

Basel 3 and 4 and Australian Banking[#]

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Draft: 8 July, 2015

ABSTRACT

The approach of international standard setters to the appropriate design of regulatory bank capital requirements is currently in a state of flux. We examine potential effects of recent (Basel 3) and proposed (“Basel 4”) changes on the future role of risk sensitivity and internal models in capital requirements, competitive advantages from, and incentives for banks to attain IRB status for credit risk, and implications for the Australian mortgage market.

[#] Prepared for 20th Melbourne Money and Finance Conference, Brighton Savoy, July 13-14, 2015

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1. Introduction

In December 2014, the Basel Committee (BCBS 2014b, 2014c) outlined proposed changes to the capital requirement standards which, if agreed upon, will initiate a new regime that is now becoming generally referred to as Basel 4. There are two main ingredients. One involves changes to both the method of calculating, and levels of, risk weights in the standardised approach for credit risk¹. The second involves the introduction of (or, more precisely, redesign of the existing) “capital floor” for minimum regulatory capital required of “IRB banks” - those operating under the advanced approaches. The floor would be calculated (in a manner yet to be determined) by reference to capital required under proposed revised standardised approaches for credit, market and operational risks.²

The calibration of the new standardised risk weights, capital floor, and the Basel 3 leverage ratio will very likely reduce the discrepancies between capital requirements for IRB banks and those operating under the standardised approach, mainly via higher capital requirements for IRB banks. (But there may be potentially quite different effects on competition across different credit markets).

A third potential change announced in November 2014 involves narrowing of the modelling approaches permitted under the IRB approach (BCBS, 2014a). This paper also signalled a longer-term review of the merits of the current, risk-sensitive regulatory capital framework versus other potentially simpler approaches for determining regulatory capital, with either minimal or zero role for banks’ internal risk models. In doing so, it called into question the future existence of the IRB approach to credit risk.³

In this paper we analyse the effects of those proposed changes (which we label Basel 4), including their interaction with Basel 3 changes, with a focus on three issues. First, we argue that calibration of the proposed capital floors and leverage ratio requirement of Basel 3 will require considerable care to maintain appropriate risk sensitivity in regulatory capital requirements. Second, the potential reduction in regulatory capital concessions for IRB banks compared to banks using the standardised approaches will reduce bank incentives to improve risk management capabilities to achieve IRB accreditation. We examine whether the need for such incentives has diminished since they were first introduced in Basel II, a decade ago, and conclude that these incentives may still have an important role to play. Third, we suggest that substantial changes to the supply and cost of mortgage credit in Australia are likely, such that a careful transition is required to prevent undue disruption. We conclude by offering some comments about the longer-term review of the Basel framework which is currently underway.

¹ The Basel Committee has also proposed significant revisions to the standardised approaches for market risk and operational risk.

² Basel 2 incorporated a “transitional” capital floor expressed as a percentage of what would have been required under Basel 1. The proposed new capital floor would replace the transitional floor; its design may involve either individual “risk category-based floors” - a floor applied to each major risk category, such as credit, market and operational risk – or a single, aggregate floor based on total RWAs.

³ Annex 1 of BCBS (2014a) provides a summary of the relevant forward work program of the Basel Committee as at late 2014.

2. Background

Two features of the Basel 4 proposals stand out as particularly noteworthy. First, the stated objectives for redesigning capital floors to reduce capital concessions for IRB banks specifically include creating a “more level playing field between standardised banks and banks using internal models for regulatory capital purposes”.⁴ The proposed changes could have major effects in this regard – depending on their design and calibration.

Second, the new standardised approach for credit risk is aimed at increasing cross-border comparability of capital requirements for standardised banks by reducing national regulatory discretions under that approach, where feasible⁵. While comparability for large multinational banks may have merit, the case is less clear for limiting the discretion of national regulators in tailoring regulatory requirements for primarily domestic banks operating primarily in domestic markets. Global harmonization appears to have become unquestioningly accepted by Basel (although not by US regulators, see Tarullo (2014)) as a goal in areas where it might be open to debate.

