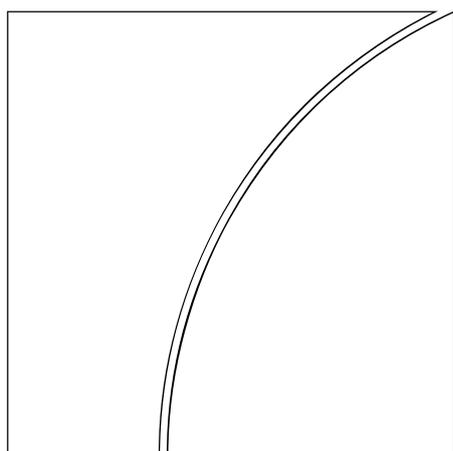


Basel Committee  
on Banking Supervision



**Working Paper on the IRB  
Treatment of Expected  
Losses and Future Margin  
Income**

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BANK FOR INTERNATIONAL SETTLEMENTS



# Working Paper on the IRB Treatment of Expected Losses and Future Margin Income

*The purpose of this paper prepared by the Joint Accounting Task Force - Models Task Force Working Group of the Basel Committee is to further the Committee's dialogue with the industry on the IRB treatment of expected losses and future margin income. Comments on the issues outlined in this paper would be welcome, and should be submitted to relevant national supervisory authorities and central banks and may also be sent to the Secretariat of the Basel Committee on Banking Supervision at the Bank for International Settlements, CH-4002 Basel, Switzerland. Comments may be submitted via e-mail: [BCBS.capital@bis.org](mailto:BCBS.capital@bis.org)<sup>1</sup> or by fax: + 41 61 280 9100. Comments on working papers will not be posted on the BIS website.*

## Introduction

The Internal Ratings Based (IRB) approach as outlined in the January consultative package (CP2) entails that regulatory capital charges be calibrated to cover both unexpected and expected credit losses in loan portfolios. Although a capital charge for unexpected losses (UL) is uncontroversial, the banking industry's reaction to a capital charge for expected losses (EL) has generally been negative.

The Committee's decision to calibrate the IRB capital requirement inclusive of EL followed an earlier decision to retain the present definition of regulatory total capital. Consequently, certain general loan loss provisions are currently included in the definition of total capital (up to 1.25% of risk-weighted assets – RWA) even though they normally cover at least some of a portfolio's expected losses. Calibrating required capital solely on the basis of UL would mean that banks could use those general loan loss provisions twice, once to cover EL and again to cover UL ('double-gearing').

Calibrating required capital so as to cover UL plus EL was intended to address the double-gearing problem while at the same time helping to insulate the IRB approach from the current diversity in provisioning practices across national accounting and supervisory regimes. Under the January proposal (a) the current definition of regulatory capital would be retained, (b) exposure at default (EAD) would be measured net of specific provisions,<sup>2</sup> and (c) capital charges would be scaled to the sum of EL and UL.

By and large, the banking industry's criticism of the proposal for the IRB treatment of EL has focused on three inter-related themes:

- (1) *Double penalty on specific provisions.* In general a specific provision would reduce a bank's regulatory capital. However, since the proposal would measure exposure at default net of specific provisions, the bank would still be faced with a capital charge on the unprovisioned part of the defaulted loan. This may create a disincentive for

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<sup>1</sup> Please use this e-mail address only for submitting comments and not for correspondence.

<sup>2</sup> We use the terms 'specific provision' to include also 'partial charge-off's (When a loan is completely charged off, it does of course no longer require any capital).

timely provisioning, and a competitive disadvantage to banks subject to conservative provisioning standards. The industry also has noted similar problems with respect to the IRB treatment of loans purchased at discount.

- (2) *Double penalty on general loan loss provisions.* Given the current definition of regulatory capital, a bank would not be permitted to use the full amount of its general loan loss provisions to cover the EL component of its IRB capital charge if the bank were constrained by either (a) the 1.25% limit on eligible general loan loss provisions or (b) the 50% overall limit on regulatory capital that can be in the form of tier 2 capital. In these circumstances, an increase in EL would increase the bank's capital requirement while its total regulatory capital could actually decrease when it made a general loan loss provision for the increase in EL. This situation creates disincentives to fully provision in a timely manner and would impose a competitive disadvantage on those banks subject to more stringent provisioning standards.
- (3) *Failure to recognise future margin income.* Before capital is threatened, future margin income would be freely available to absorb credit losses at the portfolio level. Bankers note that at origination loan prices (interest and fees) are set to cover at least a portfolio's expected losses, so that a capital charge for EL is unnecessary. By ignoring expected future margin income, it is argued that the proposal imposes punitive capital charges on high-EL, but still very safe, forms of retail lending such as credit cards.

