

The Use of Credit Rating Agencies and their Impact on the IRB Approach

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The IRB Approach – Cornerstone of Basel II

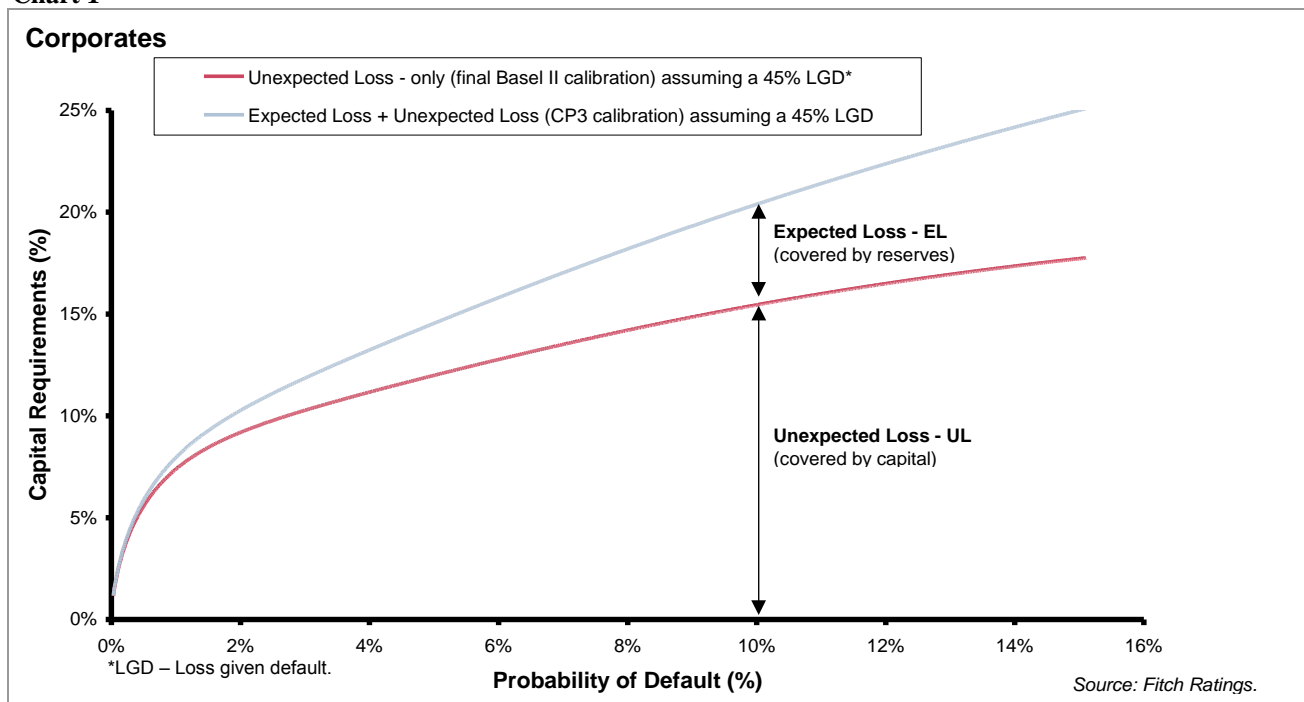
The IRB approach is a cornerstone in the Basel II capital framework and a critical innovation in the regulatory capital treatment of credit risk. Indeed, much of the work of the Committee since June 1999 has focused on building and refining the IRB framework, including the form and calibration of the capital formulas, the operational standards and risk management practices that qualifying banks must follow, and the treatment of different types of assets and business activities. However, while this represents a new path in banking regulation, the concepts and elements underlying the IRB approach are based largely on the credit risk measurement techniques that are used increasingly by larger, more sophisticated banks in their economic models. The IRB approach is, at heart, a credit risk model — but one that is designed by regulators to meet their prudential objectives.

The building blocks of the IRB capital requirements are the statistical measures of an individual asset that reflect its credit risk, including:

- Probability of default (PD), or the likelihood that the borrower defaults over a specified time horizon.
- Loss given default (LGD), or the amount of losses the bank expects to incur on each defaulted asset.
- Remaining maturity (M), given that an instrument with a longer tenor has a greater likelihood of experiencing an adverse credit event.
- Exposure at default (EAD), which, for example, reflects the forecast amount that a borrower will draw on a commitment or other type of credit facility.

Under the most sophisticated or advanced version of the IRB approach, banks are permitted to calculate their capital requirements using their own internal estimates of these variables (PD, LGD, M, and EAD), derived from both historical data and specific information about each asset. More specifically, these internal bank estimates are converted or translated into a capital charge for each asset through a predetermined supervisory formula. Essentially, banks provide the inputs, and Basel II provides the mathematics.