Such changes will interact with other relatively recent capital requirement changes introduced under the Basel 3 regime. Those include: introduction of a simple leverage ratio requirement as a “backstop” to the risk weighted approach; revisions to the treatment of securitisation exposures; planned introduction of a TLAC (Total Loss Absorbing Capacity) requirement for G-SIBs involving “bail-in” debt requirements (also to be applied by APRA to the four Australian majors which are categorised as D-SIBs); changes in risk weights aimed at reducing financial sector interconnectedness; additional capital charges for G-SIBs (of 1 per cent of RWA, also applied by APRA to the D-SIBs), and generally higher capital requirements.⁶

We focus first on the questions of trends in international thinking about the role of risk sensitivity in capital requirements and reliance upon bank internal models (in conjunction with Basel-specified parameters) for determining such requirements. We then turn to the questions of how key elements of Basel 4, if adopted largely as proposed, would affect the competitive balance in Australian banking, incentives for ongoing risk management improvements, and mortgage market implications.⁷

⁴ Indeed, capital concessions were intentionally provided under the internal model-based advanced Basel approaches for credit, market and operational risks (via its initial calibration when Basel II was first introduced) as a powerful incentive for banks to invest substantially to improve their risk management infrastructure and processes to the standard required to receive advanced accreditation under Basel II for these risks.

⁵ Another objective is to reduce or eliminate reliance on external credit ratings in the standardised approach by providing alternative measures for credit risk assessment, where possible - a very challenging objective.

⁶ In addition, Basel 3 also ushered in new liquidity requirements in the form of the LCR (Liquidity Coverage Ratio) and NSFR (Net Stable Funding Ratio – with regulations recently published by APRA but yet to come into effect), with the former accompanied in Australia by creation of the CLF (Committed Liquidity Facility) at the RBA.

⁷ Those issues of competition and funding were also key considerations of the recent Australian Financial System (Murray) Inquiry (FSI, 2014). We note, but do not consider the ongoing debate about the likely effect of higher capital requirements on the overall cost of credit.

3. Risk sensitivity and capital requirements: the leverage ratio requirement

Currently, there is debate over whether capital requirements should be primarily explicitly risk-based, and risk-sensitive – a fundamental precept of the Basel approach to date. This finds reflection in the Basel 3 introduction of a “leverage ratio”, and debate over an appropriate level for such a ratio. The current Basel 3 arrangements perceive the leverage ratio principally as a “backstop” measure to risk-based capital requirements, to mitigate model risk and also prevent banks from “gaming” the risk-based approach and increasing leverage to inappropriately high levels. (The Bank of England (2014) notes that average risk weights of major global banks fell from around 70 per cent in 1993 to below 40 per cent by the end of 2008).

The proposed minimum leverage ratio requirement has not yet been determined, but is likely to be at least 3 per cent of “exposures” which incorporate both on-balance sheet and off-balance sheet credit exposures (weighted by credit conversion factors)⁸. In the USA, the leverage ratio has been set significantly higher at 6 per cent (of a similar exposure measure) for bank subsidiaries of systemically important bank holding companies (OCCC, 2014).

Depending upon its calibration, the leverage ratio can become the binding capital constraint for banks which are primarily engaged in lending activities with low risk weights, such as residential mortgages. For example, \$100 of exposures with an average risk weight of 30 per cent would under the RWA approach with a minimum tier 1 (CET1) requirement (including capital conservation buffer) of 8.5 per cent of RWA requires \$2.55 of tier 1 capital, which would be less than the \$3 required under a minimum 3 per cent leverage ratio requirement.⁹

Major global banks generally have an average risk weight of just above forty per cent and a peer group of major UK banks had an average risk weight of 39.9% (Bank of England, 2014).¹⁰ The major Australian banks also appear to have average risk weights of less than 40 per cent¹¹. At an average risk weight of 35 per cent or less, a leverage ratio of 3 per cent would become binding (Figure 1). In that case, mortgage lending would, at the margin, effectively involve a CET1 capital requirement of \$3 per \$100 loan, rather than the \$1.70 or

⁸ In the United Kingdom, the FPC proposes to set an interim minimum leverage ratio requirement of 3%. It is proposed that the numerator of the leverage ratio will comprise Common Equity Tier 1 capital (CET1) plus Additional Tier 1 (AT1) instruments of sufficient quality to convert to CET1 on a ‘going concern’ basis, up to 25% of the proposed minimum leverage ratio requirement of 3% (Bank of England, 2014)

