CANADIAN WESTERN BANK

March 27, 2015

Secretariat of the Basel Committee
on Banking Supervision (BCBS)
Bank for International Settlements
CH-4002 Basel, Switzerland

Dear Basel Committee members:

Comments on the Basel Committee consultative document
"Revisions to the Standardized Approach for credit risk"

Canadian Western Bank[1] (CWB) appreciates the opportunity to provide comments on the consultative document "*Revisions to the Standardized Approach for credit risk"*. The importance of the new proposed standardized approach (SA) is heightened as it is proposed to be used for capital floors, as well as for smaller banks, smaller non-IRB exposures, and new products and markets. CWB uses the Basel III SA approach for credit risk today and we are currently enhancing our risk management practices to support an eventual move towards the Advanced Internal Rating Based approach (AIRB).

CWB also participated in and supports the submission by the Canadian Bankers' Association.

Overall

We generally support the objectives of the review, such as improving the risk sensitivity of the standardized framework and reducing the use of national discretion. We also support the view that increasing the capital requirements through higher risk-weights for standardized banks is not an objective of the proposal.

However, we believe the objectives have inherent conflicts as increasing comparability of risk-weighted assets (RWA) is inconsistent with the goal of greater risk sensitivity. It is hard to see how the proposal can have any result other than increasing capital requirements for Canadian banks as the proposal increases the risk weights for the lowest risk asset classes. We strongly believe that the proposals should continue to encourage financial institutions to continually enhance their risk management capabilities and that the SA must be set so that it does not create incentives to default to the SA rather than distinguishing between risks.

[1] Canadian Western Bank is a mid-sized Canadian bank offering a full range of business and personal banking services across the four western provinces, and is the largest publicly traded Canadian bank headquartered in Western Canada. CWB, along with its operating affiliates (National Leasing, Canadian Western Trust, Valiant Trust, Canadian Direct Insurance, Canadian Western Financial, Adroit Investment Management, and McLean & Partners Wealth Management) collectively offer a diversified range of financial services across Canada.

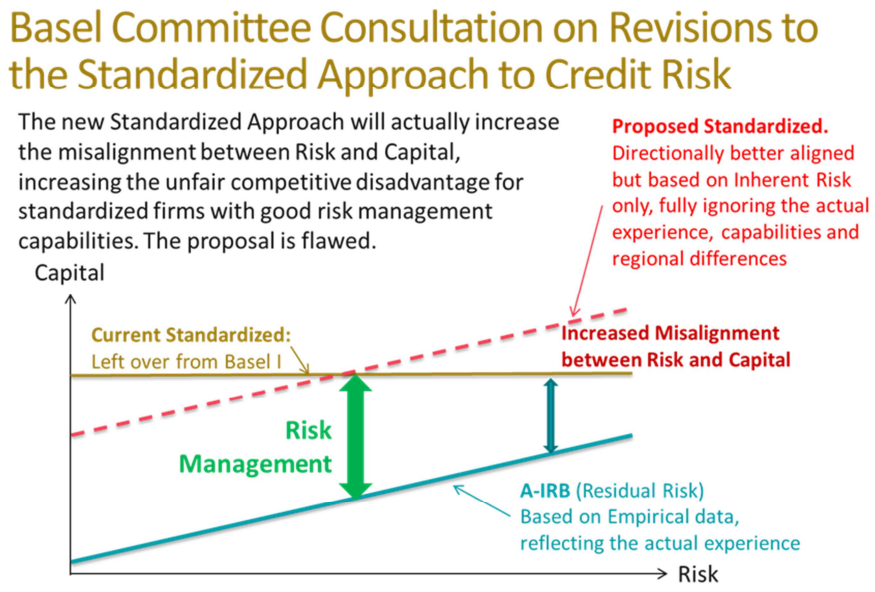
The proposed SA in many aspects is not compatible with Canadian banks' (either AIRB or Standardized) proven history and lending practices evidenced in their loss experience. All Canada's banks have fully adopted the Base III capital framework and the largest banks have effectively operated (and been supervised) using the processes that accompany AIRB approaches for over five years. This practice and the associated supervisory activity contributed to the effective functioning of the Canadian financial services sector through the global financial crisis. In addition, incentives exist in the current rules for Canadian financial institutions to continue to enhance their risk management practices and for financial institutions that are currently using standardized approaches to pursue AIRB applications.

A Theoretical Review of the Proposals

CWB's Executive Vice President and Chief Risk Officer has participated in a detailed theoretical analysis to examine if the new proposals achieve the desired objectives. An executive summary of the review is included in Attachment A. The full version of this paper: A theoretical and empirical Study on the new Standardized Approach for the Credit Risk – Abstract, *Can Basel IV work – What can go wrong? An examination of the new Basel Proposals; Ozdemir, et al., working paper, 2015* is available. This analysis shows that:

1) There are significant shortcomings with the proposal's implicit and explicit assumptions.
2) The new SA is not risk sensitive due to both the exclusion of key risk drivers and the nonlinear nature of the transformation from key risk drivers to risk-weightings.
3) The new SA will not decrease the gap within IRB and will, in fact, increase the gap as RWA for standardized banks are expected to increase.
4) Imposing this very simplistic approach may have wide-ranging implications, including increasing the gap between economic risk and capital, providing perverse incentives, marginalizing good management practices, and ultimately increasing systemic risk.

The graphic below summarizes our view of the existing and proposed SA:



Estimated Impact to Canadian Western Bank and Related Considerations

Existing Basel III Standardized Approach vs. AIRB in Canada

Canada's AIRB experience suggests that the current SA risk weights are quite conservative in the Canadian context and the new SA should, to be more risk sensitive, seek to reduce SA RWAs. While this is partly a matter for calibration, if the revised SA does not generally lower existing SA RWAs for Canadian banks it will have failed to be more risk sensitive.

Capital Ratios and Risk-Weighted Assets (RWA)	Standardized		Advanced Internal Rating Based (AIRB)						Average	CWB Variance
	CWB	**LB**	**BMO**	**BNS**	**CM**	**NA**	**RY**	**TD**	**(AIRB banks)**	**(from Average)**
Common Equity Tier 1 Ratio (Basel III) [1]	8.0%	7.6%	10.1%	10.8%	10.3%	9.2%	9.9%	9.4%	10.0%	**-195 bp**
Risk weightings by category [2]										
Residential mortgages	36.2%	15.4%	8.1%	9.4%	5.7%	11.6%	5.5%	8.9%	8.2%	**28.0%**
Other retail loans [3]	75.9%	63.8%	23.2%	41.6%	29.7%	44.1%	21.3%	44.4%	34.1%	**41.8%**
Business loans [4]	99.8%	99.3%	44.8%	59.2%	39.9%	50.1%	54.7%	45.0%	49.0%	**50.9%**
Pro forma CWB and LB assuming 20% reduction in RWA from AIRB	10.0%	9.8%	10.1%	10.8%	10.3%	9.2%	9.9%	9.4%	10.0%	**6 bp**
Pro forma six largest banks assuming 20% increase in RWA from standardized	8.0%	7.6%	8.4%	8.9%	8.6%	7.6%	8.2%	7.8%	8.2%	**-25 bp**

(1) "Common Equity Tier 1 Ratio (Basel III)" based on Oct 31, 2014 company reports of Canada's eight publicly traded Schedule 1 banks.
(2) "Risk weightings by category" based on Oct 31, 2014 company reports of Canada's eight publicly traded Schedule 1 banks.
(3) Other retail includes personal loans, credit cards and small business loans treated as retail.
(4) Business includes corporate, commercial, medium-sized enterprises and non-bank financial institutions.

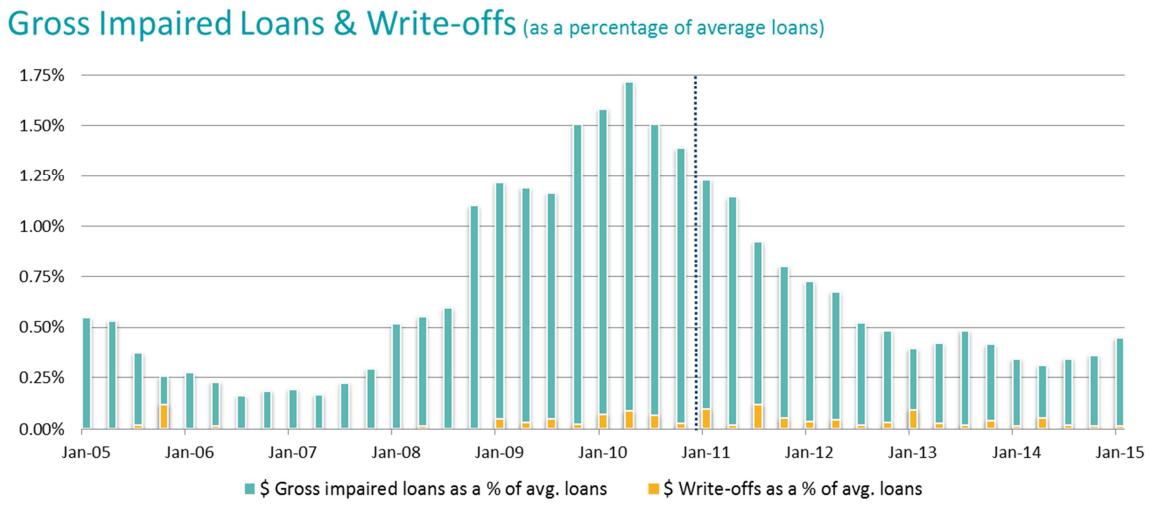
Provision for Credit Losses (measured as a % of average loans)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**10 YR Average**
CWB	0.24%	0.20%	0.16%	0.15%	0.15%	0.21%	0.19%	0.19%	0.19%	0.15%	**0.18%**
Canadian Bank Average (6)*	0.21%	0.20%	0.29%	0.56%	0.86%	0.53%	0.40%	0.37%	0.31%	0.30%	**0.40%**
Variance	0.03%	0.00%	-0.13%	-0.41%	-0.71%	-0.32%	-0.21%	-0.18%	-0.12%	-0.15%	**-0.22%**

To illustrate, the table above provides a comparison of the average risk weighting by portfolio between Canada's largest six banks, all identified as Domestic Systemically Important Banks (D-SIBs) and utilizing AIRB for credit risk, with the next two largest, domestic, non-conglomerate, mid-tier banks both using the SA for credit risk under existing Basel III requirements. Highlighting the business lending portfolio, in particular, the average risk-weighting of the six Canadian, AIRB D-SIBs is 49% while the two Standardized banks have average risk-weighting of ~100%. We highlight two items related to Canadian Western Bank:

- We participate in syndicated loans with all of the six Canadian D-SIBs and therefore, for identical credit risk, CWB carries twice the capital of the AIRB banks (CWB average business loan risk-weight of 100% compared to the D-SIBs' 50%).
- This discrepancy cannot be explained by differences in risk management effectiveness or actual incurred loan losses. As the lower half of the table shows, despite Canadian Western Bank's commercial lending focus on what may be classified as "specialized lending" under the proposals, our historic loan losses are significantly lower than our D-SIB peers.

The Importance of Collateral

We are concerned that the proposals in the consultative document will not fully satisfy the BCBS's objectives. We believe that the key risk drivers based on a two factor model are not appropriately risk sensitive and are overly simplistic. Of particular note is the absence of sufficient consideration of either collateral or credit quality which are crucial factors used in the effective management of credit risk. In order to reduce the gap between the SA and AIRB, we believe the proposals must give more consideration to collateral than is present in either the proposals or the current standardized approach.



The table above provides Canadian Western Bank's ten year experience through the global financial crisis, with gross impaired loans, i.e. those loans that have defaulted, and actual write-offs, both as a percentage of average loans. Through the financial crisis, as expected gross impaired loans increased significantly but given CWB's secured lending business model and effective risk management practices, actual losses, i.e. the loss given default, did not rise proportionately. This experience highlights the importance of underwriting and the underlying sources of credit security, i.e. collateral along with the benefit of appropriate risk management practices and processes.

We recognize the SA will not consider an individual bank's risk management processes but the SA should not ignore collateral for any exposure other than real estate.

Estimate of the Proposals on CWB's Risk-weighted Assets

While we support the objective of increasing comparability of capital requirements between AIRB and SA institutions we strongly believe that the main role of AIRB is to serve as a risk sensitive approach to maintaining capital. Our preliminary review suggests that the proposals are not capital neutral and may, in fact, result in a significant increase over AIRB capital for banks across all credit exposure classes as well as an increase over the existing standardized approach and, in particular, for the specialized lending category.

CWB is participating in the Quantitative Impact Study and the table below does not reflect the results of that deeper dive. The table presents a preliminary estimate of the impact of the proposals on CWB's secured lending business model with a primary focus on business lending.

Item	CWB Change	RWA Impact (millions)
October 31, 2014 actual		$18,026
Interim financing & land banking	$3.3B moves to 150% risk weight (from 100%)	1,670
Investment in debt and equity	$0.5B in our non-trading security portfolio moves to 250 – 300% (from 50 – 100%)	1,000
Off-balance sheets exposures	All commitments will now carry a capital charge	400
Residential mortgages	$1.7B moves to 45% (from 35%) – not adjusted for post-funding reductions in LTV from paydowns	170
Energy	$0.3B moves to 120% (from 100%)	53
Revised		$21,319 (18% increase)

	Existing Basel III SA	New SA Proposals	Change
Risk-weighted assets (millions)	$18,000	$21,300	18%
Basel III CET1 ratio	8.0%	6.8%	(120 bp)
Basel III leverage ratio	7.8%	9.0%	120 bp
Assume common equity raised to maintain 8.0% CET1 ratio			
Additional common equity		$260	18%
Return on equity	14.8%	12.6%	220 bp decrease
Diluted EPS	$2.70	$2.44	$0.26 (10% decrease)

The SA proposal would result in CWB raising and carrying an additional 18% of common equity / regulatory capital with no change in the residual risk to either the business or the Canadian financial system. This additional capital would reduce our performance ratios well below the large Canadian banks, jeopardize the viability of our business model and potentially reduce competition in the Canadian financial sector.