Chart 1



As a credit risk model, the IRB formula has been designed to generate the minimum amount of capital that, in the minds of regulators, is needed to cover the economic losses for a portfolio of assets. Therefore, the amount of required capital is based on a statistical distribution of potential losses for a credit portfolio and is measured over a given period and within a specified confidence level. The IRB formula is calculated based on a 99.9% confidence level and a one-year horizon, which essentially means that there is a 99.9% probability that the minimum amount of regulatory capital held by the bank will cover its economic losses over the next year. In other words, there is a one in 1,000 chance that the bank's losses would wipe out its capital base, if equal to the regulatory minimum.

The economic losses covered by the final IRB capital charges represent the bank's UL (unexpected losses), as distinguished from losses that the bank can reasonably anticipate will occur, or EL (expected losses). Banks that are able to estimate EL typically cover this exposure through either reserves or pricing. In statistical terms, the EL is represented by the amount of loss equal to the mean of the distribution, while UL is the difference between this mean loss and the potential loss represented by the assumed confidence interval of 99.9%. As seen in Chart 1 on page 1, the credit risk on an asset, reflected both in the UL and the EL, increases as the default probability increases. Likewise, the level of credit risk also increases with higher loss severities, longer maturities and larger exposures at default.

In addition (see Chart 1), EL contributes a relatively small proportion of the capital charge for high-quality (or low-PD) borrowers and an increasingly greater proportion as an assets moves down the credit quality spectrum. For example, for a loan to a very strong (or low-PD) borrower, the bank anticipates that the asset will perform well and is unlikely to experience credit-related problems. Therefore, any severe credit deterioration or loss that might occur on the loan to the borrower would differ from the bank's expectation and, thus, be explained primarily by UL. By contrast, for a loan to a weaker (or high-PD) borrower, the probability of some credit loss is much greater, enabling the bank to build this expectation of loss into its pricing and reserving strategies. Therefore, at the lower end of the credit quality spectrum, EL is a larger component of the credit risk facing the bank than at the higher end of the quality spectrum.

Of course, the amount of economic loss that an asset might incur depends on the type or structure of the asset. For example, is the exposure to a major corporation or to an individual borrower? Is it secured by collateral? How does the borrower generate funds for repaying the bank? What is the typical life or tenor of the asset? How is its value affected by market downturns? Different credit products can behave quite differently, given, for example, their contractual features, cash flow patterns, and sensitivity to economic conditions. Basel II recognizes the importance of product type in explaining an asset's credit profile and provides a unique regulatory capital formula for each of the major asset classes, including corporates, banks, commercial real estate (CRE), and retail.

Critical elements of IRB

A critical element of the IRB framework and a key driver of the capital charges are the assumptions around correlation and the correlation values used in the formulas. Basel II does not recognize full credit risk modelling and does not permit banks to generate their own internal estimates of correlation in light of both the technical challenges involved in reliably deriving and validating these estimates for specific asset classes and the desire for tractability.

In generating a portfolio view of the amount of capital needed to cover a bank's credit risk, Basel II captures correlation through a single systematic risk factor. More specifically, the IRB framework is based on an asymptotic single-risk factor model, with the assumption that changes in asset values all are correlated with changes in a single systematic risk factor. While not defined under Basel II, this systematic risk factor could represent general economic conditions or other financial market forces that broadly affect the performance of all companies.

In summary, a low correlation implies that borrowers largely experience credit problems independently of each other due to unique problems faced by particular borrowers. On the other hand, higher asset correlations indicate that credit difficulties occur simultaneously among borrowers in response to a systematic risk factor, such as general economic conditions.

