTB has been subject to intense industry debate and elements of the proposals are still not yet finalised despite the BCBS having issued their third consultative paper on the topic. However, the new framework is beginning to take shape and the target implementation date is 1 January 2018. Changes to internal models include: <ul style="list-style-type: none">• Replacing value at risk (VaR) with expected shortfall (a tail-risk measure)• Moving to a single calculation calibrated to a stressed period of history• Explicitly incorporating the liquidity risks of different risk factors• Capping the benefit of cross-asset class diversification. Meanwhile the standardised approach is to be replaced with a sensitivity-based methodology, essentially a prescriptive VaR simulation, based on internally-calculated trade-level sensitivities. All banks (including those with internal model approvals) will be expected to calculate and disclose the capital ratios under the standardised method.
Operational risk	Revisions to the operational risk framework The existing set of simple approaches for operational risk is not considered to correctly estimate the operational risk capital requirements of a wide spectrum of banks. The BCBS proposes to address the shortcomings of existing simpler approaches by: <ul style="list-style-type: none">• Replacing the Gross Income Indicator with a new indicator, the Basic Indicator (BI), which is better able to capture a bank's volume of business and hence its operational risk• Calibrating the coefficients to be applied to the BI based on the magnitude, rather than the nature, of the business activities (identified by historical back-testing as a more statistically significant driver of operational risk losses).		

Winners and losers

Unlike Basel III, the BCBS has been clear that it has no political mandate to raise the overall level of capital in the industry. The proposed revisions are therefore expected to be calibrated with this in mind, although some in the industry have expressed concern whether the calibration data from banks will be adequate to ensure this. Institutions' specific capital requirements will be driven by the nature and composition of their portfolios and could vary significantly between banks.

Broadly, the revisions are likely to affect investment banking more than retail banking. The fundamental review of the trading book (FRTB) is targeted directly at the trading book, while the new standardised approach for counterparty credit risk (SA-CCR) is of greatest relevance to entities with material derivative portfolios. Changes to the securitisation framework and the standardised approach to credit risk will certainly affect commercial banks and mortgage lenders too, but overall the new proposals will join the leverage ratio, liquidity requirements, large exposure limits, and clearing and initial margin requirements as an additional challenge for the under-fire investment banking business model.

Furthermore the increased risk-sensitivity of the standardised approaches, combined with the greater modelling constraints and potential floors on internal model outputs is likely to see capital under the two methodologies converge. Firms currently using standardised approaches for market and counterparty credit risk – which includes most smaller banks – may well see capital requirements drop where they have low risk and sufficiently diversified portfolios, while those firms using advanced methods – typically larger banks – may see increases in capital (especially where their current capital requirements are significantly below the standardised equivalent).

At a portfolio level, certain asset classes and trading activities look likely to fare worse than others as illustrated in Figure 3 on page 10.

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Figure 3. Impact of the proposed changes by the BCBS

Basel Capital Accord	Pillar 1 component	Revisions anticipated	Likely winners	Likely losers
	Eligible capital	None	No revisions anticipated	
Credit risk	Standardised approach		<ul style="list-style-type: none"> Mortgages with loan-to-value (LTV) below 40% Unrated large corporates Well-capitalised bank exposures. 	<ul style="list-style-type: none"> Mortgages with higher LTV, in particular within the 80-90% LTV band Smaller corporates, in particular if they are well rated today Secured transactions with standardised counterparties.
	Internal ratings-based approach		No revisions anticipated	
Counterparty credit risk	Standardised approach		<ul style="list-style-type: none"> Centrally cleared derivatives Collateralised trades Counterparty exposure limited to a single asset class Offsetting trades with the same counterparty. 	<ul style="list-style-type: none"> Uncollateralised trades Highly directional group of trades with the same counterparty Economically balanced trades which cut across hedging sets Counterparty exposure that cuts across multiple asset classes.
	Internal models method approach		No revisions anticipated	

Figure 3. Impact of the proposed changes by the BCBS (Continued)

Pillar 1 component	Revisions anticipated	Likely winners	Likely losers
Securitisation	Standardised approach	<ul style="list-style-type: none"> Banks holding material lowly rated securitisation positions which under current rules are subject to a 1250% risk weighting or full deduction from common equity capital Given the impact on securitisation funding, banks that have other secured funding in place (e.g. covered bonds) will be better placed competitively. 	<ul style="list-style-type: none"> Investors in high grade securitisations (particularly in European markets, where losses experienced have been lower than US markets) Banks that are unable to use the most risk sensitive measure (Kirb) to calculate risk weights on securitisations due to an inability to model the underlying assets under their internal ratings based model Banks relying on funding through issue of high quality notes through securitisation vehicles – higher risk weights reduce the attractiveness of these positions to other banks that might purchase these notes.
	Internal ratings-based approach		
Market risk	Standardised approach	<ul style="list-style-type: none"> Under the revised standardised approach, based on Quantitative Industry Study (QIS), banks with material commodities portfolios (this was the only asset class to experience capital benefits under the revised standardised approach). 	<ul style="list-style-type: none"> Banks under the standardised approach, based on QIS (except where commodities positions form the bulk of a portfolio).
	Internal models approach	<ul style="list-style-type: none"> Highly liquid portfolios, well-hedged on an asset-class basis. 	<ul style="list-style-type: none"> Equities and credit portfolios, hit by long liquidity horizons, inclusion in incremental default charge and a floor on sovereign PDs Portfolios with significant cross-asset diversification.
Operational risk	Basic indicator approach	<ul style="list-style-type: none"> Small firms with BI or SA below €100 million Entities whose activities receive a 20% or 18% factor under the standardised approach. 	<ul style="list-style-type: none"> Large firms with an estimated BI or SA above €3 billion Entities whose activities receive a 12% factor under the standard approach.
	Standardised approach		
	Advanced measurement approach	No revisions anticipated	