Key Recommendations

We provide detailed responses to the questions in the consultative paper in Attachment B. A few key areas are highlighted below.

Proposed risk drivers

Generally, we find that the proposed risk drivers are in many cases divorced from the tools currently used by banks for credit underwriting. In striving for simplicity, we believe the proposals exclude the most relevant indicators of credit risk. In particular, the limited consideration of collateral ignores one of the most meaningful indicators of Loss Given Default and eventual credit loss.

While the key principles and objectives that the risk drivers must be 'simple', 'intuitive', 'readily available', and 'capable of explaining risk consistently across jurisdictions' are welcome, we are concerned that achieving all of these objectives simultaneously will be very challenging. For example, the use of simple metrics for all jurisdictions and industries fails to meaningfully differentiate risk across a wide-range of portfolios. As an example, the Canadian residential mortgage market is unique, as banks are only exposed to mortgages with down payments of

20% of more. Lenders are protected against default on the other, low down-payment mortgages through government backed insurance.

Finally, we believe that the proposed risk drivers add to pro-cyclicality concerns instead of reducing them. Risk drivers such as revenue, LTV, DSC, and the CET1 ratio will increase in good times and decrease in bad times. By comparison, the current standardized methodology is not prone to pro-cyclicality. Improving risk-sensitivity at the cost of increased pro-cyclicality would appear to have limited benefit and is counter to the Basel III reforms that sought to reduce pro-cyclicality and build in shock absorbers into the banking system.

Credit capital floors

We would expect overall risk weights under the revised standardized framework should continue to be more conservative relative to the AIRB framework as the latter is partially intended to encourage and reward banks for developing more sophisticated processes and systems to assess credit risk and effectively manage capital required for the banks' exposure.

However, the current proposal seems to be built on the concept that a bank may use risk sensitive internal models only if they lead to results above a floor. From a theoretical viewpoint this implies that banks are incented to improve their risk management processes only until they reach that floor. Once operating at the floor or below, all incentives to further improve would disappear and at that stage a bank could rightly question the added value of internal models and AIRB processes. The floor de facto introduces another undesired cliff effect: full recognition of internal models and risk management incentives above the floor, but no recognition at all below.

The larger Canadian banks have undertaken extensive activity and devoted significant resources to develop and maintain robust models, processes and systems to measure and manage credit risk, thereby ensuring capital commensurate with risks in portfolios are adequately captured in compliance with the Basel AIRB framework. Under prudential supervision by the Office of the Superintendent of Financial Institutions (OSFI), we believe that Canadian banks have established more than adequate internal and external governance processes to oversee AIRB implementation. In fact, the two largest Canadian banks currently using the SA, including CWB, have projects underway to enhance risk management practices and move towards AIRB. We therefore do not believe that the contemplated revisions to the standardized framework, including capital floors, should be permitted to adversely impact Canadian banks' existing capital requirements under the AIRB framework and potentially create a step backwards without due consideration and evidence that such risks are not properly capitalized.

We provide further comments on capital floors in our separate response to the BCBS consultative document *"Capital floors: the Design of a Framework Based on Standardized Approaches"*.

Risk-sensitive capital ratios back-stopped by the leverage ratio

The Canadian financial sector has operated effectively for many years with the primary regulatory capital ratio based on a risk-sensitive metric, backstopped by a leverage ratio. We believe the global adoption of the Basel III leverage ratio can provide the effective backstop to

complement risk-sensitive risk-weighted asset calculations without the need for a prescribed capital floor.

Quantitative Impact Study

We are pleased that the BCBS recognizes that the proposals are still at an early stage of development and that consultation and QIS are underway to enhance the proposals. We welcome this opportunity and present some suggestions for improvements in our detailed response. We also believe that the QIS that is underway on the proposed revisions to the SA for credit risk is essential for an accurate understanding of the impact of the proposals, however, we are concerned that the QIS may be of limited use because much of the data required for the two factor risk drivers is not currently available in regulatory capital calculation systems. It will take time for banks to obtain the appropriate data and for supervisors to analyze the QIS data and compare the resulting RWA factors against actual historic loss experience and AIRB RWA in their jurisdictions to determine the reasonableness of the results. We expect that subsequent QIS may be required for the SA is to be properly calibrated.

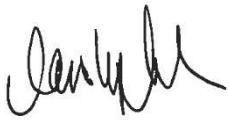
Implementation

Our strong preference is to postpone the finalization of the new SA until after the current Basel III reforms are in place and have been digested by the market. While we are pleased that the Committee will provide sufficient time for implementation, the SA will have very broad ramifications and should not be implemented until its impacts on banks, risk management, and the availability of credit are fully understood. We strongly encourage the BCBS to finalize all of the revisions to the standardized approaches for credit, market, and operational risks before considering the calibration of capital floors.

Given that there are a substantial number of items that still require consultation with the industry across jurisdictions, and potentially material changes in capital and significant IT implementation requirements, we suggest that the timing of finalization of the revisions be at least two years to allow multiple QIS for calibration and studies of macro-economic impacts followed by a further two years for transition once the new SA is finalized.

We thank you for taking our comments into consideration and we look forward to future discussions on these issues.

Sincerely,



Carolyn J. Graham, FCA
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cc: Catherine Girouard, Director, Bank Capital, OSFI
Mary Thomas, Senior Analyst, OSFI

Attachments:

1) Executive Summary: A theoretical and empirical Study on the new Standardized Approach for the Credit Risk – Abstract, *Can Basel IV work – What can go wrong?, An examination of the new Basel Proposals*

2) CWB's detailed response to consultative paper questions

ATTACHMENT 1

A theoretical and empirical Study on the new Standardized Approach for the Credit Risk

Abstract

Canadian Western Bank (CWB) currently uses the Standardized Approach for credit risk, and is moving towards A-IRB implementation. For that reason, changes to the new Standardized Approach and the implementation of capital floors under A-IRB are extremely important to CWB. We agree with the stated intent of the new Standardized Approach, namely to make Risk Weighted Assets (RWA) more risk-sensitive and to close the gap between the Standardized Approach and the A-IRB approach. We have conducted detailed analyses to examine if the new proposals can achieve these objectives. Our analyses showed that:

1. There are significant shortcomings with implicit and explicit assumptions made in the proposals.
2. The new Standardized Approach is not risk-sensitive due to both the nonlinear nature of the problem and missing key risk drivers.
3. The new Standardized Approach will not decrease the gap with IRB; on the contrary, the gap will be increasing – for example, by approximately another 20% for our bank.
4. Imposing these simplified approaches can have wide-ranging implications, including increasing the gap between economic risk and capital, providing perverse incentives, marginalizing good management practices, and ultimately increasing systemic risk.
5. The new proposals are a very significant threat to CWB's business model.

Below we present our study. For a detailed version of this study, please refer to *Can Basel IV work - What can go wrong? An examination of the new Basel Proposals*; Ozdemir, et al., working paper, 2015.

Introduction:

The Basel I framework was not risk sensitive and heavily arbitraged. The Basel II framework is an undeniable improvement over Basel I with much better alignment between the underlying economic risk and the capital charged. Basel III primarily focused on the right-hand side of the balance sheet, dealing with capital quality along with liquidity and trading book which were proven to be fatal during the financial crisis. During this continuous improvement cycle, the Basel committee turned their attention to the issues with the internal model based capital estimations in an effort to deal with the shortcoming of the internal models and reduce variability of the results. The new Basel developments underway include:

1. Revisions to the Standardized Approach for Credit Risk (BCBSd307, 2014);
2. Capital floors: The design of a framework based on standardized approaches (BCBSd306, 2014);
3. Revisions to the operational risk framework (BCBS291, 2014);
4. Fundamental review of the trading book (BCBS265, 2013);
5. The finalization of the Basel III reforms including NSFR (BCBSd295, 2014).

The stated intent, especially for the first two proposals listed above, is to reduce what the Basel Committee calls the "excessive variability" in banks' regulatory capital ratios. Among these measures is a new proposed Standardized Approach. Revisions to the Standardized Approach for Credit Risk attempts to make the Standardized Approach more risk sensitive and better aligned with internal-ratings based (IRB) approach. The new Standardized Approach will be the determinant for capital for the Standardized banks but it will also be used as a 'capital floor' for banks using the IRB approach for calculating capital. Although not explicitly stated, the proposal appears to increase reliance on simpler or standardized approaches, rather than banks' internal models, for the purposes of calculating capital requirements.

Our primary focus in this paper is the first two (interrelated) proposals listed above: the proposed Standardized Approach and its use as a capital floor by the IRB banks. We examine if the stated intention for a more risk sensitive Standardized Approach that is better aligned with IRB is achievable or advisable and, if not, what the potential consequences may be.

The Committee's stated objectives with respect to introducing the Standardized Approach include: reducing reliance on external credit ratings; increasing risk sensitivity; reducing national discretions; strengthening the link between the Standardized Approach and the internal ratings-based (IRB) approach; and enhancing the comparability of capital requirements across banks.

In addition to the new Standardized Approach, there exists a second, related Basel proposal, "Capital floors: The design of a framework based on standardized approaches." The paper does not propose a methodology nor calibration, but states that Basel I based capital floors will be replaced with new floors based on revised standardized approaches for credit risk, as well as for market and operational risk - both of which are currently under consultation. The floor is meant to mitigate model risk and

measurement error stemming from internally modelled approaches. It would aim to enhance the comparability of capital outcomes across banks, and also ensure that the level of capital across the banking system does not fall below a certain level. As noted in the Committee's November 2014 report to the G20 Leaders, the Committee is taking steps to reduce variations in capital ratios between banks. The proposed capital floor is part of a range of policy and supervisory measures that aim to enhance the reliability and comparability of risk-weighted capital ratios. The Committee will consider the calibration of the floor alongside its work on finalizing the revised standardized approaches.

This paper has the following sections:

1. Initial observations: A review of the stated motivation, implicit and explicit assumptions, and their validity;
2. Empirical analysis: Examination of the validity of the proposed implementation;
3. Potential industry impact and unintended consequences;
4. Alternative solutions;
5. Conclusion.

Section 1: Initial observations: A review of the stated motivation, implicit and explicit assumptions, and their validity.

The Basel Committee has identified a number of problems with the current state:

Risk-weighted Assets[2] (RWA) inconsistency and dispersion: Excessive variation in RWAs for the same exposures raises concerns about a level playing field across internationally active banks, and detracts from market confidence in the capital framework. Risk-weighted capital floors enforce greater consistency by narrowing the range of outcomes. By contrast, the leverage ratio does not directly address the inconsistent assignment of risk weights.

Low level of models-based RWAs: Extremely low levels of internally modelled RWAs have been observed for some exposure categories. Even with a leverage ratio in place, there is still the risk that banks could face incentives to grow rapidly in businesses where the calibration of internally modelled capital requirements is low. After the models-based approaches of Basel II were introduced, significant reductions in bank-wide RWAs occurred in a number of jurisdictions. Risk-weighted capital floors are responsive to these issues.

Horizontal inequity in risk-weighted capital requirements: Capital floors make for a more level playing field between standardized banks and banks using internal models for regulatory capital purposes.

[2] Risk-weighted assets are a bank's assets adjusted for the relative risk weight of the counterparty and facility. As such, they are designed to provide a common measure for a bank's risk to ensure that capital allocated to assets matches the risk. For credit risk, they are typically calculated as a function of counterparty probability of default, facility loss given default, maturity, and asset class (retail, corporate, sovereign, etc).

Lack of market confidence in RWAs: During the recent crisis, market participants placed greater importance on banks' leverage ratios, as RWA ratios were seen to be less transparent, less reliable and less objective.

Implicit and Explicit Assumptions:

Included in the above statements, are a number of implicit and explicit assumptions, or direct statements:

1. RWA inconsistency and dispersion are primarily due to the model risk in internal models used in the A-IRB approach.
2. The low level of models-based RWAs indicates that these RWAs are wrongfully assessed at low levels, due to model risk in internal models.
3. The variability of A-IRB based RWAs should be reduced.
4. The low level of models-based RWAs cannot be addressed via leverage ratios.
5. Standardized and A-IRB banks using internal models for regulatory capital purposes should have comparable capital levels to ensure a level playing field.
6. The new Standardized Approaches will provide better alignment with the A-IRB approach.
7. The new Standardized Approaches and the corresponding capital floors will be risk-sensitive. The Standardized Approaches should provide a meaningful differentiation of risk and improve ex post risk sensitivity. Riskier exposures will receive capital charges higher than less risky exposures.
8. Capital charges from the Standardized Approach will provide the correct incentives for banks.
9. There is a lack of market confidence in RWA that is permanent as opposed to transitory.
10. A standardized framework would provide a more consistent and comparable assessment of risk, and the use of the new capital buffers and the new Standardized Approach will make banks' capital levels more transparent, more reliable, and more objective.
11. The new Standardized Approach and the corresponding capital floors will 'supplement' rather than replace A-IRB.
12. Together, the new Standardized Approach, the corresponding capital floors, the leverage ratio, and capital buffers will reinforce the risk-weighted capital framework and promote confidence in the regulatory capital framework.