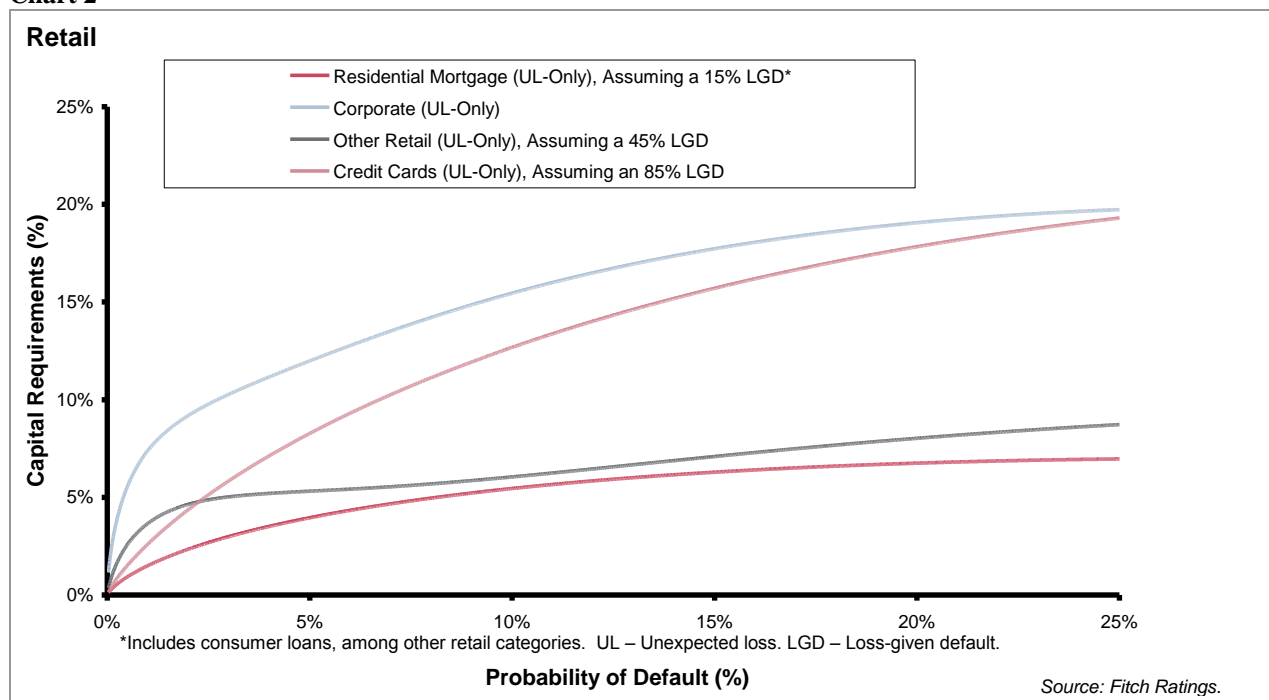
Correlation assumptions

Under Basel II, the degree to which an asset is correlated to broader market events depends, in certain cases, on the underlying credit quality of the borrower. Based on empirical study conducted by the Committee, the performance of higher quality assets tends to be more sensitive to – and more correlated with – market events. Although this finding might at first seem counterintuitive, it is consistent with financial theory that a larger proportion of economic loss on high-quality exposures is driven by systematic risk. By contrast, the economic loss on lower quality exposures is driven mainly by idiosyncratic, or company-specific, factors and relatively less so by systematic risk. This reasoning suggests that the performance of lower quality assets tends to be less correlated with market events, and therefore, the biggest

driver of credit risk is the high PD value of the borrower, or more broadly, the lower intrinsic credit quality of the borrower.

The IRB approach distinguishes between three types of retail assets — credits cards (known formally as qualifying revolving retail exposures [QRRE]), residential mortgages, and consumer lending (classified under other retail). Basel II has calibrated the three retail capital curves to reflect the unique loss attributes of each of these different products, as seen in the Chart 2 below. The IRB formulas for the three retail product types are identical except for the underlying correlation assumption, a key driver of the shape and structure of the capital requirements. Additionally, the Basel II charges are sensitive to the underlying LGD estimate, which in practice can vary substantially across the different types of retail assets. For example, loss severities tend to be much higher for credit card assets than for residential mortgage lending.

Chart 2



The decision, first announced in July 2002, to treat credit cards as a separate asset class under Basel II was an important step in recognizing the typically lower risk profile of general-purpose credit cards, particularly to prime borrowers. Since that decision, the Committee has continued to refine its treatment of credit cards to reflect the unique loss attributes of this asset class.