Key challenges for banks

As the Basel proposals take shape, the big question for banks across the spectrum of the industry is how they will need to adapt their business models to account for the new regulations. Figure 4 opposite summarises the key operational challenges and potential business implications.

More fundamentally, some in the industry may read the new proposals and begin to question the long-term economics of internal modelling for regulatory capital altogether. The BCBS is currently undertaking a long-term review of the regulatory framework with an eye on the cost/benefit ratio of internal models and whether they improve overall risk and capital management. Models are becoming more prescriptive and ever more expensive to maintain, and there is an increasingly risk-sensitive set of non-model based alternatives on which to fall back. With the threat of capital floors, forced disclosure of standardised capital ratios, and a seemingly hostile regulatory environment towards internal models in general; banks may need to consider whether the return on investment in internal regulatory capital model frameworks will be viable in the long term.

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Figure 4. Potential implications for the banks caused by the proposed BCBS revisions

Theme	Areas	Implementation considerations
Data and IT	<ul style="list-style-type: none"> • IT • Risk • Finance 	<ul style="list-style-type: none"> • Firms will need to put in place the necessary change and IT programmes to cope with a new raft of changes, many of which will require whole new calculations to be implemented and new data supplies to be sourced • The revised standardised approaches require extraction of data that regulatory reporting teams do not currently extract (e.g. market risk requires banks to extract regulatory-specified risk factor sensitivities from front office systems, which may require IT systems and data workflows to be adapted) • FRTB changes (e.g. to account for diverse liquidity horizons, stress calibration and restricted asset class diversification) necessitate a large increase in the number of simulations required for the internal model approach with resulting impact on hardware requirements • The revised securitisation approach will require a greater volume of data to be obtained on underlying portfolios • The BCBS 239 document presents a set of principles to strengthen the bank's risk data aggregation capabilities and risk reporting practices with a set of rules that applies both to G-SIBs and supervisors.
Business mix and allocation	<ul style="list-style-type: none"> • Front line • Treasury/capital planning 	<ul style="list-style-type: none"> • Depending on where standardised floors and leverage ratio 'bite', capital allocation and pricing will need to change • This may lead to business mix change. For example, OTC derivatives desks may need to switch to shorter dated products with more regular collateral exchanges.
Controls	<ul style="list-style-type: none"> • Finance • Risk • Internal Audit • Compliance 	<ul style="list-style-type: none"> • The significant increase in new data requirements that need to be sourced and related reporting requires significant data quality and controls enhancements.
Internal model usage	<ul style="list-style-type: none"> • Treasury/capital planning • Risk 	<ul style="list-style-type: none"> • Banks currently in process of applying for model permissions or further extending existing model permissions to new portfolios will need to consider their model investment budgets, and timings for changes given potential reductions in benefits.
Core/non-core split	<ul style="list-style-type: none"> • Front-line (incl. non-core) • Risk 	<ul style="list-style-type: none"> • Banks may want to reassess their core/non-core split as certain portfolios may become more attractive from a capital perspective (e.g. lower rated securitisations and certain derivatives).

Contacts



Julian Leake

Partner

Tel: +44 20 7007 1223

Mobile: +44 7798 807853

Email: jileake@deloitte.co.uk



Vishal Vedi

Partner

Tel: +44 20 7303 6737

Mobile: +44 7768 711459

Email: vvedi@deloitte.co.uk



Zeshan Choudhry

Partner

Tel: +44 20 7303 8572

Mobile: +44 7810 631509

Email: zchoudhry@deloitte.co.uk



Hubert Justal

Director

Tel: +44 20 7007 0484

Mobile: +44 7795 612980

Email: hubjustal@deloitte.co.uk



Andrew Hudson

Senior Manager

Tel: +44 20 7303 7615

Mobile: +44 7804 543687

Email: andrudson@deloitte.co.uk



Alex Szmigin

Senior Manager

Tel: +44 20 7007 6437

Mobile: +44 7785 459595

Email: aszmigin@deloitte.co.uk



Melis Pistracher

Manager

Tel: +44 20 7303 0485

Mobile: +44 7552 008137

Email: mpistracher@deloitte.co.uk

Endnotes

1 www.bis.org/publ/bcbs298.pdf

2 www.bis.org/publ/bcbs267.pdf

3 www.bis.org/publ/bcbs265.pdf

4 www.bis.org/publ/d307.pdf

5 www.bis.org/publ/d303.pdf

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7 www.bis.org/publ/bcbs291.pdf

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