Unfortunately, a closer examination of these assumptions and statements reveal a number of shortcomings or oversights. These are discussed below:

1. *RWA inconsistency and dispersion are primarily due to the model risk in internal models used in the A-IRB approach.*

The Basel Committee uses the term 'internal model' inappropriately, or, more specifically, too broadly. It is of course true that the input parameters PD, LGD, EAD, and Expected Maturity are estimated using internal models. But their transformation to Regulatory Capital or RWA is done using the Basel II IRB

Risk Weight Functions which are prescribed (and thus external). This regulatory capital estimation function has known shortcomings (most notably their inability to capture concentration and diversification effects and misspecified asset correlations). That is exactly the reason that advanced banks are encouraged by regulators to continue to use Economic Capital in their Pillar II frameworks. At least a portion of RWA inconsistency and dispersion is due to the model risk in Basel II IRB Risk Weight functions.

It is also very possible that RWA dispersion is, at least partially, due to the dispersion in the underlying economic risk after the risk mitigants are taken into account in the A-IRB calculation. For example, better underwriting and problem credit management can result in lower loss histories which support lower probability of default or loss given default rate estimates. It is often the case that such dispersion is in fact warranted, reflecting effective risk management.

2. *The low level of models-based RWAs indicates that these RWAs are wrongfully assessed at low levels, due to model risk in internal models.*

This cannot be definitively concluded, as the low level of models-based RWAs can also be due to risk mitigants such as collateral. Prudent lending practices or more intensive problem credit management which can be supported by empirical evidence, are taken into account in the A-IRB calculation.

3. *The variability of A-IRB based RWAs should be reduced.*

This cannot be a blanket statement. The variability of A-IRB based RWAs for the same amount of economic risk – after empirically provable risk mitigation is taken into account – should be, of course, reduced. Or more precisely, to ensure a level playing field and capital adequacy, firms underestimating their RWA relative to the economic risk they are taking should be deterred. But the remaining variability of A-IRB based RWAs should be maintained as a differentiator of risk management practices among firms.

4. *The low level of models-based RWAs cannot be addressed via leverage ratios.*

We question the accuracy of this conclusion, as leverage ratios have been put into place to act as a non-risk based constraint. Leverage ratios are still in the process of being introduced in a number of countries and it will take some time before their impact can be measured. In addition, it will be difficult to disassociate two potential impacts of leverage ratios on RWAs (first, the incentive to take additional risk where leverage ratios are binding but capital ratios are not; and second, the incentive to shrink balance sheets in light of binding leverage ratios) from wider industry trends.

5. *Standardized and AIRB banks using internal models for regulatory capital purposes, should have comparable capital levels to ensure a level playing field.*

Instead, we believe that a level playing field will be created by ensuring similar capital levels for similar economic risk levels. The Standardized Approach is not equipped to capture true economic risk. Thus, aligning the capital levels of banks using internal models for regulatory capital purposes and those using the Standardized Approach, without the assessment of true economic risk, does not ensure a level playing field. Comparability of capital for different economic risk is not the aim; it would actually be

dangerous as differences in risk practices and regions would be masked. Rather, the aim is to ensure consistent capital for similar economic risk.

6. The new Standardized Approaches will provide better alignment with the A-IRB approach.
Even as an initial observation it is unclear how the proposed framework can improve comparability between standardized and IRB approaches. The risk metrics proposed by the Committee are not currently commonly used in IRB models. For some of the metrics, this is because they are lagging indicators of credit quality. Conversely, under the current approach, some IRB institutions derive internal risk ratings based on external credit rating agency ratings. For these models, it is very simple to compare the standardized and IRB ratings.

A more comprehensive analysis provided in Section 2 shows that the new Standardized Approaches are not aligned with the A-IRB approach. This is due to the following two key reasons:

1. A robust calibration between A-IRB and the standardized approaches is actually not achievable due to the non-linear nature of the problem.
2. Even it were achievable, it would require utilization of economic risk drivers for PDs, LGDs, EaDs and Effective Term to Maturity. The committee claims that 'using limited number of risk drivers still provides meaningfully risk differentiation' (BCBSd307, 2014 p. 5). Our empirical analysis in Section 2 illustrates that the degree of risk differentiation is insufficient and risk sensitivity cannot be achieved when key risk drivers are missed.

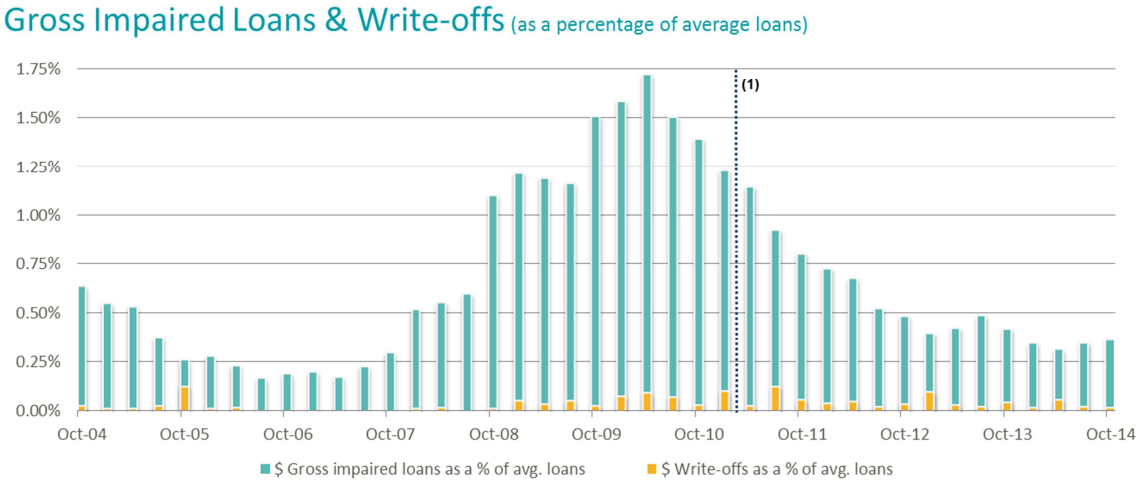
Under the current proposal, many of the key risk drivers are omitted. For example; only two risk drivers -- revenue and leverage -- are used for senior debt corporate exposures and only LTV and DSC are used for residential real estate. It is not possible to accurately assess the economic risk based on only two risk drivers as a proxy for PDs, LGDs, EaDs and Effective Term to Maturity. Risk drivers for Business Risk, Industry Risk, Management Risk, and even much of the Financial Risk, including profitability, are omitted. As another example, there is no risk differentiation between insured and uninsured mortgages.

The risk drivers chosen by the committee, excluding Loan to Value (LTV), all relate to the counterparty itself and not to the facility in particular. As a result, several important factors are missed. First, collateral is not fully taken into account in assessing the risk weights of a facility. Second, the maturity of the facility is not included in the assessment of risk weight although it is a significant driver of A-IRB risk weights. The currency of the facility where it is not consistent with the borrower's income is proposed to be a factor in the risk weight, although this is limited to retail. However, it does not reflect country risk.

The extreme case is Specialized Lending where LGD risk drivers are not considered. We do not agree that this framework can be risk sensitive, as the most critical risk driver is omitted. Specialized Lending may have an inherent PD risk. That is exactly the reason that it is also 'secured lending', where the use of the collaterals and prudent underwriting materially mitigate the actual loss risk. In other words, PDs may be higher but LGDs can be lower. Below, publically available (Canadian Western Bank Group, 2014

p. 12) empirical evidence from the Canadian Western Bank is provided as an example to illustrate the point where increases in defaults did not proportionally translate into increased losses due to Low LGDs, owing to prudent underwriting practices.

Figure 1: LGD can be the most critical risk driver for Secured Lending



This is not to say that every bank is an accomplished underwriter and in fact many contrary examples can be found. The point we are making here is the danger that one-size-fits-all approaches are unable to differentiate the quality of risk management practices among the banks. With no recognition for the empirical evidence, there is no incentive for prudent risk management.

7. *The new Standardized Approaches and the corresponding capital floors will be risk- sensitive. The Standardized Approaches should provide a meaningful differentiation of risk and improve ex post risk sensitivity. Riskier exposures will receive capital charges higher than less risky exposures.*

Our analysis in Section 2 shows that this is not achievable under the current proposal. In reality, banks can have similar standardized capital yet very different economic risks due to the non-risk sensitive nature of the Standardized Approach. Two reasons for the lack of risk sensitivity as discussed above are the non-linear nature of the problem and missing risk drivers. Another reason is the use of the most recent annual financial statement information to assess the risk weight of the counterparty.

- Firstly, this approach is inherently backward looking. Under the current approach, credit rating agency ratings could include forward-looking elements. Conversely, financial statement information could be as much as a year delayed and represents the previous year's impacts. As it is, capital ratios and asset quality ratios tend to be a lagging indicator of solvency.
- Secondly, there may be material changes in the situation of a company in a year which may not be easily taken into account in the proposed framework. For example, changes in the firm's funding structure or business prospects may not be taken into account in their risk weights for up to a year whereas this may be quickly integrated into the credit agency rating in the current framework.

- Thirdly, as the Committee rightly points out, there may be differences in accounting treatment, financial statements may not be audited, or there may be no current requirement on the counterparty to publish the required information in their jurisdiction. As a result, the financial statements may not contain the information required or it may be incomparable with peers in other jurisdictions.

Another reason is that the proposal ignores regional differences. For example, the Canadian mortgage market is fundamentally different from the US mortgage market. Examples of this include home mortgage interest deduction, regulated mortgage insurance industry resulting in more stringent mortgage conditions for high LTV loans, and different laws on foreclosure in each jurisdiction with varying degrees of regulatory intervention.

8. Capital charges from the Standardized Approach will provide the correct incentives for banks.

The increased misalignment between economic risk and capital will provide perverse incentives and will motivate banks to take more economic risk and move up the risk curve where the gap between economic risk and regulatory capital is narrower. This will increase the aggregate economic risk taken, make banks' business models too similar, and increase systemic risk.

9. There is a lack of market confidence in RWA that is permanent as opposed to transitory.

We believe this to be a premature conclusion, and one that cannot be reached without first fully implementing Basel III and reporting on the capital impacts under Pillar III. It will certainly take time and education for the market to become familiar with the new risk metrics being introduced. Only then can we rely on market discipline to assess capital adequacy on a risk-sensitive and economic basis. Financial accounting took years to develop. Risk-Based Valuation will take time to develop, but will be very beneficial - which was the fundamental premise of Pillar III reporting.

10. A standardized framework would provide a more consistent and comparable assessment of risk, and the use of the new capital buffers and the new Standardized Approach will make banks' capital levels more transparent, more reliable, and more objective.

The proposed approach improves transparency as the risk weights are directly calculated from publicly available information. However, as the proposal currently stands, it will mask the true economic risk taken. That is, the actual assessment of risk weights is more transparent and objective, but is divorced from the true economic risks. As a result, the proposed framework is superficially more transparent but makes the measurement of economic risks less transparent, which in turn will make capital levels less transparent and less reliable. Further, the assessment of risk weights no longer uses subjective ratings and is therefore more objective. However, the initial selection of which financial parameters to use by the Basel Committee and the calculation of those inputs by Banks can be subjective. For example, capital ratios are currently not standardized globally, nor are they universally a good indicator of risk.

11. The new Standardized Approach and the corresponding capital floors will 'supplement' rather than replace AIRB.

A more likely outcome is that they will marginalize risk-based approaches and reduce incentives for prudent management of economic risk. Where the capital floor is likely to be binding over the A-IRB capital requirement, there is a disincentive to maintain A-IRB models. This is most readily apparent in cases of low-default portfolios – if a portfolio has a low probability of default, there is no incentive to initially collect, validate and store data on loss history as it takes a considerable amount of data to build a model which would be approved by regulators in place of the floor. Likewise, with the introduction of "Slotting"-type approaches in the Specialised Lending, risk-based models have been replaced by qualitative and quantitative scorecard-based approaches similar to the proposed Standardized Approach. As a result, historical data capture and cleansing processes to support model development may be discontinued.

12. *Together, the new Standardized Approach, the corresponding capital floors, the leverage ratio, and capital buffers will reinforce the risk-weighted capital framework and promote confidence in the regulatory capital framework.*

These exact intersections have not been studied. Using too many metrics will over constrain the problem and will inadvertently create buckets where economic risk and capital will decouple, creating perverse incentives.

Section 2. Empirical analysis: Examination of the validity of the proposed implementation.

Some methodology details are available for the proposed Standardized Approach, but not for the Capital floors. Thus, we will focus on the implementation methodology for the Standardized Approach. The intention of the Basel Committee is to make the new Standardized Approach more risk-sensitive so that higher risk receives higher RWA. To this end, RWA varies based on selected Risk Drivers. Examples are provided below.

Table 1: Risk weights for senior debt corporate exposures where two risk drivers - revenue and leverage - are used.

	Revenue ≤ €5m	€5m < Revenue ≤ €50m	€50m < Revenue ≤ €1bn	Revenue > €1bn
Leverage: 1x–3x	100%	90%	80%	60%
Leverage: 3x–5x	110%	100%	90%	70%
Leverage > 5x	130%	120%	110%	90%
Negative equity(*)	300%			
(*) Note: Negative equity means that a corporate's liabilities exceed its assets.				

Table 2: Risk weights for senior Residential real estate exposures where two risk drivers - LTV and DSC - are used.