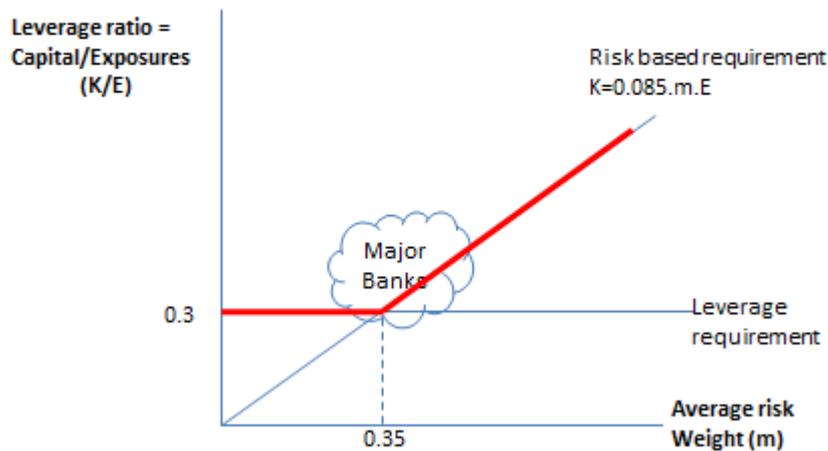
⁹ The precise calculation is complicated by the inclusion of operational and market risk in risk-weighted capital requirements, whereas the leverage ratio only incorporates on- and off-balance sheet credit exposures.

¹⁰ Hoenig (2015) reports leverage ratios for US and foreign G-SIBs averaging around 5 per cent using IFRS accounting, but around 2 percentage points higher on average for US banks under GAAP accounting, and substantial differences between the IFRS based figures and self-reported, higher, Basel III leverage ratios. APRA has announced that Australian banks will be required to provide Basel III leverage ratio figures from September 2015.

¹¹ Specification of a precise figure depends upon aggregates used for the numerator and denominator. While the numerator (RWA) is precisely calculated, the appropriate choice of denominator (for use in comparison with the Basel leverage ratio) is problematic. For example, the ANZ March 2015 Basel Pillar 3 disclosures provided figures of total credit risk weighted assets of \$334.8 billion and total ‘Exposure At Default’ of \$990.6 billion, resulting in an average risk weight at March 2015 of 33.8% under this measure. See https://www.shareholder.anz.com/sites/default/files/aps_330_march_2015_disclosure.pdf (pp 4 & 20)

less applicable under the current IRB mortgage risk weights of less than 20 per cent. We take up potential mortgage market consequences later.

Figure 1: Leverage Ratio Calibration



While the calibration of the leverage ratio – if sufficiently high - could have the end effect of removing or diminishing risk-sensitivity in the IRB approach, the proposed revisions to the standardised approach indicate a commitment by the Basel Committee to retaining risk-sensitivity of capital requirements. Indeed, one of the objectives stated is to “ensure that the standardised approach is appropriately calibrated to reflect to a reasonable extent the riskiness of exposures” (BCBS, 2014c, p3).

Whether the proposed changes to the standardised approach (including removal of reliance on external ratings agencies and identification of new, regulatory-specified “risk factors” for exposure classes) achieve that outcome is another question. Indeed, it would appear anomalous that a global approach is proposed to defining and quantifying risk factors applicable in different national markets, where local conditions can vary substantially. The Basel Accord was originally premised upon creating common minimum standards for international banking but allowing for catering to national market conditions, via the exercise of national discretions. Since 2013, the pendulum has begun to swing towards reduced levels of national discretion, in pursuit of greater harmonisation of standards and RWA calculations.

4. The Future of the IRB approach

The Basel Committee currently comprises forty-five regulators from twenty-seven countries and the EU, a far cry from when the initial Basel Accord of 1988 was agreed by the Central Bank Governors of the G10 nations. Proposals for change are subject to widespread consultation and industry submissions. It would be surprising indeed if there were complete unanimity of views – particularly when national experiences under prior versions of the

Basel requirements differ as much as occurred recently in the GFC, and when national financial markets differ in structure so markedly among members and non-member countries.