In response to these concerns, a Joint Working Group (JWG) composed of members of the Basle Committee's Accounting Task Force (ATF) and its Models Task Force (MTF) was formed to evaluate these and possibly other concerns relating to the IRB treatment of EL. This working paper outlines how the EL treatment proposed in the Consultative Package could be modified.

## General Approach

While the industry's criticisms have validity, in many cases the fundamental problems reflect a tension between (a) the concept of 'economic capital' that underpins the IRB proposal and (b) the current definition of regulatory capital. In some cases it will be difficult to fully address the industry's concerns without modifying certain elements of the definition of regulatory capital. The JWG developed a pragmatic approach in which capital requirements would continue to be calibrated toward UL + EL, albeit in combination with a recognition of provisions actually made and, for the retail portfolio, also of future margin income. Under this approach the capital requirements for UL + EL would be allowed to be met by the sum of capital, specific provisions, general loan loss provisions not included in capital, and possibly future margin income, where the combined contribution of the last three elements would be capped at the EL element of the capital requirement.

In formulas:

$$UL + EL \leq RC + SP + GP_{\alpha RC} [+ FMI], \text{ subject to } SP + GP_{\alpha RC} [+ FMI] \leq EL.$$

Alternatively phrased:

$$RC \geq UL + \max \{0 ; (EL - SP - GP_{\alpha RC} [- FMI])\},$$

where

RC = regulatory capital

SP = specific provision or charge off

GP = general loan loss provisions

$\varphi$ RC = not included in RC

FMI = future margin income

## Specific Recommendations

To address the identified problems, the JWG developed the following 6 proposals:

**1. Identify the EL-related capital charges separately from UL-related capital charges.**

It is clear that the longer-term viability of the IRB framework would be enhanced by further international agreement on standards for loan classification and provisioning, as capital adequacy critically depends on accurate valuation of banks' assets and liabilities. Efforts should therefore be made to carefully and transparently distinguish the need for capital to cover UL from that needed to cover EL. This would make it easier to revisit the IRB framework should future efforts to consider changes in the definition of regulatory capital and/or more harmonised provisioning or accounting rules be undertaken.

**2. Measure the EAD for loans with specific provisions as the current book value plus the amount of the specific provision.**

Measuring exposures for loans net of any specific provisions is inconsistent with the IRB definition of loss given default (LGD) and the manner in which banks typically estimate LGDs. While this is not necessarily a problem under the advanced IRB approach where a bank could engineer an appropriate risk weight by adjusting LGD, it is a problem under the foundation IRB approach where LGDs are specified by supervisors. Conceptually, EAD should represent an estimate of what a bank would be legally owed in the event of default, whereas the January proposal would measure EAD as a loan's current book value. In this regard, the proposal is problematic for loans with specific provision. For such loans, EAD should therefore be measured as the current book value plus the amount of any specific provision (the 'gross' value) under both foundation and advanced IRB approaches.

**3. Recognise specific provisions by reducing EL-related capital charges by the amount of the specific provision.**

In combination with the current definition of regulatory capital the above suggested definition of EAD would provide no mechanism for recognising the full amount of specific provisions in providing coverage for EL. To remedy this situation, it is being proposed to reduce the EL-related capital charges by the amount of a specific provision (i.e. deduct 12.5 times SP from the EL-related risk-weighted asset value). This would not require a change in the definition of capital, as it would act on the side of determining risk-weighted assets and the resulting capital charge. It would also not require any downward adjustment to LGD-values that might unduly complicate the way the granularity index is calculated off LGD.

- 4. For portfolios where LGDs represent average losses within the portfolio, permit surplus specific provisions (i.e. in excess of EL for that loan) to be transferred to cover EL-related capital charges on other loans only within the same portfolio.**

A further problem to address is the case when the specific provision against a particular loan exceeds that loan's EL estimate. The issue is whether such surplus specific provisions should be transferable to meet regulatory capital charges against other assets. Where LGD estimates represent an average expectation within a particular portfolio, some degree of under- and overestimation of LGDs and ELs is expected to occur on individual loans. For those portfolios where LGDs indeed represent average losses surplus specific provisions could be transferred to cover EL-related capital charges on other loans within the same portfolio.