	LTV < 40%	40% ≤ LTV < 60%	60% ≤ LTV < 80%	80% ≤ LTV < 90%	90% ≤ LTV < 100%	LTV ≥ 100%
Loans to individuals with [DSC ≤ 35%]	25%	30%	40%	50%	60%	80%
Other loans	30%	40%	50%	70%	80%	100%

In some cases, there are no risk drivers used other than a broad statement that certain lending types are 'inherently' risky.

Table 3: Risk weights for Specialized Lending where two risk drivers – revenue and leverage – are used.

Corporate exposures classified as project finance, object finance, commodities finance, and income-producing real estate exposures will be risk-weighted at the higher of (i) the risk weight applicable to the counterparty; and, (ii) 120%.
Corporate exposures classified as land acquisition, development and construction exposures will be risk-weighted at the higher of (i) the risk weight applicable to the counterparty; and, (ii) 150%.

Developing a risk-sensitive approach requires that RWA is expressed as a function of risk drivers. Formally:

$$RWA^{Standardized} = q\left(Risk\ Driver_i^{PD}, Risk\ Driver_i^{LGD}, Risk\ Driver_i^{EaD}, Risk\ Driver_i^{ETTM}\right) \quad (1)$$

where $q(\cdot)$ is a simple, linear or stepwise linear function. These risk drivers (for example in Tables 1 and 2) are defined as Revenue, Leverage, LTV and DSC.

The Basel Committee states that one key intention is to align the new Standardized Approach with A-IRB. This alignment requires a cross-calibration between the new Standardized Approach and A-IRB. The Committee certainly has the data needed for this, i.e., the risk drivers and the corresponding RWAs from many banks.

Under A-IRB

$RWA^{A-IRB} = f(PD, LGD, EAD, ETT)$, where

$$PD = g\left(Risk\ Driver_i^{PD}\right)$$

$$LGD = h\left(Risk\ Driver_i^{LGD}\right) \quad (2)$$

$$EaD = v\left(Risk\ Driver_i^{EaD}\right)$$

$$ETTM = k\left(Risk\ Driver_i^{ETTM}\right)$$

And *f(·)* is the IRB Risk Weight Function (BCBS128b, 2006 pp. 52-119). The simplest form of cross calibration requires that

$$RWA^{Standardized} = k \times RWA^{A-IRB} \qquad (3)$$

where k>1 defines the margin of conservatism the committee can choose to apply. This leads to

$$RWA^{Standardized} = k \times f\left(g\left(Risk\ Driver_i^{PD}\right), h\left(Risk\ Driver_i^{LGD}\right), v\left(Risk\ Driver_i^{EaD}\right), k\left(Risk\ Driver_i^{ETTM}\right)\right) \quad (4)$$

Immediately, we see two potential challenges with the cross-calibration exercise which is prerequisite to obtaining a risk-sensitive Standardized Approach.

1. $f(\cdot); g(\cdot); h(\cdot); v(\cdot); k(\cdot)$ are highly nonlinear functions; it may not be possible to construct $q(\cdot)$ robustly using a linear function.
2. Calibration requires that an adequately complete set of risk drivers ($Risk\ Driver_i^{PD}, Risk\ Driver_i^{LGD}, Risk\ Driver_i^{EaD}, Risk\ Driver_i^{ETTM}$ be used, whereas the current proposal is insufficient in this regard. A notable example is specialized lending where the key risk driver - LGD, driven by collateral amounts and types - is omitted.

Together, 1 and 2 may result in material misspecification. Below we construct an example in order to empirically examine this.

Empirical Study:

We use a typical SME portfolio for which we have key risk drivers for estimating PD. We calculate PDs for this portfolio using a commonly used vendor model. We then assign 3 sets of LGDs to each of the obligors (25%, 50%, 75%) in order to differentiate facilities based on LGD as well. We assume maturity is 2.5 years and $100 Exposure at Default (EaD) for each facility and calculate RWA for each facility using the Basel RWA function (BCBS128b, 2006 pp. 63-64). This represents a set of calculations for each facility: PD Risk Drivers, LGD differentiation, and finally the corresponding RWA estimation using the Basel function. This is the natural order in estimating A-IRB capital requirements. We will examine if we can estimate the RWAs by directly using the starting Risk drivers, without the intermediate steps of PD estimation and LGD differentiation, which would be approximate to the proposed Standardized Approach. We examine if this approach can sufficiently differentiate risk, as intended by the Basel Committee. In other words, we are examining if and under what conditions the $q(\cdot)$ function can be estimated robustly.

We regress the RWA calculated for our sample portfolio onto the relevant risk drivers, with varying constraints imposed on the functional form. Specifically, we test the following:

1. Fourth-order polynomial regression onto 11 PD risk factors and LGD
2. Linear regression onto the 11 PD risk factors and LGD
3. Linear regression onto the 11 PD risk factors only
4. Linear regression onto the 3 most significant PD risk factors only
5. Linear regression onto Revenue and Leverage only, to approximate the Standardized Approach

Naturally, the goodness of fit will deteriorate from the first approach to the last but our real purpose is to determine if sufficient risk differentiation remains with approaches 4 and 5. If the answer is yes then the new proposed Standardized approach can be sufficiently risk sensitive.

The 11 PD Risk Drivers used in this example are: Return on Assets, Sales Growth, Cash to Assets, Change in AR Turnover, Inventory to Sales, Change in ROA, Cash Flow to Interest Expense, Retained Earnings to Current Liabilities, Current Liabilities to Sales, Leverage Ratio, and Size. Further details are provided in Appendix A.

The example portfolio has been designed to be representative of a generic commercial banking portfolio without specific concentration in any credit rating or asset size band. The portfolio is composed of 3,781 equally weighted obligors duplicated three times with LGDs equal to 25%, 50% and 75% to provide LGD differentiation. Therefore the portfolio is composed ultimately of 11,343 equally weighted obligors. Portfolio characteristics in terms of the PD Risk Drivers and EaD are provided in Appendix B. Table 4 and Table 5 provide portfolio characteristics and Table 6 shows the distribution of risk weights.

Table 4: Distribution of credit quality

PD Band	**Percent of EAD**
0.1%-0.15%	8.57%
0.15%-0.25%	16.19%
0.25%-0.4%	15.31%
0.4%-0.7%	15.66%
0.7%-1.0%	14.20%
1.0%-1.75%	7.41%
1.75%-3.0%	10.55%
3.0%-5.0%	7.62%
5.0%-8.0%	2.83%
8.0%-14%	1.19%
>14%	0.48%

Table 5: Portfolio characteristics

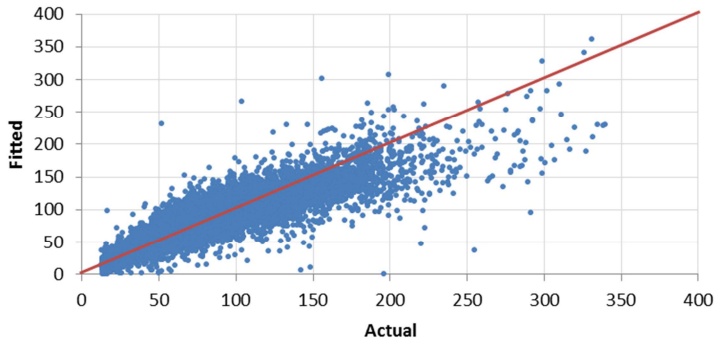
Parameter (Weighted Average)	Portfolio Average
Risk Weight	76.61%
Maturity	2.50 years
Maturity Adjustment	1.33
Probability of Default	1.32%
Loss Given Default	50.00%
Sales ($m)	$294.57m
Average R-square	16.34%

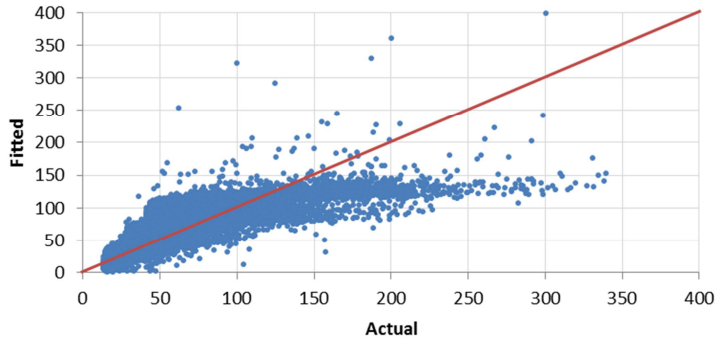
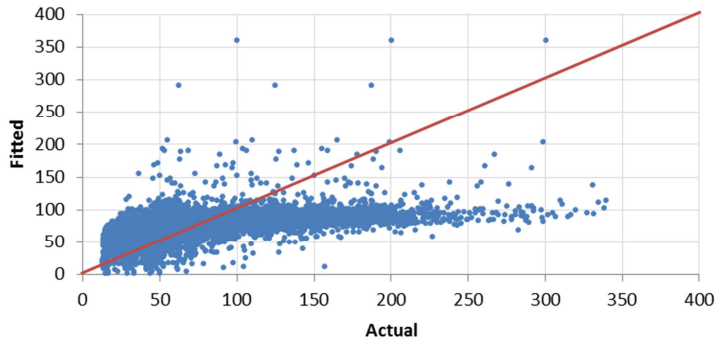
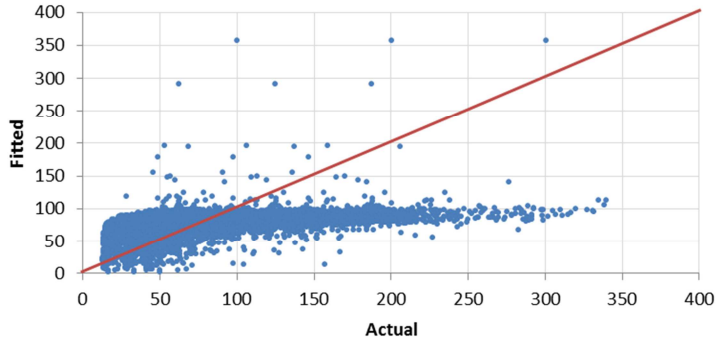
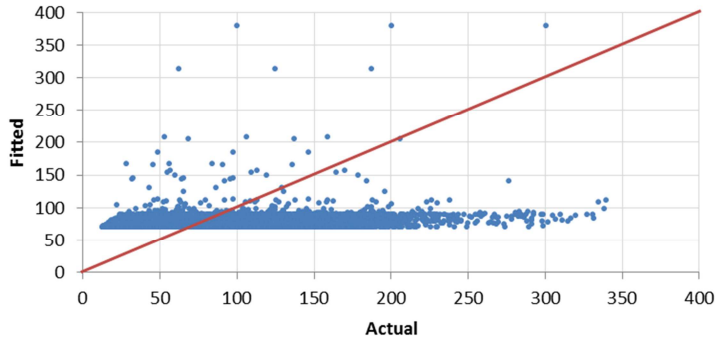
Table 6: Distribution of risk weights

RW Band	Percent of EAD
10%-25%	10.15%
25%-50%	26.53%
50%-75%	23.65%
75%-100%	12.98%
100%-125%	10.73%
125%-150%	6.31%
150%-200%	7.48%
200%-250%	1.56%
250%-300%	0.46%
300%+	0.16%

Below we construct the $q(\cdot)$ function for all of the five test cases. The Goodness of fit is presented in Table 6. When comparing the Actual RWA against the Fitted values, points should fall as close as possible to the 45 degree line plotted in red. The functional forms and p-values are provided in Appendix C.

Table 6: Goodness of fit for 5 test cases:

Run	R^2	Goodness of Fit
1	83%	

Run	R^2	Goodness of Fit
2	58%	
3	18%	
4	15%	
5	6%	

Notably, we find that assuming a linear relationship between RWA and the underlying risk drivers will only offer limited explanatory power (Test Case 2). Furthermore, the omission of the critical LGD variable in the Standardized Approach significantly deteriorates the goodness of fit (Test Cases 3 and 4).

Indeed, the simple construct of assuming RWA is a function of only Revenue and Leverage substantially fails relative to the other functional forms. With only 6% R^2, the Basel Committee's claim that 'using limited number of risk drivers still provides meaningfully risk differentiation' is not justified.

Section 3. Potential industry impact and unintended consequences.

Our analysis so far showed that the new Standardized Approach is neither risk sensitive nor aligned with the A-IRB despite the stated intent. But, more critically, it is not aligned with the underlying economic risk. This can have serious unintended and wide-ranging implications, including increasing the gap between economic risk and capital, providing perverse incentives, marginalizing good management practices, and ultimately increasing systemic risk.

Providing perverse incentives for increased economic risk taking and arbitrage:

Banks naturally focus their attention towards the risk metrics which determine capital. The best outcome is that as the banks manage these drivers of capital in an attempt to reduce their capital charges they also reduce the underlying economic risk. This linkage between economic risk and the capital charge is weak under the Standardized Approach. The banks, as they turn focus to manage the drivers of capital, they are likely to pay less attention to manage the true drivers of the economic risk.