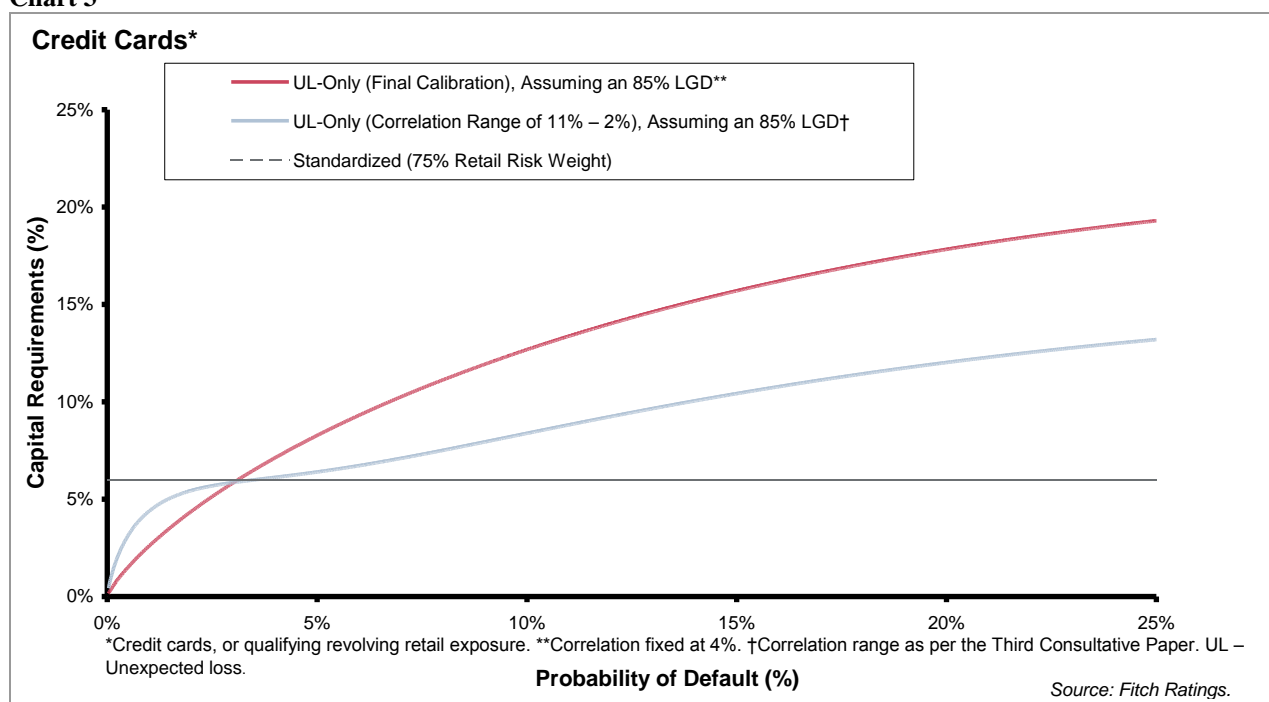
The move under Basel II to a UL-only capital charge implicitly acknowledges the sophistication and reliability of banks to measure and manage their EL exposure. For retail products — and credit cards in particular — the development of sophisticated risk measurement models has enabled many banks to estimate EL and incorporate it into risk-based pricing and reserving practices. For banks with less sophisticated internal models, the discipline of preparing for the IRB approach will help them to develop more refined EL-based pricing and reserving. The move to a UL-only framework included eliminating future margin income (FMI) from the capital calculations. Fitch supports this change, having previously expressed concern with the inclusion of FMI as an offset to regulatory capital charges). The recognition of FMI would have unnecessarily clouded the regulatory capital base, as in Fitch’s view, the loss absorption of FMI is not sufficiently reliable to warrant treatment as capital. Since FMI is a statistical generation of potential future income ability that fluctuates with interest rates, as well as the economic cycle, FMI could be affected by market dynamics. Competitive pricing could also negatively affect the ability of banks to fully realize their estimates of FMI. Fitch takes a conservative view of FMI within the credit rating process, allowing no capital recognition in rating financial institutions and permitting limited recognition in rating certain more junior classes of credit card asset-backed securities (ABS).

Another critical change to the Basel II framework and a flashpoint for the industry has been the level of the correlation estimate used in the IRB formula for credit cards. More specifically, Basel II applies a fixed 4% correlation across all PD levels, rather than calibrating correlation as a function of borrower quality (correlation was previously set to range from 11% for high-quality borrowers to 2% for low-quality borrowers). The intuition behind the previous treatment of setting the correlation higher for high-quality (or low-PD) assets than for low-quality (or high-PD) assets was the assumption that a larger proportion of the economic risk on high-quality exposures is driven by systematic (as opposed to idiosyncratic or borrower-specific) risk factors. While this conceptual reasoning is sound, the higher correlations ap-

plied to assets at the lower PD levels appeared to result in fairly onerous capital charges on these assets, at least according to industry estimates.

While correlation could theoretically vary within a credit score band, the adoption of the 4% correlation factor is significantly lower than the 11% peak and results in lower capital charges on high-quality credit card assets. For example, as illustrated in Chart 3 below, a pool of credit cards with a PD of 2% and an assumed LGD of 85% would have required regulatory capital of 5.5% based on the ranging correlation of 11%–2% (assuming a UL-only calibration). Using instead the fixed correlation of 4%, the regulatory capital requirements on this same pool would decline to about 4.5%, or a 100-basispoint reduction in the charge at the 2% PD level. The fixed 4% correlation only provides a capital break on higher quality assets (i.e. those with PDs of 3% or below). Therefore, banks holding lower quality credit card assets do not appear to benefit from the new 4% correlation assumption.