Similar EAD measurement problems arise in the context of purchased loans (including zero-coupon loans), for which the amount that is legally owed to the purchasing bank may exceed the loan's book value (equal to the purchase price) if the financial condition of the underlying borrower had deteriorated subsequent to the loan's origination. A possible treatment would be to measure EAD as the amount that would be legally owed if the underlying borrower were to default immediately; to reduce the bank's EL-related capital charge for that loan by the purchase discount; and to *disallow* any positive difference between the discount and EL to be used to meet capital charges against other assets. A conceptual difficulty with such a treatment, however, is that purchase discounts can reflect not just a deterioration in the credit quality of the borrower, but also general movements in interest rates and possibly other factors. Before providing final recommendations on this issue, the JWG would therefore welcome industry feedback as to whether such a treatment would be prudent and feasible.

- 5. Recognise general loan loss provisions in excess of either the 1.25% RWA cap or the 50% tier 2 / tier 1 cap by reducing EL-related capital charges by the amount of the general loan loss provision in excess of either cap.**

Since the IRB approach would entail a capital charge for EL, it would be punitive not to give credit for any general loan loss provision taken by a bank in providing coverage for EL. Specifically, both the current 1.25% limit and 50% limit on overall tier 2 capital imply that certain general loan loss provisions might not be fully recognised as providing dollar-for-dollar coverage of EL. The proposal put forward to address this issue is to deduct general loan loss provisions that exceed either of the caps from EL-related capital charges (i.e. deduct 12.5 times those 'excess' GP from the EL-related risk-weighted asset value).

- 6. For the retail portfolio, allow (by definition advanced) IRB banks to use their own internally generated estimates of EL-related capital charges based on a comparison of expected future credit losses and future margin income. These estimates would be based on guidelines supplied by supervisors and subject to supervisory review. For non-retail portfolios, sticking to the one-year ahead PD times LGD without any FMI recognition would seem to be an acceptable approximation for EL.**

In the January consultative package, EL is defined as the product of PD and LGD. Some have raised concerns about the accuracy of this definition. On the one hand, the current definition could understate EL since PD only has a one-year horizon and losses beyond this horizon are ignored. This is particularly problematic for long-term lending such as mortgage loans. On the other hand, the current definition will tend to overstate EL-related capital requirements to the extent that banks take EL into account when pricing their loans. That is, if banks price loans so that future margin income on the loans offsets expected future credit

losses, the above formula for EL – which does not recognise the impact of future margin income – will overstate a bank’s risk exposure. This of course assumes that a bank’s pricing behaviour is relatively unaffected by competitive pressures, lead pricing and economic stress. The PD times LGD treatment is correct, then, only if we assume that these effects somehow compensate for one another. For shorter maturity loans with predictable future margin income (as typically found in retail portfolios) this approach may be overly conservative.

While there is a conceptual argument in favour of recognising future margin income for retail portfolios, the operational problems of such a treatment – particularly the difficulties that would be experienced by supervisors in validating FMI estimates – may be significant. Two possible *indirect* approaches have nevertheless been identified. Within the context of the current PD times LGD definition, for instance, future margin income could be recognised by an  $(1-x)$  overlay factor on EL-related risk weights. Alternatively, under a so-called ‘fallen angel’ approach, EL risk weights would be zero by assumption for all loans above a certain quality threshold, owing to the presumed adequacy of future margin income for these loans. The EL-related capital weight for loans below the quality threshold (the ‘fallen angels’) would equal  $(1-\delta)(1-ul)$ , with  $1-\delta$  reflecting the reduction in the loan’s value owing to credit quality deterioration and  $ul$  being the UL-related capital weight.

Whereas the provision of supervisory risk weights (based on either approach for measuring EL) would be typical for foundation IRB approaches, retail portfolios will become subject to an advanced IRB approach only. Banks under such an advanced IRB approach for retail (even if they use foundation IRB for other portfolios) might therefore be encouraged to use internally generated estimates of EL-related capital charges based on an estimation of expected future credit losses minus future margin income over the contract’s residual maturity (i.e. not necessarily restricted to the one-year horizon). These estimates would be based on guidelines supplied by supervisors and subject to supervisory review. As interest revenue – aside from expected losses – also should cover funding and administrative costs as well as the remuneration of capital held for unexpected losses, it is clear that the appropriate concept of future margin income that the JWG intends to develop for this purpose would be a ‘net’ concept.