The most obvious, early example of a shift away from support for the IRB approach for credit risk (albeit an approach never fully endorsed anyway in the USA, despite being applied to banks with over \$250 billion of assets) can be found in speeches by Governor Tarullo of the US Federal Reserve Board:

“...I believe we should consider discarding the IRB approach to risk-weighted capital requirements. With the Collins Amendment providing a standardized, statutory floor for risk-based capital; the enhanced supplementary leverage ratio providing a stronger back-up capital measure; and the stress tests providing a better risk-sensitive measure that incorporates a macroprudential dimension, the IRB approach has little useful role to play.” (Tarullo, 2014, p15).¹²

At a practical level, the Basel 4 capital floors proposal calls into question the relevance of the IRB approach. Depending on how they are calculated and calibrated, such floors may remove any incentive for banks to expend the hundreds of millions of dollars required to strengthen risk management systems and processes to meet the standards required to achieve IRB accreditation from national regulators. Together with the proposed new standardised risk weights for the various asset classes, the proposed floors may affect the relative competitive position of IRB and standardised banks in different loan markets – in ways not yet able to be determined.

Why has there been a loss of confidence in the IRB approach by regulators in some jurisdictions (but not including Australia, Europe and the UK)? A major, often stated, reason has been the demonstration (Basel, 2013a, 2013b) that banks’ internal risk models throw up wide disparities in risk weights (and consequent capital requirements) of specific, common, hypothetical banking book exposures to sovereigns, banks and corporates. However, as explained by the Bank of England, these disparities are to be expected¹³. Such disparities could reflect: underlying national differences in risk factors including local laws and regulatory requirements; aspects of bank strategies towards loan management which affect risk characteristics; or differences in banks’ internal models and their calibration. Perhaps more relevant, however (at least for US regulators) is the US experience in the GFC when market participants lost faith in reported, risk-based capital ratios and focused more on leverage measures. Bernanke (2013) notes that the publication of stress tests conducted by

¹² The “Collins Amendment” to the Dodd-Frank Act requires US regulators to apply minimum consolidated capital requirements that are not less than generally accepted risk-based capital requirements.

¹³ *“Part of the variability of risk weights is caused by firms’ modelling choices and supervisory adjustments to model outputs. But variability may also reflect basic statistical facts: if data are insufficient, random fluctuations in samples will lead to a wide range of capital outcomes driven by chance — even if the same model is used. For low-frequency events, which need to be modelled with greater precision than more frequent events, even samples that would usually be considered very large might result in considerable risk-weight variability. Thus variability can be purely reflective of inevitable noise in banks’ data rather than any desire to minimise risk weights.”* (Bank of England, 2014, p 13)

the Federal Reserve contributed to system stability by providing clearer information on prospective loan losses and bank solvency.

Recognising the diversity of factors contributing to disparities in risk weight calculations, it might be asked whether, and if so in what context, differences in risk weight calculations by banks for similar exposures matter? For national regulators, differences might provide signals of differences in risk management capabilities and thus influence supervisory intensity. For national markets, risk-based pricing might lead to differences in loan pricing across banks – which could affect competitive ability and thus the ultimate survival of those with poor pricing. But that is a desirable characteristic of competitive markets and as long as regulators are able to smoothly effect the exit of a bank losing viability, it should not be a cause for concern of prudential regulators.

The area in which such differences have occasioned most concern is in the (lack of) international comparability of bank risk for wholesale providers of debt finance to multinational banks. This has been compounded by national differences in the application of capital requirements (which the Basel Committee is also seeking to reduce). Whether capital regulation should be tailored to meet the interests of that group of investors, rather than ensuring that there are adequate disclosures to enable them to assess risk differences and appropriate credit risk premiums charged, is a moot point.¹⁴

Also relevant has been the increasing complexity of the regulatory framework and requirements. This has led some to question whether the importance accorded to the quantification processes which are at the heart of the IRB approach creates a disjuncture between technical modellers and relevant decision-makers and risk managers. Similarly, the volume and technical complexity of the Basel requirements have frequently had the effect of making it quite difficult for bank senior management and board directors to participate meaningfully in discussions about these matters. This provides a difficult challenge for effective risk governance. This seems to us to be a more important critique of reliance on the complex, highly technical IRB approach than inter-bank differences in RWA assessments. The IRB approach has arguably fostered the view among some observers that risk management is a science rather than, at least in part, an art, requiring the primary exercise of collective wisdom and judgment!