Chart 3



In evaluating Basel II’s changes to the credit card correlation assumptions, the broader issue to explore is whether the new correlation value results in more appropriate regulatory capital charges that better reflect the underlying economic risk of the assets. Given the parameters of the credit model created under Basel II, adjusting the correlation value is one of the primary policy levers that the Committee has at its disposal to alter and modify the shape and structure of the IRB capital curves. The decision to move to a 4% correlation assumption reflects not just an effort to identify a correlation estimate more reflective of industry experience, but also the Committee’s wider mission of calibrating the overall charges on credit cards to be more reflective of the economic risk of these assets (particularly for higher quality borrowers) and achieving other prudential and regulatory objectives.

In this regard, Basel II’s adoption of a fixed 4% correlation estimate appears, on balance, to be a positive change that will move the overall charges more generally in line with the underlying economic risk on credit cards. Lowering the correlation assumption from a peak value of 11% to a fixed 4% on higher quality credit card exposures seems to be more consistent with the typical loss characteristics and risk profile of these assets, which have experienced low loss volatility and generally stable, predictable loss patterns for prime borrowers historically. Likewise, the increase in correlation values from a low value of 2% to a fixed 4% for lower quality credit card assets (and the resultant higher capital charges) is also more appropriate, given the more volatile performance of the subprime market. Nonetheless, banks with a heavy mix of subprime credit card activity will need to ensure that the capital charges rendered by Basel II cover the greater volatility and higher risk profile of these borrowers.

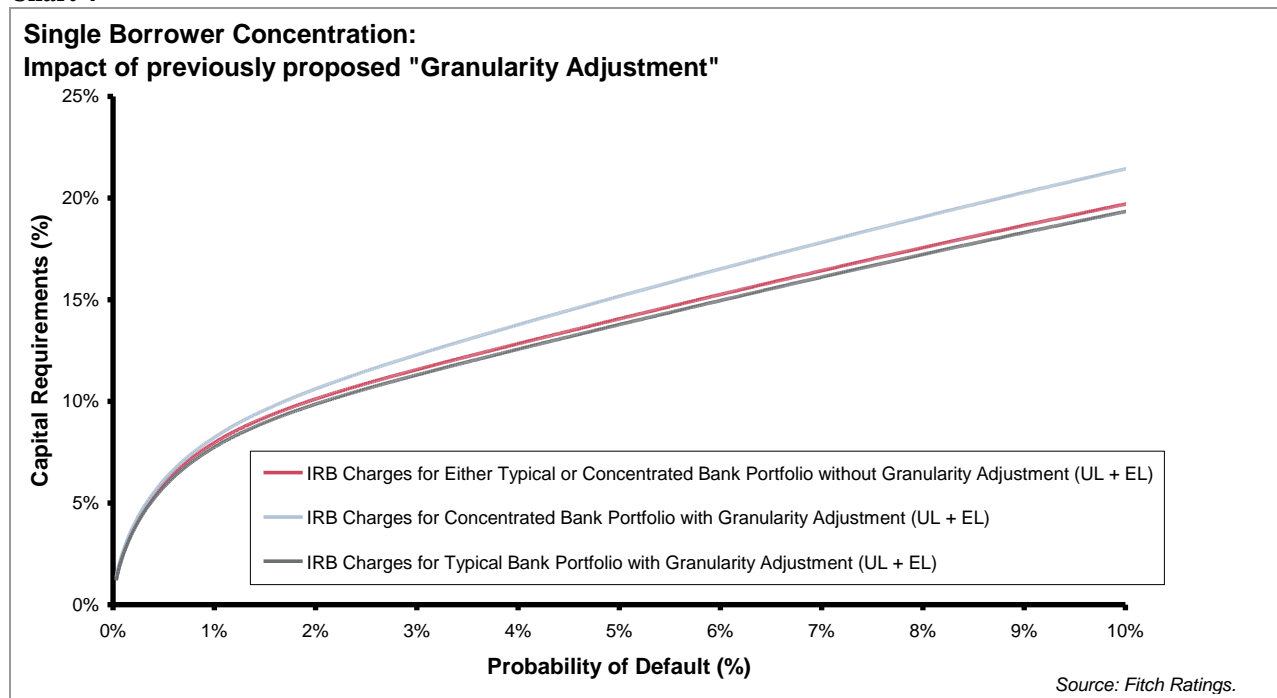
Concentration Risk

A critical theoretical assumption underlying the IRB capital framework is that the underlying portfolio of assets held by the bank is highly granular and well diversified. Of course, in practice, some banks will have concentrated exposures to single borrowers or particular markets, geographic regions, or industries that, all else being equal, can increase significantly the economic risk facing the bank. Therefore, in evaluating a bank's corporate lending portfolio, it is important to gain a sense of the various types of concentration risk to which the bank might be exposed. The Basel II capital formulas do not directly capture risk concentrations, meaning that they do not distinguish between a well-diversified bank and one with concentrated exposure to a few individual borrowers, geographic regions, and business sectors. Supervisors view concentration as an important risk and have other tools to address risk concentrations. For example, many supervisors have adopted legal lending limits, which restrict banks from providing credit to an individual borrower beyond a certain defined threshold (often expressed as a percentage of their capital base). Additionally, Basel II identifies concentration risk as one of the critical elements that supervisors are expected to monitor closely in their review of banks' capital adequacy (under Pillar 2, the Supervisory Review Process [Pillar 2], of the Basel II framework). Basel II notes that "risk concentrations are arguably the single most important cause of major problems in banks."