As we have seen with the IRB framework, banks determine the relevant risk metrics which drive their PD models using historical data. In general, banks are encouraged to utilise the same risk metrics in IRB PD models that are relevant to credit underwriting. By aligning the risk drivers in credit underwriting with those in PD models, banks seeking to minimize capital costs (by targeting lower PDs) will automatically underwrite better quality counterparties. In the proposed standardized approach, unlike the IRB framework, many of the proposed metrics are useful risk indicators but are not typically the most significant factors in the credit underwriting process. For example, if counterparties' revenue is a key driver of capital, banks seeking to minimize capital costs will focus on counterparties with higher revenue. As a result, the two processes may become divorced and the incentive to lower capital costs will potentially work against the incentive to underwrite better credit quality names. Currently, credit rating agencies integrate many of the same risk metrics in their ratings as the credit underwriting process in banks. They both also can include additional subjective inputs such as the industry of the counterparty, historical trends, management changes, country risk, etc. Another example is secured lending where the banks working in inherently riskier industries turn their focus to loan structuring, collateral management and other good underwriting practices which are not recognized under the Standardized Approach. The incentive for prudent risk management is divorced from the capital charge.

A related issue is the standardized risk weights acting as a floor for IRB risk weights. A metric with limited risk sensitivity is intended to be used as an exogenous floor for a more risk sensitive metric. This creates the same misalignment between the economic risk and the drivers of capital in the areas where the standardized capital floor becomes binding.

By design, we would expect the risk weights under the proposed Standardized Approach to continue to be more conservative than the IRB framework as this encourages banks develop more sophisticated risk management frameworks including approved risk models to more effectively manage risk and capital. If the proposed Standardized Approach is a floor to the IRB risk weights, then these incentives extend only to the point that the IRB risk weight is equal to the standardized risk weight. This creates an incentive to arbitrage the two frameworks. For example, banks are encouraged to seek out corporate counterparties with relatively higher revenues and lower leverage, but which have relatively higher risk metrics in other areas such that the IRB and standardized risk weights are equal. This would minimize the standardized risk weight but with the theoretically greatest return. This is similar to the incentives presented by having both leverage (i.e. non-risk sensitive) and RWA (i.e. risk sensitive) constraints.

The introduction of the Standardized Approach as a floor will also reduce the incentive for non-IRB banks to move to an IRB approach. There are considerable costs to moving to an IRB approach in terms of processes, models, systems, and approvals. These costs are currently weighed against the benefit of a reduced capital charge under the IRB framework. If the proposed approach was introduced as a floor, then this benefit is reduced.

Increased Systemic Risk:

The divergence of simplified regulatory capital approaches from the true economic capital calculated using internal models introduces costly implications to the entire financial system. Ozdemir and Cubukgil (Ozdemir, et al., 2014) show that the need to co-manage regulatory and economic capital measures can perversely incentivize economically poor risk taking decisions, ultimately at the expense of taxpayers and deposit holders. They demonstrate that closing the "gap" when regulatory capital requirements are overly punitive relative to the level of economic risk results in the acceptance of poor deals, or the rejection of otherwise economically favorable deals. Although short-term ROE is improved under these strategies, society ultimately bears the associated deadweight losses when economic risk is underpriced.

Although simplified regulatory capital approaches are necessary to keep market participants in check and prevent agency costs, the least costly and most sustainable operating environment is one where risk and capital decisions are based on internal models, and firms are not encumbered by overly punitive regulatory capital. In this environment, regulators, rating agencies, and debtholders all have a vested interest in validating the integrity of internal models to keep agency costs to minimum. Furthermore, firms would be rewarded for practicing sound risk management, and would not be perversely incentivized to close the "gap" between regulatory and economic capital at all costs.

Consolidation in the industry due to the disappearance of the business model for smaller, specialized banks, resulting in material social cost:

Today, there are successful smaller banks, like CWB, specialized in certain areas which will be hit particularly hard under the proposed Standardized Approach. Due to the tougher competition from larger banks, they seek to compete in niche areas which may be inherently riskier and, as a result, some

of them have developed good underwriting, loan structuring and collateral management capabilities, reducing residual risk to a manageable level. This business model is under considerable threat. The Basel committee makes an overarching statement that certain types of lending are inherently risky. But after risk management and credit adjudication, the "residual" risk can be low, which can be objectively verified through the firms' historical performance. A proposal focusing only on inherent risk and ignoring the actual risk management capabilities (which can be verified though empirical data such as write off history and empirical LGDs) will increase the capital to a level that these smaller but specialized and highly successful banks will no longer able to compete. This will have an economic and social cost due to reduced competition in the marketplace, decreased efficiency under the big bank model, and increased borrowing cost. During the last financial crisis a considerable systemic cost was borne by the taxpayers. To prevent this from happening again, Basel III effectively imposes a systemic risk charge on systemically large banks. Especially in smaller countries, a portion of systemic risk charge can be passed on to customers via increased fees, etc. Therefore, effectively, it is society that pays for the systemic risk. Demirguk-Kunt, et al., (2012) discuss the issue in detail and found that a bank's interest cost tends to rise with its systemic size and can in part explain why a bank's rate of return on assets declines with systemic size. They found that the typical efficiency ratio is lower for the bigger banks. Overall, their results cast doubt on the need to have very large banks, especially in small countries.

An overly punitive Standardized Approach and increasing gap between the IRB and Standardized Approach capital charges are likely to be the end of the smaller bank's business model; the resulting consolidation will increase systemic risk and the corresponding cost for the society.

Other considerations:

Procylicality:
Many of the metrics chosen are inherently procyclical. For example, CET1 and revenue both tend to fall in a crisis as losses mount and sales deteriorate. Likewise, non-performing asset (NPA) ratios obviously rise as defaults occur. For example, consider Bank Alpha with large bilateral exposure to Bank Beta. If Bank Alpha experiences increased losses, then its NPA ratio would increase. As a result, Bank Beta may be forced to increase Bank Alpha's risk weight in its own capital calculations. This would result in higher RWAs for Bank Beta which would impact its CET1 ratio. If Bank Beta had a higher CET1 ratio, then Bank Alpha may have to increase Bank Beta's risk weight. This would impact Bank Alpha's CET1 ratio meaning a higher risk weight and so forth. Although this is not directly applicable to the other metrics, each metric is likely to move adversely in a crisis causing capital charges to increase. This is counter to the intention of RWAs which should not be overly procyclical.

Increased Concentration Risk:

The proposed Standardized Approach cannot capture diversification of idiosyncratic risk as it is purely additive[3]. Increasing the size of the portfolio does not translate into decrease in idiosyncratic risk as it should. Thus, the capital charge for the larger portfolios with many names will be disproportionately high.

Independent of this distortion, there is an additional systemic concentration risk. Where the A-IRB and Standardized Approaches are arbitraged against each other as explained above, participants may potentially be seeking and taking similar deals where the economic risk is understated.

Practical challenges and implementation cost:

As proposed, the A-IRB banks will need to calculate their Capital under the new Standardized Approach as a floor and also, most likely, for Pillar III disclosure purposes. This will impose some implementation challenges and cost as well.

The current Standardized Approach benefits from being less data intensive and therefore less costly than the proposed approach. Although it is difficult to assess the potential costs at this time, it seems clear that the cost for gathering this balance sheet information decreases with scale. For larger banks dealing with primarily large corporates, this information should be easily available from public sources. In addition, where it is not easily available, these institutions can consider either withdrawing from those segments, absorbing the cost of the punitive risk weights, or gathering the necessary information from private providers. For smaller banks, particularly those which focus on the SME segments, it is unlikely that this data is available from central sources and likely they cannot absorb the cost of the punitive risk weights as these would represent a larger proportion of their exposure. As a result, the cost of the proposed approach is likely to more severely hit smaller, SME focused banks.

One of the significant changes in the proposed framework is the additional financial statement information required for counterparties and the significantly higher punitive risk weight for those counterparties missing data. Under the current Standardized Approach, for example, an unrated corporate would receive a risk weight of 100%. Conversely, under the proposed framework, a corporate without the required financial statement information (unless it is a start-up) would receive a risk weight of 300%. Therefore, there is a much more significant cost to banks for not having the required financial statement information. Given that there is no current requirement for such data in regulatory reporting, it is unlikely that this data will be immediately available for most counterparties.

[3] Basel's Risk Weight Function under Pillar 1 cannot capture the systematic portfolio concentration risk. However, non-systematic diversification is captured as the portfolios are assumed to be infinity granular. In short the function does not capture the systematic concentration risk but overstates the diversification of idiosyncratic risk. The correction is done under Pillar II with the use of Economic Capital models

In industry, there are a number of data providers that have gathered the above financial statement information for a large number of public and private counterparties. However, the cost of accessing this data globally is prohibitive for many smaller banks. Furthermore, financial statement information for smaller corporates may not be available from central providers. This adds significant burden to banks which are seeking to develop relationships with new clients, especially SMEs, or in new geographies as it requires gathering the initial data and the maintaining that data on an ongoing basis.

Another consequence of the additional balance sheet information required is that it is currently very difficult to assess the impact of the proposed risk weights. Many banks do not currently store the required information for all standardized counterparties.

The Committee is also proposing to impose the Standardized Approach floor on all modelled credit risk capital requirements. This means standardized risk weights will need to be assessed for all counterparties, even those under the IRB approach. This obviously necessitates changes in systems and processes within all banks. For larger A-IRB institutions, the incremental cost may be limited where they already have the required data for credit assessment purposes or where existing A-IRB processes can be leveraged to reintroduce the calculation of standardized risk weights for all counterparties. For smaller IRB or standardized banks, the systems and processes may not be easily amended to include these new data elements.

Section 4. What, then, should be done?

We should start with the problem definition. Certain parts of IRB, most notably PD and LGD estimations for Low Default Portfolios, are subject to high model risk primarily due to data limitations. This, coupled with regional discretions, result in high variations in RWAs, which reduce the confidence in the IRB approach. On the other hand, IRB is undeniably the most risk sensitive approach which we have within the Pillar I framework.

The temptation to revert back to simpler more transparent approaches, such as the revised Standardized Approach, is understandable. This temptation could be further justified by the fact that in some regions, a large number of institutions are still on the standardized framework and moving to IRB is a costly exercise.

However, in this paper we found out that the proposed Standardized Approach is neither risk sensitive nor better aligned with IRB. Its direct use by standardized banks and indirect use by IRB banks as a floor will not only fails to address the current issues with IRB but creates perverse incentives and increases systemic risk as discussed in Section 3. The question is then becomes, given the Basel committee has to deal with IRB issues, what would constitute a better set of solutions. Below we listed some suggestions for consideration:

- Revise the new Standardized Approach by adding a full set of risk drivers (most notably LGD drivers) which would capture the economic risk better.
- Do not position the new Standardized Approach as a viable alternative to IRB and instead set realistic objectives about what the Standardized Approach can and cannot achieve.
- Let the smaller banks use the Standardized Approach if they choose to do so; however do not impose an exogenous capital floor on IRB banks based on the Standardized Approach. Having endogenous constraints within the A-IRB framework as opposed to imposing exogenous floors should be preferred. Examples can include setting minimum data standards for internal estimation of PDs and LGDs, using prescribed PD and LGDs until the minimum data standards are met (a form of this is already in place).
- It should be acceptable to require IRB banks to disclose their standardized capital in Pillar III. IRB banks should be able to explain the difference, when justified, between their charged IRB capitals and disclosed standardized capital. It will certainly take time for investors to understand the differences in drivers but as this information is disclosed on a continuous basis, the market will learn how to interpret it.
- Heavier usage of the more advanced Pillar II, EC ICAAP framework to capture the weaknesses in the IRB approach.
- Regulators should conduct periodic benchmarking studies between Banks (this is already common with some regulators). Comparison of PDs and LGDs for common obligors would be very helpful in identifying outliers and establishing a level playing field. Banks which systematically understate their PDs and LGDs can be identified and the issue can be dealt with, particularly where this information is publicly disclosed, without penalizing the banks with robust frameworks.
- Increase comparability between banks by reducing national discretions when possible. Further standardization of the accounting standards increases the comparability. For example recently, the IASB and FASB issued converged accounting standards on recognition of revenue.
- However, forcing comparability by ignoring the underlying differences in economic risk, in reality, decreases the comparability. When this is the case, national discretions should be allowed with justification. For example, a common metric, such as LTV, maybe seen as a comparable risk metric in different jurisdictions. This has been shown to be demonstrably false during the crisis in a number of areas. In another example, leverage levels in certain industries are naturally higher than in others due to the nature of cash flows and funding structures. Similarly, LTV levels in different countries are impacted by a large number of factors such as mortgage loan characteristics which are relevant only to that country, implying that taking LTVs at face value is inappropriate. Examples include Canadian mortgages which are inherently less risky as discussed earlier.
- Do not construct various elements of the regulatory capital framework in pieces, such as new standardized credit risk, operational risk and capital floors, without allowing for full implementation of earlier changes. Once all the pieces are in place, it is possible to jointly calibrate the framework with more consistency and better understanding of the interactions

between the different elements. Alternatively, if changes are implemented in stages then the earlier stages should be fully embedded and understood before subsequent changes are made.

Section 5. Conclusions.

In this paper, we examined two interrelated new proposals from the Basel Committee: The new Standardized Approach on which the standardized banks' capital requirements will be based on, and its use as a capital floor for IRB banks. Basel committees key stated objectives are to increase the risk sensitivity of the Standardized Approach and reduce the capital gap between the standardized banks and the IRB banks.

We examined if these objectives are achievable. In Section 1, we have started with an examination of implicit and explicit assumptions or statements made in these papers, where an initial examination and early observations highlighted significant shortcomings. An overarching statement about needing to reduce the variability in IRB is misleading. The variability of A-IRB based RWAs for the same amount of economic risk – after empirically provable risk mitigation is taken into account – should be, of course, reduced. Or more precisely, to ensure a level playing field and capital adequacy, firms underestimating their RWA relative to the economic risk they are taking should be deterred. But the remaining variability of A-IRB based RWAs should be maintained as a differentiator of risk management practices among firms. Eliminating this variability resulting in similar capital levels for different economic risk is in fact dangerous, as differences in risk practices and regions would be masked. Banks can have similar standardized capital yet very different economic risk due to non risk sensitive nature of the Standardized Approach. We also observed that under the current proposal many of the key risk drivers are omitted.