The introduction of the IRB approach was seen as capturing and reflecting a major advance in bank credit risk management and regulation in the Basel 2 framework. Does the current diminished level of confidence in the bank internal models at the heart of the IRB approach imply that Basel 2 led bank regulation up a blind alley? Arguably not. The IRB approach required banks to spend vast sums on meeting the Basel accreditation requirements – a large part of which was associated with developing suitable technology, models and data for improved credit risk assessment, both at loan origination and subsequently. The objective was to ensure that the strengthened risk management processes were of sufficient quality such that certain quantitative risk estimates derived from these processes¹⁵ were

¹⁴ This complaint does not seem to be widely echoed by global equity market investors, whose subordinated position should make it more of a concern.

¹⁵ Specifically: bank internal estimates of Probability of Default (PD), Loss Given Default (LGD) and Exposure At Default (EAD) for designated obligors and portfolios. Use of these parameter estimates (“Internal Ratings”) in

sufficiently robust to be usable in the calculations of minimum regulatory capital. Indeed, the capital concessions provided for IRB accredited banks (vs the standardised approach for credit risk) were premised on providing a material inducement for banks to spend those vast sums to develop strengthened credit risk management processes.

Such inducements were arguably appropriate at the time of the introduction of Basel II a decade ago. In practice, the capital concessions were typically essential in making the business case successfully to boards to make the very substantial necessary investments in risk systems and infrastructure. For many banks the most significant benefits from investing to achieve IRB accreditation were in their strengthened risk data, information technology and collateral management capabilities (including developing a “single view” of aggregated exposures to particular customers), rather than solely in the construction of more robust quantitative risk models.

Going forward, these benefits for risk management and pricing for IRB banks could be expected to persist, regardless of whether parameter estimates from these banks’ internal PD, LGD and EAD models remain as the foundation for regulatory capital determination. But whether the strong (albeit, very complex) ‘guard rail’ of the current, prescriptive Basel requirements, and associated detailed supervisory review, is necessary to drive ongoing improvements in the effectiveness of (both IRB and standardised) banks’ internal credit risk management processes is an important consideration.

It is unarguable that “best practices” in credit risk management have improved substantially since the first banks were accredited to use the IRB approach under Basel II in 2007, and banks today are better able (via industry and regulatory initiatives) to stay abreast of, and adopt, relevant risk management developments and techniques. In tandem, supervisory requirements for risk management have evolved substantially over the past decade and become more rigorous (with higher capital requirements at supervisory discretion for banks judged to have risk management weaknesses).

In this context, it is reasonable to question whether we have now reached a point where competitive pressures are sufficiently powerful to drive risk management improvements in banks. If so, the capital incentives within the Basel regulatory framework for standardised banks to achieve IRB accreditation may no longer be necessary. More generally, with significantly higher capital requirements, enhanced potential for market discipline via increased risk disclosures, and effective supervision, the regulatory case for risk sensitivity of capital requirements may be somewhat weakened.

Our view is that banks which have already achieved advanced accreditation under Basel II are well-placed to adopt further improvements to their risk management practices at relatively small cost, given their strong capabilities and robust infrastructure already in place. Some of these banks have indeed positioned their well-developed risk management capabilities as a source of competitive advantage.

RWA calculations was subject to supervisory approval, following model validation and backtesting according to the detailed and prescriptive Basel II requirements.

However, we are not convinced that many standardised banks perceive improvements to their risk management capabilities as a source of potential future competitive advantage, and for most smaller banks the cost of achieving IRB accreditation makes it infeasible. Without the IRB capital incentives, few are likely to make the needed investments to achieve that status, as most see little benefit in doing so¹⁶. Whether this provides a case for retention of substantive incentives depends in part on whether the design and calibration of the standardised approach provides adequate risk sensitivity and prudential requirements which enable smaller banks to compete in markets where simpler risk management approaches suffice.

5. *Basel 4, Competition and Risk Management*

It is significant that the banking markets in which IRB and Standardised capital requirement differences have arguably had most effect on competitive neutrality have been residential mortgage, SME and personal loan markets – which are largely segregated domestic markets. There is little doubt that should the proposed Basel 4 changes be implemented, there will be a significant levelling of the playing field between large IRB banks and smaller standardised banks. But that levelling relates solely to the capital requirements associated with particular asset classes, and in aggregate. It does not imply that inter-bank differences in risk assessment capabilities and effective risk-based pricing within those asset classes will disappear. Consequently, if the IRB accreditation requirements did, in fact, lead to better credit risk assessment and improved pricing, those banks may still retain a commercial competitive advantage.