To gain a better sense of how single-borrower concentration might affect a bank's measure of credit risk, Fitch has resurrected and graphed the Basel II granularity adjustment, which was previously proposed but then subsequently dropped by the Committee in response to general industry concerns about the complexity of the capital framework. The granularity adjustment essentially was an overlay to the IRB capital formula, increasing the charges if a bank's portfolio were to have larger single-borrower concentrations than the industry average (and reducing the charges if a bank's portfolio were better diversified than average). In the granularity analysis, Fitch first composed a typical portfolio of non-retail assets held by a hypothetical bank, consisting of 50% corporate loans (with the 10 largest borrowers contributing 20% of the corporate book), 30% loans to small- and medium-sized enterprises (SMEs; with the 10 largest borrowers contributing 20% of the SME book), and 20% CRE loans (with the five largest borrowers contributing 10% of the CRE book). Additionally, given the role of both legal lending limits and economic capital modelling in limiting borrower concentration, exposures to single borrowers generally do not exceed 2% of a bank's total assets. Therefore, Fitch assumed that no single exposure within this typical portfolio would exceed 2% of the book for a given asset class.

As seen in the following Chart 4, the previously proposed granularity adjustment for this typical portfolio does not alter the capital requirements materially. This is because the IRB charges have been roughly calibrated to reflect the average degree of borrower concentration typically found in the industry.

Chart 4



In the attempt to construct a scenario in which the granularity adjustment would have a material impact on the IRB charges, Fitch needed to introduce fairly strong assumptions about the level of borrower concentration within the portfolio. In one such scenario, Fitch now assumes some exposures represent up to 4% of the particular book, or, more generally, 2% of the bank's total assets, still consistent with lending limit regulations. Therefore, the hypothetical bank's portfolio has the 20 largest corporate borrowers constituting 80% of the corporate book, the 20 largest SME borrowers constituting 80% of the SME book, and the 20 largest CRE exposures constituting 80% of the CRE book. As Chart 4 on page 5 illustrates, this scenario results in a moderate increase in capital requirements based on the granularity adjustment, suggesting that the final Basel II framework (which does not include a granularity adjustment) might in certain cases lead to an understatement of the capital needed to support a bank's borrower concentration, although this adjustment appears to have a second order effect on the overall IRB charges.

However, there are other important sources of concentration affecting a bank's credit risk profile, such as geographic and industry concentrations, that even the granularity adjustment would not have picked up and that are not directly reflected within the IRB framework. While supervisors will monitor credit risk concentration as part of their responsibilities under Pillar 2, it will nonetheless be important for market analysts to differentiate between banks that have more pronounced risk concentrations. For example, regional banks potentially could have higher concentrations in specific markets or sectors relative to larger, well-diversified institutions. Analytically, it is important to determine how well the bank is evaluating and measuring the several forms of potential concentration it may face (single borrower, geographic, and business sector, among others), how well it is able to aggregate these concentrations, and its strategy for managing and mitigating this risk.

By not allowing banks to internally estimate portfolio correlation (e.g. pair-wise correlation among individual borrowers and across asset categories), the Basel II ratios are insensitive to changes in concentration risk. For example, in cases where a significant portion of a bank's credit portfolio is concentrated in a particular geographic market, the underlying correlation among these assets is likely to be higher than the correlation values provided by Basel II. Therefore, in this instance, the underlying risk of the bank's portfolio is not fully reflected in the IRB charges. Basel II's predetermined estimates of correlation are important in assessing regulatory capital ratios, not only to understand differences in the IRB formulas across different asset classes, but also to assess potential concentration risks not captured in the calculations.

Fitch will leverage the Basel II ratios as part of its analysis of bank capital adequacy in the institutions it rates. However, there are several key areas that Fitch will analyze closely, as assumptions and practical considerations embedded in the IRB ratios could, in certain instances, lead to understating risk exposure. For example, a key area Fitch will evaluate is the IRB assumption that the bank's portfolio is reasonably well diversified. Analysts will assess how the bank identifies, aggregates, and manages concentration risk and allocates capital against it. Concentration risk is a fundamental part of Fitch's capital analysis, particularly in evaluating more regionally focused institutions. Fitch also will look closely at historical data the bank uses to generate its risk estimates. Fitch believes that for certain asset classes with longer market cycles, a longer data history than the minimum requirements established under Basel II might help to reflect a more complete range of loss events and show that more capital is needed to cover the risk.