In Section 2, we constructed an empirical Study. Using a typical SME portfolio we carried out a full RWA calculation, starting with PD Risk Drivers, calculating PDs using internal models, overlaying LGD differentiation and finally calculating the corresponding RWA estimation using the Basel function. This is the natural order in A-IRB estimation. We then examined if we can estimate the RWAs by directly using the starting Risk drivers, without the intermediate steps of PD estimation and LGD differentiation, which would be approximate to the proposed Standardized Approach. We examined if this approach can sufficiently differentiate risk, which is the stated intent of the Basel Committee. We found out that assuming a linear relationship between RWA and the underlying risk drivers offers limited explanatory power. Furthermore, the omission of the critical LGD variable in the Standardized Approach significantly deteriorates the goodness of fit. Indeed, the simple construct of assuming RWA is a function of only Revenue and Leverage substantially fails relative to the other functional forms. With only 6% R^2, the Basel Committee's claim that 'using limited number of risk drivers still provides meaningfully risk differentiation' is not justified.

In Section 3, we discussed that this misalignment between risk and capital can have serious unintended and wide-ranging implications, including increasing the gap between economic risk and capital,

providing perverse incentives, marginalizing good management practices, and ultimately increasing systemic risk.

In Section 4 we listed some alternative solutions including:

- Not positioning the new Standardized Approach as a viable alternative to IRB and instead set realistic objectives about what the Standardized Approach can and cannot achieve.
- Adding full set of risk drivers (most notably LGD drivers) to the new Standardized Approach in order to capture the economic risk better.
- Letting the smaller banks use the Standardized Approach if they choose to do so; but not imposing an exogenous capital floor on IRB banks based on the Standardized Approach which undeniably inferior to the A-IRB in terms of risk sensitivity.
- Building endogenous constraints within the A-IRB framework itself when data availability limits the robustness of the internal models.
- Continue charging the A-IRB capital the IRB banks, but requiring disclosure of their standardized capital under Pillar III.
- Heavier usage of the more advanced Pillar II, EC ICAAP framework to capture weaknesses in the current IRB approach.
- Regulators conducting periodic benchmarking studies to identify the Banks which systematically understate their PDs and LGDs without penalizing the banks with robust frameworks.
- Reducing national discretions when standardization is possible. However, allow national discretion when there are inherent differences in economic risk such as Canadian mortgages.
- Cross calibrate the moving pieces in a harmonized manner.

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Appendix A: Risk Drivers used in PD estimation

Liquid Assets	Liquid assets include cash and liquid securities.
Inventory	Inventory is goods bought for sale or for use in the production of revenue.
Total Assets	The final amount of all gross investments, cash and equivalents, receivables, and other assets as they are presented on the balance sheet.
Current Liabilities	Obligations such as deferred dividend, trade credit, and unpaid taxes, arising in the normal course of a business and due for payment within a year. Also called current debt.
Total Liabilities	The total amount of all financial obligations of a company including all creditor claims on company assets.
Long Term Debt	Amount owed for a period exceeding 12 months from the date of the balance sheet. It could be in the form of a bank loan, mortgage bonds, debenture, or other obligations not due for one year. A firm must disclose its long-term debt in its balance sheet with its interest rate and date of maturity. Amount of long-term debt is a measure of a firm's leverage, and is distinguished from long term liabilities which may include supply of services already paid for.
Accounts Payable	Accounts that are owed to suppliers (trade creditors) as distinguished from accrued interest, rent, salaries, taxes, and other such accounts. Accounts payable are shown under current (short-term) liabilities in the balance sheet. Lenders and investors examine the relationship of these accounts to the firm's purchases in order to judge the soundness of its day to day financial management.
Retained Earnings	Profits generated by a company that are not distributed to stockholders (shareholders) as dividends but are either reinvested in the business or kept as a reserve for specific objectives (such as to pay off a debt or purchase a capital asset). Retained earnings are reduced by losses, and are also called accumulated earnings, accumulated profit, accumulated income, accumulated surplus, earned surplus, undistributed earnings, or undivided profits.
Sales	The amount realized from selling goods or services in the normal operations of a company in a specified period.
EBITDA	EBITDA is earnings before interest, taxes, depreciation and amortization. Computed by subtracting cost of sales and operating expenses (but not amortization and/or depreciation, interest, and taxes) from total revenue. EBITDA figure is used usually as a measure of the financial performance of a firm with large capital, restructuring, or acquisition costs.
Interest Expense	The amount allocated as interest payments made by a company.
Net Income	The total revenue in an accounting period minus all expenses during the same period. If income taxes and interest are not deducted, it is called operating profit (or Loss, as the case may be). Also called earnings, net earnings, or net profit.
Accounts Receivable	Sales made but not paid-for by the customers (trade debtors). Accounts receivables are shown as current (short-term) assets in a balance sheet and are, in fact, unsecured promises by customers to pay in the future. These sums are a key factor in determining a firm's liquidity and may be discounted used in raising a short-term bank loan, or sold to a factor. A provision is usually made in the accounts of a firm to offset uncollectible accounts receivable (bad debts) as losses.
Industry Sector	The industry sector categorizes the company's industry based on internationally recognized industry sector codes.

Appendix B: Portfolio distribution by asset size and sales size

Total Assets Band[4]	Percent of EAD
<500	0.03%
500 - 2,500	0.08%
2,500 - 15,000	0.26%
15,000 - 85,000	0.98%
85,000 - 475,000	8.04%
475k - 2.75m	34.70%
2.75m - 16m	37.03%
16m - 100m	11.50%
100m - 525m	2.91%
525m - 3,000m	2.14%
3bn - 20bn	1.80%
20bn - 100bn	0.48%
>100bn	0.05%

[4] Total assets measured as the final amount of all gross investments, cash and equivalents, receivables, and other assets as they are presented on the balance sheet.

Appendix C: Regression statistics for linear models

Model 2: 58% R Squared	*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.445163321	0.840835638	1.718722728	0.085692415	-0.203021775	3.093348418	-0.203021775	3.093348418
Return on Assets	-0.143775393	0.008666759	-16.58929225	4.42512E-61	-0.160763758	-0.126787028	-0.160763758	-0.126787028
Sales Growth	0.000198704	1.93243E-05	10.28259416	1.08601E-24	0.000160825	0.000236583	0.000160825	0.000236583
Cash to Assets	-0.901222833	0.022978021	-39.22108128	0	-0.946263779	-0.856181888	-0.946263779	-0.856181888
Change in AR Turnover	-0.004909423	0.001109163	-4.426243009	9.67926E-06	-0.007083576	-0.00273527	-0.007083576	-0.00273527
Inventory to Sales	0.032151994	0.002729325	11.7801995	7.59851E-32	0.026802039	0.037501949	0.026802039	0.037501949
Change in Return on Assets	0.051370707	0.007859857	6.5358325	6.59946E-11	0.035964011	0.066777402	0.035964011	0.066777402
Cash Flow to Interest Expense	-1.04831E-06	4.42375E-07	-2.369739676	0.017817407	-1.91545E-06	-1.81181E-07	-1.91545E-06	-1.81181E-07
Retained Earnings to Current Liabilities	-0.000330891	3.45415E-05	-9.579527239	1.17936E-21	-0.000398598	-0.000263184	-0.000398598	-0.000263184
Current Liabilities to Sales	0.014187205	0.000896543	15.82433673	8.45133E-56	0.012429823	0.015944587	0.012429823	0.015944587
Leverage Ratio	0.127138501	0.003730041	34.08501822	2.0807E-242	0.119826968	0.134450034	0.119826968	0.134450034
Size	5.46531E-13	9.19427E-14	5.944257939	2.85961E-09	3.66308E-13	7.26755E-13	3.66308E-13	7.26755E-13
LGD	152.4018071	1.467037773	103.8840375	0	149.5261562	155.277458	149.5261562	155.277458
Model 3: 18% R Squared	*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	77.64606687	0.575488768	134.9219501	0	76.51800812	78.77412563	76.51800812	78.77412563
Return on Assets	-0.143775393	0.012134127	-11.84884539	3.39121E-32	-0.167560406	-0.11999038	-0.167560406	-0.11999038
Sales Growth	0.000198704	2.70556E-05	7.3443078	2.21135E-13	0.000145671	0.000251738	0.000145671	0.000251738
Cash to Assets	-0.901222833	0.032170992	-28.0135235	5.5892E-167	-0.96428361	-0.838162056	-0.96428361	-0.838162056
Change in AR Turnover	-0.004909423	0.001552913	-3.161428968	0.001574142	-0.007953404	-0.001865442	-0.007953404	-0.001865442
Inventory to Sales	0.032151994	0.003821264	8.413967305	4.443E-17	0.024661647	0.039642342	0.024661647	0.039642342
Change in Return on Assets	0.051370707	0.011004402	4.668196065	3.07371E-06	0.029800152	0.072941262	0.029800152	0.072941262
Cash Flow to Interest Expense	-1.04831E-06	6.19359E-07	-1.692578479	0.09056345	-2.26236E-06	1.65738E-07	-2.26236E-06	1.65738E-07
Retained Earnings to Current Liabilities	-0.000330891	4.83607E-05	-6.842144649	8.2072E-12	-0.000425687	-0.000236096	-0.000425687	-0.000236096
Current Liabilities to Sales	0.014187205	0.00125523	11.30247852	1.83933E-29	0.011726735	0.016647675	0.011726735	0.016647675
Leverage Ratio	0.127138501	0.005222343	24.34510798	1.274E-127	0.116901795	0.137375208	0.116901795	0.137375208
Size	5.46531E-13	1.28727E-13	4.245665954	2.19697E-05	2.94204E-13	7.98859E-13	2.94204E-13	7.98859E-13

Model 4: 14% R Squared	*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	79.93863434	0.557349813	143.4263231	0	78.8461312	81.03113748	78.8461312	81.03113748
Return on Assets	-0.111472832	0.009168056	-12.15883013	8.38939E-34	-0.129443826	-0.093501839	-0.129443826	-0.093501839
Cash to Assets	-0.967188455	0.032422294	-29.83096916	2.9607E-188	-1.030741824	-0.903635087	-1.030741824	-0.903635087
Leverage Ratio	0.131281121	0.005299488	24.77241437	5.8914E-132	0.120893196	0.141669045	0.120893196	0.141669045
Model 4: 6% R Squared	*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	70.0055686	0.501025951	139.7244363	0	69.02347009	70.98766711	69.02347009	70.98766711
Sales	6.28878E-10	1.43006E-10	4.397549871	1.10486E-05	3.4856E-10	9.09196E-10	3.4856E-10	9.09196E-10
Leverage Ratio	0.150533854	0.005526143	27.24031338	2.7658E-158	0.139701648	0.16136606	0.139701648	0.16136606

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Executive Summary (p. 1)
Please refer to Canadian Western Bank's (CWB) accompanying letter for our overall comments on key issues. Additional comments are also provided below. *We agree with the stated intent of the new Standardized Approach (SA), i.e., to make Risk Weighted Assets (RWA) more risk-sensitive and to close the gap between the SA and the AIRB approach. We have conducted detailed analyses to examine if the new proposals can achieve these. Our analysis shows that:* 1. *There are significant shortcomings with implicit and explicit assumptions made in the proposals.* 2. *The new SA is not risk-sensitive due to both the missing key risk drivers as well as the non-linear transformation from the risk drivers to risk weightings.* 3. *The new SA will not decrease the gap with IRB; on the contrary, the gap will increase, for example by approximately another 20% for our Bank.* 4. *Imposing these simplified approaches can have wide-ranging implications, including increasing the gap between economic risk and capital, providing perverse incentives, marginalizing good management practices, and ultimately increasing systemic risk.* 5. *The new proposals are a significant threat to CWB's business model.* *For a detailed version of this study, please refer to Can Basel IV work - What can go wrong?, An examination of the new Basel Proposals; Ozdemir, et al., working paper, 2015 included in Attachment 1.* • *We are concerned about removing incentives to improve risk management practices. The proposals only consider inherent risk, rather than residual risk following the considerations of risk management and controls.* • *The proposals assume that "specialized lending" is inherently more risky, and this may be true if specialized lending is completed by non-specialist lenders. On the other hand, if specialized lending is completed with appropriate risk management and control activities, the residual risk can be very low. A proposal only focused on inherent risk ignores risk management activities (unlike AIRB which is built on a firm's own historical data) and is therefore not truly risk-sensitive.* • *We have concerns about the complexity involved in implementing the proposed SA and the impact on the development of advanced modelling approaches. The proposal may discourage banks who have adopted advanced approaches (complete with significant infrastructure investment to develop and validate advanced approaches to credit, market, and operational risk modelling) and divert resources away from ongoing improvement of these systems as the capital benefit to doing so is reduced or eliminated.*

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• *The proposed SA introduces large data collection/maintenance burdens for banks in obtaining and retaining information that may not be presently available. Certain risk drivers could also vary from quarter to quarter, causing instability in risk weight measurement.* • *The definitions of certain terms (e.g., non-performing loans and exposure categories) need to be more explicit and precise, and should also closely align with those in the IRB approach.* • *We believe there are alternate mechanisms that exist under Pillar II and III that can accomplish the BCBS's objectives and ensure that a conservative amount of capital remains in the system and that results are transparent and consistent across jurisdictions. In fact, the proposed Pillar III disclosure requirements are aimed at promoting consistency of disclosures. Heightened supervisory reviews under Pillar II, including cross-sector benchmarking reviews, D-SIB requirements, stress testing, and other ICAAP processes, ensure results are conservative and capital is adequate to withstand downturns.*
Section 1: Background (p. 3)
Limited Drivers While application of only one or two risk drivers will meet the simplicity objective, these limited drivers cannot comprehensively cover the overall risk to the entity and may result in misestimation of the underlying risk. Risk drivers carefully selected and calibrated to local or industry circumstances may be more effective than a blunt fixed risk weight measure as is currently applied to unrated exposures. However, this work will require significant time and resources and we recognize could be subject to manipulation between jurisdictions. **Consistency in Driver Calculation** If different reporting banks have exposure to the same obligor, one would expect that the calculated financial driver and hence the reported risk weight should be the same. All jurisdictions will need to work closely together to ensure the reporting requirements are consistently enforced given there will be differences in accounting standards. **Calibration of Risk Weights** Subject to Quantitative Impact Study (QIS) results that will provide an estimation of the impact of the SA proposed risk weights and compare to each jurisdiction's AIRB results, we expect substantive work and consultation with regulators and industry will be required to calibrate appropriate risk weights and that a subsequent QIS will likely be required.
(1.1) Objectives of the review (p. 3)
We support the Committee's objectives but recognize that the individual objectives can conflict, and are complex with a very aggressive implementation timeline. We question whether the objectives are attainable.