That leaves the question of whether the likely narrowing of the gap between capital requirements for standardised and advanced banks (either by changes to risk weights in the standardised approach, the application of new, more stringent capital floors in the IRB approach, impact of the leverage ratio, or even the possible demise of the IRB approach) will reduce incentives to bank improvements in risk modelling and management.

As mentioned in the previous section, this is likely to impact the behaviour of standardised and advanced banks differently. Advanced Basel banks, who are more likely today to perceive their risk management capabilities as an important commercial weapon, are more likely to seek to continue to strengthen their risk management capabilities in future. Conversely, standardised banks, which generally do not perceive risk management in this way, are much less likely to invest substantially to improve their risk management in the absence of strong capital incentives to do so.

Therefore, the Basel standard-setters will need to keep this point front of mind as they work through the challenge of calibrating both the leverage ratio and the capital floors in Basel 4. If the minimum aggregate capital level for IRB banks within a particular country (e.g. Australia) is typically determined by either the leverage ratio and/or the capital floor, then that will effectively eliminate the capital incentive for standardised banks to pursue advanced Basel accreditation in that country.

¹⁶ Indeed, even in the presence of such capital incentives, few of the Australian regional banks have done so, to date; this is *prima facie* evidence that they don't perceive the commercial, competitive benefits of doing so.

6. Australian Mortgage Market Implications

The proposed Basel 4 changes have potentially quite significant implications for Australian residential mortgage markets.

One important effect arises from the proposed specification of risk weights for the revised standardised approach. A greater range of risk weights is proposed based on the two risk drivers of Loan to Valuation Ratio (LVR), and Debt Service Coverage ratio (DSC). A minimum risk weight of 25 per cent is proposed for loans with LVR < 40 per cent and DSC < 35 per cent. In contrast, a loan where LVR is between 80-90 per cent and the DSC > 35 per cent would attract a risk weight of 70 per cent.

This implies a potentially significant decline in the capital requirement for loans as they age over time, as the LVR and DSC ratios fall due to principal repayments and growth in borrower incomes. Increased differentiation of pricing for old (“back book”) loans and new loans and increased competition for the former (and increased switching behaviour by borrowers) could be one outcome.¹⁷ Because increases in property values after loan origination are not generally allowed in calculating the LVR for this regulatory purpose, that may also prompt switching behaviour if the new loan triggers a new higher valuation and improved pricing. Of course, under a scenario where house prices collapse and interest rates have increased, the potential for switching is reduced!

These proposed revisions to the capital requirements for banks on the standardised approach also increase their competitive ability in the low-risk end of the mortgage residential market, at the same time as leverage ratio requirements and capital floor proposals may reduce the competitive advantage of IRB banks in that market. As noted earlier, a minimum leverage ratio requirement of around 3 – 3.5 percent would, with current balance sheet structures, become binding for the IRB banks, implying approximately a doubling of the capital requirement (to at least \$3.00 per \$100 of exposure) for mortgage loans at the margin. This could be expected to diminish the appetite of IRB banks for mortgage lending as they may seek to allocate scarce capital to higher-yielding assets; additionally this could increase the required mortgage loan interest rates for IRB banks, inducing them to shift into the higher-risk part of the mortgage market where they will likely retain a competitive advantage compared to standardised banks under the proposed new standardised risk weights.

Whether proposed Basel “capital floors” are relevant here depends on their precise design and calibration, but the proposals of the FSI (Murray) report for minimum risk weights on IRB mortgages of 25 to 30 per cent have a similar effect. In addition, D-SIB capital charges and TLAC requirements for D-SIBS will also work to reduce the competitive advantages of IRB banks.

¹⁷ The ability of lenders to inhibit switching was reduced by legislation preventing charging of exit fees on new variable rate mortgage loans from July 2011.