Pillar 3's impact on Market Discipline & Disclosure

Overview

Pillar 3 is, in many ways, one of the most groundbreaking aspects of Basel II. The purpose of this part of the new capital framework is to communicate to the market much of the risk information assembled for capital adequacy purposes. Pillar 3 reflects the Committee's belief that market participants using this information will reward those that manage risk well and shun those that do not. Nothing is quite as effective as the prospect of the loss of business or investor confidence in motivating an errant management team to mend its ways. In this way, Pillar 3 should help to reinforce the type of behaviour and the risk management discipline that are envisioned in the other two pillars of the Basel II framework.

To accomplish this goal, Pillar 3 sets out robust disclosure requirements. Relative to current requirements in most countries today, Basel II mandates much more extensive disclosure about the distribution of risk within banks' various portfolios and businesses. It also requires discussion of the underlying policies and valuation techniques used to measure risk. The quantitative data requirements are broad and are expected to give considerably greater detail of a bank's portfolio and risk appetite than the current required disclosure.

The increased disclosure in and of itself will be extremely useful to market analysts, and Fitch intends to leverage this information in its analysis. To use the new information most effectively and discern the nuances between banks, analysts will need to understand how Basel II operates and, more importantly, to appreciate the nature of the internal rating systems that each bank uses and the assumptions that are used in those systems. The Basel II requirements leave sufficient room for banks to disclose information in a way that works well with the bank's own management information systems.

Inherently, common disclosure standards promote greater comparability from one institution to another. However, if not interpreted carefully, they may lull investors into a false sense of uniformity. Behind the numbers produced by the new disclosure standards are still different approaches to risk rating and measurement. This is generally viewed favourably by Fitch, as a system that is too prescriptive will likely inhibit innovation and improvement. Yet it is important to get behind the numbers to appreciate the nuances in risk profiles across various financial institutions.

Lessons from the World of Market Risk

In assessing the types of challenges Fitch believes analysts will face, it is helpful to look at the evolution of value-at-risk (VaR) modelling as an analytical and regulatory tool, as its use in measuring market risk over the past decade provides some broad parallels to the implementation of Pillar 3 for credit risk.

An important lesson of the evolution of VaR is that by providing a common methodological and disclosure framework, regulation can help to enable the broad assessment and comparison of risk exposure across institutions. Initially, disclosure of VaR reflected a variety of approaches and implementation techniques, making it difficult for both analysts and supervisors to differentiate the level of market risk that each institution faced. The Committee, under the 1996 Market Risk Amendment, promoted greater harmonization in methodology and disclosure by establishing a common framework for calculating VaR and market risk reporting. Banks were required to use a minimum 99% confidence level, derive loss estimates based on at least a one-year observation of market data, cover losses over a 10-day period (or a one-day VaR scaled up to 10 days), and encompass the different forms of market risk (e.g. equity, interest rate, and foreign exchange, among others). Currently, thanks in part to the Basel II regulatory parameters, most of the large banks base their VaR measures round these standards.

At the same time, banks have continued to push forward in their measurement approach as they manage risk on an economic basis and as market pressures encourage further innovation in practices. For example, a bank's internal market risk model might make use of volatility and correlation calculations which place greater weight on more recent market movements to better capture the relative importance of these events. This exponentially weighted moving average technique contrasts with the market risk regulatory measure which is based on equally weighted market movement data over a given observation period. Therefore, to understand a bank's market risk profile, it is important to understand the differences in assumptions between its internal economic models and the calculated regulatory measures, in particular any adjustments or innovations that the bank makes when looking at risk internally.

In modelling risk, the role of stress analysis is critical. In a period of low historical volatility, a bank could generate a lower VaR measure that might lead to understatement of the potential risks. However, risk managers should not assume that the future is a perfect, or even accurate, reflection of the recent past. If a bank increases its exposure primarily on the basis of generating lower VaR estimates, then the bank's plans for or anticipation of potential market disruptions need to be assessed, based either on specific historical (and perhaps forgotten) episodes of pronounced volatility or on

plausibly constructed forecasts of market movements. This type of scenario analysis provides greater insight into the bank's risk exposure under more extreme market conditions.