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In an effort to distance its reliance on external ratings, the BCBS has selected certain financial metrics and proposed they sufficiently represent risk. In our opinion, it is not possible to effectively assess an enterprise or facility credit risk using a select few drivers which are historical by nature and do not consider any forward-looking information, underlying collateral, strength of management, industry position, country of exposure, diversification, etc. Before changing the SA and introducing capital floors, we recommend the Basel Committee investigate the removal of national discretion which presently creates differences in RWAs (in the current SA and AIRB approaches). This change would assist in making existing ratios more comparable amongst jurisdictions without affecting national discretion to require a bank to hold more capital under Pillar 2.
(1.2) Weaknesses of the current standardized approach for credit risk (p. 3)
Increased granularity will only enable greater risk sensitivity if the calibration is based on empirical data rather than arbitrary risk-weight ranges.
(1.3) Principles and rationale for the review (p. 4)
We largely agree with the stated principles. However, as IRB provides the more accurate approach to determining risk weighting, banks should be encouraged to migrate to IRB where possible and appropriate and SA risk-weights should be higher than AIRB. The crucial factor to be evaluated is "how much higher". Any chosen set of risk drivers may differentiate risk, but certain drivers are more meaningful from a credit risk perspective. Any wholesale change of risk drivers requires an extensive re-calibration to ensure the resulting risk-weights are commensurate with the underlying residual risk and that there are no unintended consequences.
Section 2: Proposed revisions to the standardized approach for credit risk (p. 5)
Risk drivers should be based on consistent and transparent financial statement items. Consideration should be given to: • Clarifying the information used to calculate the risk drivers; and, • Addressing potential significant discrepancies due to the use of different accounting frameworks. The amount of necessary information at the granular level is significant and potentially difficult to obtain for purchased assets.

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(2.1) Exposures to banks (p. 5)
Definition 2.1 (i) **Risk Drivers (2.1 ii)** Achieving Risk Sensitivity requires utilization of economic risk drivers for Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EaD) and Effective Term to Maturity (ETM). The SA proposals conclude that 'using limited number of risk drivers still provides meaningfully risk differentiation' (BCBSd307, 2014 p. 5), however, our empirical analysis in Attachment 2 illustrates that the degree of risk differentiation is insufficient and risk sensitivity cannot be achieved with the proposed SA key risk drivers.
Q1. What are respondents' views on the selection of the capital adequacy ratio? In particular, is the CET1 ratio superior to the Tier 1 ratio or the Leverage ratio? Do respondents agree that it is necessary to require calculations in accordance with Basel III in order to ensure a consistent implementation? (p. 7)
We believe that CET1 is higher-quality loss-absorbing capital, and represents confidence that a bank is likely to remain a "going concern," but total capital is a better prediction of whether a senior bank creditor is exposed to loss. We also recognize that leverage exposures are not risk-sensitive. As most banks are now generally managing to CET1, we agree that CET1 would be an appropriate measure for the probability of default of banks that are required to publish this metric although total capital ratios are a much better indicator of whether a creditor bank is exposed to loss. Nevertheless, we have a number of concerns with the choices that are presented, as noted below: • Common Equity Tier 1 and total capital ratios are comparable and highly correlated. While these ratios indicate capital adequacy, they are managed ratios by the bank that do not change materially in most cases and will not be sufficiently sensitive (particularly when some weak institutions may be required by their regulators to add capital). • Replacing external ratings with the proposed risk drivers will result in a loss of information and actually reduce risk sensitivity, contrary to the Committee's intent. There are many factors including capital adequacy that are included in external and internal credit ratings that should be considered.
Q2. Do respondents believe the net NPA ratio is an effective measure for distinguishing a bank exposure's credit risk? What alternative asset quality measure, if any, should be considered by the Committee? (p. 8)
CWB has no comments.

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Q3. Do respondents have views on the proposed treatment for short-term interbank claims? (p. 9)
CWB has no comments.
Q4. Do respondents have suggestions on how to address these concerns on the treatment of exposures to banks? In particular, do respondents have views on how to treat exposures to banks not subject to Basel III in a consistent and risk-sensitive manner? (p. 10)
One alternative would be retaining external credit ratings and sovereign ratings for Bank exposures, which may be used together with a metric based on bank ratios.
(2.2) Exposures to corporates (p. 10)
CWB has no comments.
Q5. Do respondents have views on the selection of risk drivers and their definition, in particular as regards leverage and the incorporation of off-balance sheet exposures within the ratio? Would other risk drivers better reflect the credit risk of corporate exposures? (p. 12)
We have the following comments/concerns regarding the use of the two proposed risk drivers for corporate exposures: 1. Considering only revenue and leverage is too limited in scope, and a misrepresentation of credit risk. Corporate exposures are driven by many more factors such as industry and region. These factors, along with financial factors such as revenue and leverage, are used extensively for credit rating analysis in the IRB approach. 2. The two ratios proposed fail to differentiate between different types of business (e.g., Agriculture/Service/Manufacturing). These ratios vary greatly between different sectors. Ratios may also not be available or stored in information systems for smaller corporates and banks currently using the SA. This would automatically penalize the risk weight associated with unrated corporates. 3. Selected risk drivers (Revenue and Leverage) for corporate exposures could be volatile from quarter to quarter, causing instability in risk weight measurement. 4. Leverage can vary significantly and systematically across jurisdictions and sectors. While obligors in some industries (e.g., regulated

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utilities) typically perform well with highly leveraged balance sheets, in other industries this is a sign of deteriorating credit quality. In addition, for private companies, jurisdictional corporate tax regulations which lead to tax planning transactions may result in leverage ratios that are not indicative of the underlying risk of the borrower.

5. Leverage ratio will punitively affect smaller borrowers in capital-intensive industries (e.g., construction, forestry). Loan structure (repayment schedule) has the potential to reduce LGD; shorter amortizations are routinely applied to mitigate high-risk situations (e.g., industries subject to volatility).
6. The proposed 300% risk weight for corporate borrowers that have not provided financial information is overly punitive and does not reflect underlying risk. Financial statements are not requested (or may not be provided by the borrower) for a number of reasons including strength of collateral (e.g., liquid secured facilities), type of borrower (e.g., small business) or nature of the loan.
7. A discussion of liquidity metrics is conspicuously absent from this section and should also be considered in the selection of appropriate risk drivers.

We offer the following suggestions for improvement:

1. Having individual banks provide their internal customer ratings through a third-party service provider would enable the aggregation of an average rating for use in standardized calculations.
2. If it is necessary to choose only two risk drivers, leverage and DSC are an alternative pair. All else being equal, revenue may further differentiate relative risk but is not necessarily conclusive and will unfairly penalize smaller borrowers if revenue effectively carries a 50% risk weight.
3. Other leverage measures such as Total Debt/Tangible Equity, Debt/EBITDA can also be considered.
4. Other risk drivers reflecting credit risk would be operating efficiency or liquidity ratios. We do not believe revenue and leverage alone appropriately reflect a company's ability to meet its obligations over the medium/long-term.

Q6. Do respondents have views on the appropriateness of the proposed treatment, especially with regard to SMEs? And about the more lenient treatment for start-up companies? (p. 12)

The proposed risk weights for corporates, as they apply to SME, seem to be counter-intuitive when compared with IRB corporate SME capital treatment. Specifically, under the existing frameworks for a corporate and a corporate SME with the same PD, LGD and maturity, the SME size adjustment factor results in a more favorable capital treatment for the SME. In practice, SME exposures are typically collateralized and collateral is not considered under the mitigation rules. The proposed floor of 60% for corporate exposures is too high for some high-quality companies (e.g. high investment grade equivalent) and does not reflect IRB measures.

The size of borrower is generally one of several measures used to assess the relative credit riskiness of a borrower. If used as a primary

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driver, i.e., 50% weight in this proposal, the range of risk weights from 90% to 130% is not sufficiently sensitive, resulting in over or under estimation. We suggest possible alternative drivers for SMEs including the Current Ratio and Debt/Interest Coverage ratios. Without additional, relevant factors, this important economic segment (SMEs) could be penalized resulting in unintended consequences such as restrictive lending. Consideration should be given to developing a separate risk-weight table for SMEs. We also find that the material jump from 90% - 130% for most corporate exposures to 300% for very high leverage or negative equity is too steep.
Q7. Do respondents think that the risk sensitivity of the proposal can be further increased without introducing excessive complexity? (p. 12)
Risk sensitivity may be improved with little added complexity. Under the current proposal, many key risk drivers, critical to underwriting decisions, are omitted. For example: only two risk drivers – revenue and leverage – are considered for senior debt corporate exposures and only Loan to Value (LTV) and Debt Service Coverage (DSC) are considered for residential real estate exposure. It is not possible to accurately assess the economic risk based on only two risk drivers as a proxy for PD, LGD, EaD and Effective Term to Maturity. Risk drivers for Business Risk, Industry Risk, Management Risk, and much of the Financial Risk including profitability, are omitted. As another example, there is no risk differentiation between insured and uninsured mortgages, which present significantly different residual risk in the Canadian marketplace. The risk driver proposals, excluding LTV, all relate to the counterparty itself and not to the specific facility. As a result, several important factors are ignored. Most importantly, collateral is not fully taken into account in assessing the risk weights of a facility. Second, the maturity of the facility is not included in the assessment of risk weight although it is a significant driver of AIRB risk weights. The currency of the facility, where it is not consistent with the borrower's income, is proposed to be a factor in the risk weight, although this is limited to retail exposure. This distinction does not reflect country risk. The extreme case in the proposal relates to exposures categorized as Specialized Lending where LGD risk drivers are not considered. We do not agree that this framework can be risk-sensitive, as the most critical risk driver is omitted. We recognize that Specialized Lending may have inherent PD risk. This inherent risk can be effectively mitigated through a 'secured lending' business model, where the use of the collaterals and prudent underwriting materially mitigate the residual risk and actual losses. In other words, secured lending (i.e., specialized lending) PDs may be higher but LGDs can be lower. Below, publicly available (Canadian Western Bank Group, 2014 p. 12) empirical evidence is provided to illustrate the point where historic increases in defaults did not translate into proportionally higher losses due to low

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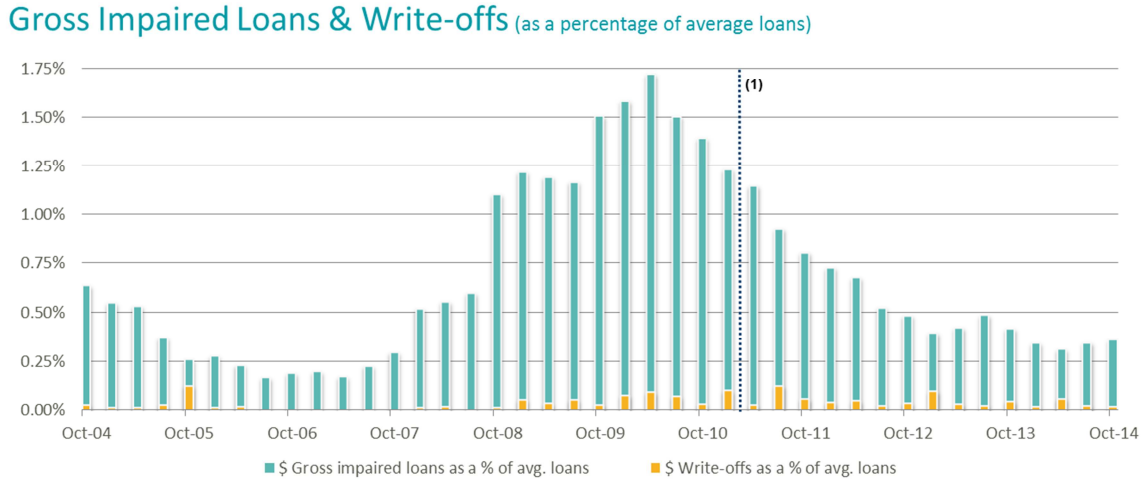
LGD, owing to prudent underwriting practices including appropriate sources of collateral. LGD can be the most critical risk driver for Secured Lending.    This is not to say that every bank is an accomplished underwriter, and in fact many contrary examples can be found particularly where specialized lending is carried out by non-specialized lenders or institutions. The point to be made is the danger associated with "one-size-fits-all" approaches that do not effectively differentiate the quality of risk management practices amongst banks. With no recognition for the empirical evidence, there is no incentive for prudent risk management.
Q8. Do respondents agree that introducing the specialised lending category enhances the risk sensitivity of the standardized approach and its alignment with IRB? (p. 13)
The new category for SA increases the risk weights for specialized lending to levels that are significantly larger than IRB measures or the current SA. This change weakens the link between standardized and IRB approaches as LGD risk drivers are not considered under the standardized approaches. We do not believe that imposing a risk weight floor enhances risk sensitivity. There is also no empirical data to support applying an additional risk weight floor for specialized lending categories and, similar to the treatment of corporate exposures, doing so does not take into account