The current low interest rate environment has reduced the ability of the major banks to offset any funding cost increases from greater capital requirements by deposit interest rate reductions. Moreover, ability to pass increased costs onto mortgage borrowers may be limited at the low-risk end of the market by the increased competitive ability of standardised banks, re-emergence of securitisation based on low-risk, simpler structure, arrangements, and emergence of new disruptive loan business models based on new technology. There is thus potentially likely to be a substantial increase in the loan rates charged on higher risk (high LVR, high DSC) loans. To the extent that such borrowers are the marginal price-setting purchasers for average dwellings, such a change could have significant effects on the sustainability of current house price levels. More generally, the compression of the difference in capital requirements for mortgage loans relative to other lending could be expected to see a shift in the composition of overall loan supply away from mortgage lending (and or relative interest rate adjustments, ie a relative increase in the cost of mortgage finance).

7. Conclusion: Basel and Financial Intermediation patterns

We have noted the crucial importance of the Basel 4 calibration challenge for the Basel standard-setters. There are real risks in setting the levels of the minimum leverage ratio and/or the proposed new capital floor based on standardised approaches too high, rendering the IRB approach for credit risk (and the advanced approaches for market and operational risks) largely meaningless, and reducing or eliminating the risk sensitivity of the Basel framework. For banks which have already achieved advanced Basel status - in particular, IRB status - the likely impact will be to shift capital away from, and increase pricing for, low RWA assets and portfolios, including mortgages. For standardised banks the consequence will be to remove the capital incentive to pursue advanced Basel accreditation.

Assuming that the calibration challenges are effectively managed, one potential consequence of Basel 4 is that it will improve the competitive ability of small, standardised banks relative to large IRB banks in particular credit markets. But, at the same time, both sets of institutions face new challenges from the disruptive business models (such as P2P lenders) emerging, with claims to be better able than traditional banks to use modern technology to assess and price risks of loan applicants. Of course, these claims are currently untested.

Those developments appear most relevant to SME and personal lending, because difficulties in providing liquidity to investors in residential mortgage loans, and relatively low credit risk premiums and interest margins, suggest less opportunity for intrusive, innovative, models in this activity. One potential consequence is growth in standardised banks' share of (a perhaps reduced) residential mortgage loan market.

To the extent that higher capital requirements impose extra costs on bank intermediation, it may be expected that this will reinforce such trends to non-bank and capital markets financing. Growth of a non-prudentially regulated sector is not necessarily a bad situation – the financial system should provide a full spectrum of risk taking opportunities.

In this regard the evolution of the Basel Accord over time is instructive, having initially had a focus on “micro-prudential” regulation which has morphed over time into at least equal emphasis on “macro-prudential” regulation. The case for “micro-prudential” regulation applying to other than a relatively small part of the financial sector (where a “safe haven” for uninformed depositors/investors is provided) is far from clear. And “macro-prudential” regulation (or systemic stability) considerations extend far beyond a focus solely on banking and require analysis of the network nature of the financial sector and its ability to ameliorate and absorb potentially destabilising shocks.¹⁸ Much of the concern with potential growth of the non-regulated sector tends to ignore this factor, and focuses upon its potential to create destabilising shocks.¹⁹ But this should lead to an argument for a broad focus for appropriate oversight and regulation of systemically important institutions, including a robust regime for cross-border SIFI resolution – not that policy should aim to have systemic risks solely within the banking sector regulated via the Basel Accord process.

Finally, with an eye to the future, we note the possibility of negative consequences for the effectiveness and evolution of banks’ risk management practices if the longer-term review of the Basel framework leads to a redesigned future regulatory framework with either minimal or zero reliance on banks’ internal models. Competitive forces alone may not be sufficient to generate adequate resourcing of ongoing improvements in risk management in large, complex banks. If not, the current (albeit, very complex) prescriptive Basel requirements for the advanced approaches to credit, market and operational risks – including supervisory review and approval of risk models, according to the highly technical requirements – will still have a role to play in the development and strengthening of industry risk management capabilities, going forward.

Ultimately, the issue involves three considerations.²⁰ One is the merits of risk-sensitive capital requirements.²¹ The others are the role of the design of such requirements in providing incentives for improvements in bank risk management practices and their impact on the efficacy of bank internal risk management processes. The former can, in principle, be accomplished under the standardised approach. But whether that approach can be tailored to provide appropriate incentives and best alignment with internal bank processes is unclear, leaving a case for retaining the design of the current, risk-sensitive Basel framework, and ‘fixing’ the internal models which are at its heart, along the lines of the many initiatives which are described in BCBS (2014a).