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that specialized lending facilities are generally well secured. See also CWB's response to question 7. Income producing real estate should have a separate treatment (possible drivers of project DSC and LTV).
(2.3) Subordinated debt, equity and other capital instruments (p. 13)
The proposed risk weight treatments for equity and capital instruments are too high, in our view, and do not reflect inherent risk. Increases in the RW% for subordinated debentures and preferred shares to 250% is significantly above existing capital requirements based on AIRB models. Subordinated debentures issued by strongly capitalized corporates are inherently less risky than senior debt of companies with a weak capital/liquidity position but receiver a higher proposed risk weight.
(2.4) Retail portfolio (p. 13)
The proposed calibrations are such that the balance of risk-adjusted performance will be tipped heavily in favour of the regulatory retail category which attracts a flat 75% across a diverse mix of consumer lending. This could incent banks to scale back secured real estate lending in favour of higher risk and more volatile businesses such as credit cards, student loans, and personal investment loans. A more risk-sensitive and granular methodology is recommended in order to restore the balance of risk-adjusted performance and deter regulatory capital arbitrarily or an increase in economic risk.
Q9. Can respondents suggest, and provide evidence on, how to increase the risk sensitivity of the regulatory retail exposures treatment, either by differentiating certain product subcategories for which a specific risk weight may be appropriate; or by suggesting simple risk drivers that could be used to assess the risk of all retail exposures? (p. 14)
There are several ways to increase risk sensitivity of the regulatory retail exposures treatment: • Differentiate between secured and unsecured exposures. We believe that the current 75% SA risk-weight should be maintained for unsecured retail exposures. However, we believe that a materially lower risk-weight is appropriate for secured retail exposures based on the objective value of collateral at inception. • Consider delinquency, utilization, term, product type, and LTV. Empirical evidence confirms that all of these drivers provide a meaningful differentiation of risk. These drivers should be available for most jurisdictions and at most financial institutions.

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(2.5) Claims secured by real estate (p. 14)
• The proposed risk weights are not consistent with the capital neutral objective of the proposals. Proposed risk weights for mortgages with LTV < 80% would be higher than the current 35%. • We do not consider it appropriate to consider commercial real estate as an unsecured exposure as collateral is an integral part of the underwriting for this loan type.
Q10. Do respondents agree that LTV and/or DSC ratios (as defined in Annex 1 paragraphs 40 and 41) have sufficient predictive power of loan default and/or loss incurred for exposures secured on residential real estate? (p. 16)
We agree that LTV has sufficient predictive power of LGD and a substantial (but not sufficient) predictive power of PD. By contrast, the DSC ratio would have limited predictive power at loan origination. Banks do not generally request borrower income information after the initial granting credit for residential real estate exposure. DSC has some predictive power of PD, but its predictive power is less than for LTV or other risk drivers. This may be due to the fact that, as part of prudent mortgage adjudication, Canadian banks already verify that the customer has the means to repay their mortgage, independent of the performance of the property. Once this is confirmed, a lower or higher DSC ratio no longer provides significant risk differentiation among approved and funded mortgages. We offer further comments below on the LTV ratio: • This is a predictive loss measure if valuations are updated as market conditions change. The proposal to keep the value constant at origination will not achieve risk sensitivity but is a more simplistic approach for standardized banks. • Predictive power of LTV varies across jurisdictions with varying legal and tax regimes (e.g., US foreclosure laws *vs.* Canadian laws) and property price volatility histories. One grid for all jurisdictions does not recognize country-specific risk profiles. • LTV becomes less relevant in jurisdictions with longer-term mortgages as refinancing is not an issue, although collateral value still is. In Canada, mortgage terms are generally five years or less with amortization of up to 30 years while other jurisdictions may have 20 year mortgages.

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Q11. Do respondents have views about the measurement of the LTV and DSC ratios? (In particular, as regards keeping the value of the property constant as measured at origination in the calculation of the LTV ratio; and not updating the DSC ratio over time.) (p. 16)
Although we understand the practicality of using LTV and DSC based on values at the time of origination, both property values and consumer servicing capacity will vary significantly due to changing market conditions and borrower employment status, age, etc.. That being said, it is impractical to use other indicators, such as debt to income, which may not be available at the borrower level. We raise the following questions and concerns in relation to LTV and DSC: • The Committee proposes using after-tax income in the calculation of the DSC ratio. Presently, the ratio is calculated using gross (pre-tax) income in Canada. Net income would be difficult to estimate and apply consistently across financial institutions and jurisdictions. Payments can also be defined in many different ways (% of balance, actual payment, minimum payment, etc.) making the use of this ratio impractical. Additionally, the use of the ratio as measured at origination does not appear to accomplish the goal of increasing the risk sensitivity of the approach since mortgage exposures can remain "on book" for many years after origination. • It may be difficult to ensure all exposures secured by the same property are risk-weighted the same (e.g., multiple mortgages, lines of credit, etc.). • It will be difficult to ensure that adjustments to the calculation of DSC for variable rate loans are consistent across jurisdictions. • How would the mortgages that are renewed be treated? Would they be viewed as "newly originated" mortgages with new ratios?
Q12. Do respondents have views on whether the use of a fixed threshold for the DSC ratio is an appropriate way for differentiating risks and ensuring comparability across jurisdictions? If not, what reasonably simple alternatives or modifications would respondents propose while maintaining consistent outcomes? (p. 16)
The cost of collecting and maintaining DSC information should not be underestimated for less advanced financial institutions. Alternatively, a well-defined LTV could be used in combination with other general retail risk drivers such as delinquency, utilization/proportion of loan repaid, and product type in order to increase the risk sensitivity of the approach.
Q13. Do respondents propose any alternative/additional risk drivers for the Committee's consideration in order to improve the risk sensitivity in this approach without unduly increasing complexity? (p. 17)
CWB has no comments.

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Q14. Which of the two options above is viewed as the most suitable for determining the risk-weight treatment for exposures secured on commercial real estate? (p. 17)
We believe that Option A is inappropriate and does not reflect Canadian experience when combined with appropriate risk management and controls. Option B also has significant weaknesses. Under Option A, credit quality is the only consideration while under Option B the focus is on the value of collateral in relation to the outstanding amount of the loan. We believe that both credit quality and collateral must be considered. Option A focuses on counterparty default risk and assumes recovery on real estate is similar to unsecured exposures. The treatment of commercial real estate as unsecured with a maximum risk weight of 300% would promote the reduction of lending to commercial borrowers or increase the interest rate on funds borrowed. As a suggested improvement, consideration should be given to a risk-weighting based on an LTV threshold. Option B focuses on expected recovery based on LTV. Given our earlier comments on LTV, this risk factor is also not the best choice for risk weight measurement as the Option B floor of 75% risk weight is too high and not reasonably comparable with IRB measures. We don't understand the rationale for using only one risk driver for commercial real estate *vs.* two risk drivers for residential real estate. Based on the proposed definitions, i.e. primary source of repayment is not from income generated by the real estate collateral, the contemplated commercial real estate (CRE) exposure would primarily be owner-occupied real estate. The risk weights for exposures secured by commercial real estate provide a very narrow range with no consideration for the nature of the loan (e.g., real estate development, income producing real estate, owner occupied) or the quality of the collateral (e.g., land *vs.* income producing, residential, retail, office, etc.). Rather than having to choose between two options – one which focuses on PD and the other on LGD – the final table should consider both.
Q15. What other options might prudently increase the risk sensitivity of the commercial real estate treatment without unduly increasing complexity? (p. 17)
CWB has no comments.

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(2.6) Risk weight add-on for exposures with currency mismatch (p. 17)
CWB has no comments.
Q16. Do respondents agree that a risk weight add-on should be applied to only retail exposures and exposures secured by residential real estate? What are other options for addressing this risk in a simple manner? (p. 18)
CWB has no comments.
(2.7) Off-balance sheet exposures (p. 18)
Proposed revisions to the credit conversion factor (CCF) for commitments with maturity greater or less than a year (50% CCF, 20% CCF) to a 75% CCF will require banks to hold substantially more capital. We believe the current differentiation based on maturity provides sufficient risk sensitivity. We would like to understand the basis for applying a 10% risk weight for unconditionally or automatically cancelable commitments. Is this appropriate vs. historical experience and/or our ability/willingness to withdraw commitment? We would like to understand the rationale for the proposed change and, in particular, why it is reasonable for the different types of exposures affected by the change. We note that usage of certain facilities may decline under stress and evidence should be considered to ensure that the change is appropriate for all classes of cancellable exposures.
Q17. Do respondents consider the categories for which a CCF is applied under the standardized approach to be adequately defined? (p. 19)
Greater differentiation in categories could allow for better risk sensitivity. We believe additional differentiation would be more risk sensitive.

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Q18. Do respondents agree that instruments allocated to each of the CCF categories share a similar probability of being drawn and that the probabilities implied by the CCFs are accurate? Please provide empirical support for your response. (p. 19)
We agree in principle with the Committee's proposal to review the CCF for unconditionally cancellable commitments for Retail exposures and Retail Mortgages (HELOC); however we note that a client may utilize certain types of credit facilities differently in times of stress. We seek clarification on the proposed 10% CCF and the resulting capital charge for unused facilities as they may be disproportionate to the underlying risk. Our suggestions would better align the SA treatment with the AIRB approach, where CCF is estimated based on the historically observed additional drawings prior to default, which are not all zero. However, in order to accurately reflect the true risk of these commitments, not only their CCF but also their risk weight under the SA should be adjusted to better align with those under the Advanced IRB approach. Otherwise, the risk weights for the revolving retail exposures (including both their drawn and undrawn portions) as a percentage of their outstanding balances would be misaligned with the actual risk of these exposures. Thus the reluctance to recognize a much lower credit risk of the first customer in the SA risk weight could potentially create misaligned incentives for the banks and results in standardized outcomes which contradict the AIRB approach (which assigns a much lower risk weight to the first customer).
(2.8) Past-due loans (p. 19)
CWB has no comments.
Q19. What are respondents' views on the alternative treatments currently envisaged for past-due loans? (p. 19)
We agree with the Committee that risk weights should reflect the level of provisions. An add-on which would vary based on a function of the amount of provisions would appear to be more risk-sensitive. We suggest the risk weight for past-due loans be based on the higher of a flat risk weight and a risk weight based on the sum of provisions

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and an add-on. A flat risk weight would ensure that there is a minimum capital level, especially in cases where provisions may not have been assessed yet or may be insufficient. The latter component of the calculation recognizes that banks have already established provisions and add-on accounts for uncertainty in the provisioning. An add-on that varies with provisions is reasonable.
(2.9) Exposures to multilateral development banks (p. 19)
CWB has no comments.
Q20. Do respondents agree with the proposed treatment for MDBs? (p. 19)
CWB has no comments.
(2.10) Other assets (p. 20)
CWB has no comments.
Q21. What exposures would be classified under "Other assets"? Is a 100% risk weight appropriate? (Please provide evidence where possible). (p. 20)
CWB has no comments.
Section 3: Proposed revisions to the credit risk mitigation framework for exposures risk-weighted under the standardized approach (p. 20)
CWB has no comments.

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(3.1) Approaches to be excluded (p. 21)
CWB has no comments.
(3.2) Eligible financial collateral (p. 22)
The requirement to determine the RW% for each Corporate and Bank collateral issuer, based on financial ratios, could require major investment to obtain and process this data. The use of agency ratings, as per current practice, is much more efficient. It is worth noting, however, that moving away from a rating based approach allows for securities, for which there is no rating, to be considered as collateral.
Q22. What are respondents' views on the above alternative ways to define eligible financial collateral? (p. 22)
CWB has no comments.
Q23. What are respondents' views on the recalibrated supervisory haircuts shown in Table 4? What are respondents' views on how to eliminate references to ratings from the supervisory haircuts table? What could be the implications of eliminating references to external ratings? (p. 24)
CWB has no comments.
(3.3) Eligible credit protection providers (p. 24)
CWB has no comments.

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Q24. What are respondents' views on the proposed corporate guarantor eligibility criteria? (p. 25)
The key determinant for guarantor eligibility should be based on the absence of any economic relationship or interdependence between the borrower and guarantor, and if there is true economic benefit expected from the guarantee. Thus, eligible guarantors should not be limited to non-corporates.
(3.4) Treatment of credit derivatives (p. 25)
CWB has no comments.
(3.5) Treatment of repo and OTC derivative transactions (p. 25)
CWB has no comments.
Section 4: Quantitative impact study (p. 25)
CWB has no comments.
Annex 1 Proposals on exposure classes and credit risk mitigation (p. 27)
CWB has no comments.