¹⁸ Proponents for the growth of corporate bond markets sometimes refer to potential benefits from it acting like a “spare tyre” to moderate adverse consequences of disruptions to banking markets.

¹⁹ The disruption caused by the failure of hedge fund LTCM in 1998 and the role played by large global investment banks in the GFC are testament to such possibilities.

²⁰ The appendix outlines these issues in more detail

²¹ Wayne Byres, CEO of APRA, has expressed a preference for maintaining risk sensitivity: “APRA’s preference is to find ways to strengthen the current risk-based regime: there are many benefits from a risk-based capital system and we don’t want to see the baby thrown out with the bathwater.”(Byres, 2014)

APPENDIX: The IRB Approach and Bank Risk Management

Ultimately, the issue involves three primary considerations:

1. The merits and priority attached to risk-sensitive regulatory capital requirements
2. The impact of regulatory requirements on the efficacy of bank internal risk management processes
3. Whether the design of such requirements can provide adequate incentives for future improvements in bank risk management practices, and the importance that should be attached to such incentives

I) With regard to the first consideration, we believe it is important to retain risk sensitivity in the regulatory capital framework. It's at least theoretically possible for standardised approaches to achieve some degree of risk sensitivity – it's one of the key premises behind the Basel Committee's recent proposed revisions to the standardised approaches for credit, market and operational risk. However, these approaches are markedly less risk sensitive than the complex, internal model-based, advanced approaches which currently apply to most major banks, and for such banks Basel 4 currently envisages only a secondary role for these standardised approaches, in the calculation of capital floors.

In contemplating any potential radical redesign of the regulatory framework which would eliminate reliance on internal models, the question is whether the standardised approaches can be modified or enhanced so as to achieve a sufficient level of risk sensitivity such that they can be relied upon to assume the primary role for large, complex banks, while avoiding the kind of distortions which characterised Basel 1. In our view, it will be very challenging to achieve this objective without creating a highly engineered and complex risk measurement framework, which would exist in parallel alongside banks' own internal modelling frameworks. Such a regulatory measurement framework would in many respects begin to closely resemble the current advanced approaches, including IRB, except that within such a framework national regulators would be responsible for supplying all risk parameter estimates for all asset classes. Clearly, there are both substantial logistical challenges and risks associated with assigning this responsibility to regulators.

II) With regard to the second consideration, in the context of the debate about the design of the regulatory framework one might be perhaps tempted to think that models are all about calculating risk-weighted assets (RWAs) and minimum capital levels. But bank risk models exist so that management can understand the performance, pricing and risk characteristics of products, customers and portfolios, and therefore successfully manage risks on a day-to-day basis. Ensuring that these models provide accurate, forward-looking risk estimates is absolutely crucial for banks to successfully price and manage risk, and contain aggregate portfolio risks and provisions to within acceptable levels through the economic cycle. In this context, the model-based, advanced approaches within the current Basel framework are designed to reinforce and strengthen bank internal risk management processes, for example via the 'use test', model validation requirements (essentially proving that individual model parameter estimates are of high quality) and detailed supervisory review processes within the IRB. Hence, when contemplating the design of a new regulatory framework without any role for internal models, great care should be taken to ensure that bank internal risk

management processes are not weakened or undermined by the priority attached to the new regulatory requirements.

III) With regard to the third consideration, it is unclear whether standardised approaches can be tailored to provide appropriate incentives to improve risk management practices - this will be very difficult, if not impossible.

All of the foregoing considerations potentially leave a case for retaining the design of the current, risk-sensitive Basel framework, and 'fixing' the internal models which are at its heart, along the lines of the many initiatives which are described in BCBS (2014a).

We note that both APRA and the European regulators have expressed a preference for retaining the design of the current, risk-sensitive Basel framework, and 'fixing' the internal models which are at its heart (ref the quote from Wayne's September 2014 speech & the March 2015 EBA discussion paper "*Future of the IRB Approach*":

<https://www.eba.europa.eu/documents/10180/1003460/EBA-DP-2015-01+DP+on+the+future+of+IRB+approach.pdf>)

Similarly, the industry strongly supports this approach – see the IIF September 2014 document

"*Risk-Sensitivity: The Important Role of Internal Models*":

<https://www.iif.com/file/6245/download?token=iacU7WKZ>

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