There are important factors and assumptions underlying the calculation of VaR that are critical to understanding the bank's market risk exposure. These require analysts to dig beneath the data and ask penetrating questions that truly assess the market risk profile of the institution. Piercing through disclosure data to differentiate among bank practices is critical given the variation in banks' risk measurement methodologies and the way in which their risk profiles are portrayed. Much of the meaning emerges not just from the final regulatory or economic capital measures, but from understanding how banks think about and manage their risk profiles.

Challenges of Basel II

As with the evolution of VaR models for market risk, Basel II pushes the boundaries of credit risk measurement and disclosure and provides new opportunities, as well as new challenges, for analysts and investors to better understand a bank's risk profile and capital allocation approach. In leveraging these new disclosures, some critical issues for analysts to explore include: the bank's use of historical data and statistical information; the underlying ratings philosophy and approach to internal ratings; the bank's capital allocation strategy over the course of the business cycle, particularly if during a volatile market; important differences across different countries and markets and how these can affect risk estimates; and for more sophisticated organizations, how the Basel II measures compare to the bank's economic capital models.

Historical Data and Statistical Information

To understand a bank's internal risk-rating systems and credit risk measurement approach, the bank's use of underlying data analysis to derive loss estimates for each rating grade needs to be assessed. Comparing loss estimates from one bank to another will require an appreciation for the similarities and differences between companies' use of historical data.

The economic period covered by the data history is a crucial factor in evaluating the robustness of the bank's loss estimates. If the data cover a period of relative calm in markets, the bank's estimation of PD or LGD might not capture the potential for future volatility in the asset's performance. For example, assuming a bank is using its own internal rating system on CRE loans, incorporating both a derived PD and loss severity based on its own historical experience, and the historical data span seven years (between 1997 and 2004), the amount of capital dictated by the model for these CRE loans is likely to be very different, and less conservative, than in another bank's model that spans a longer horizon and incorporates the more pronounced loss experience in these markets in 1990–1992.

Another consideration is whether the historical data used is relevant to the bank's current business strategy and asset mix. For example, under Basel II, banks entering a new business activity will need to obtain data that are appropriate to that product; however, how the data are deemed to be relevant, particularly for a relatively untested or new product, becomes an issue. In other cases, banks exiting a particularly troublesome type of lending might determine that historical loss data from that activity should be excluded from the calculation of its reserves or capital. Therefore, cases where management is pursuing new business activities or taking a deliberate departure from historical data are of interest.

Rating Philosophies

Another critical factor in understanding a bank's measure of credit risk under Basel II is a bank's internal rating philosophy. These vary considerably and play a crucial role in credit risk measurement. Some banks choose to rate by taking into consideration possible stresses through a business cycle (a through-the-cycle approach) while others tend to take more of a point-in-time approach, recognizing the business cycle through frequent and aggressive rating changes.

A bank's rating philosophy affects the volatility of ratings, how credits are distributed among rating grades at a given time, and what the underlying PD estimates are for those grades. A bank that follows a point-in-time philosophy will have considerably more rating volatility incorporated into its internal rating systems; the bank's equivalent of a 'BBB' rated credit today could fall to a 'BB' or 'B' if that particular obligor or segment of the economy weakens, even slightly. Therefore, the PDs for that bank's portfolio may be very different than those for a bank that rates the same credit a 'BB-' right from the beginning and holds the rating through the business cycle.

Banks using more of a point-in-time approach will reflect market shocks more quickly and are much more likely to move ratings more than one notch at a time. However, these ratings might also pick up short-term noise that can lead to overstatement of the risk during periods of market stress. If a move, particularly a downward move, leads to overstatement of the risk, banks typically just reverse the rating action. Analysts also need remember that rating philosophies can change over time. Ratings that were assigned much farther in the past might not be comparable to those assigned today. For example, is a particular bank's 'BBB' equivalent today exactly comparable to its 'BBB' in 1998 or 2000, or has management become more conservative or more liberal in its rating approach?

Basel II appears to offer room for banks to follow either type of rating approach. On one hand, banks are expected to estimate the default risk over a one-year horizon, which would encompass only a portion of an economic cycle and thus suggest more of a point-in-time approach. On the other hand, banks must use longer data histories (i.e. five years of PD and either five or seven years of LGD, depending on the asset) and, according to Basel II, reflect long-term experience in generating risk estimates, which suggests more of a through-the-cycle approach. How this plays out in practice will become clearer during the implementation process and as regulators further develop their views on banks' rating approaches.

Stress Testing

Closely related to banks' rating philosophies is the tendency of the Basel II capital ratios, in more closely reflecting the underlying credit risk exposure of banks, to move pro-cyclically. In a strong economic environment, a bank's credit risk measures will tend to decline and, in turn, its capital ratios will improve and potentially lead to the bank shedding capital. However, if the economy deteriorates, the bank's risk measures will likely worsen, resulting in weaker Basel II ratios.

Analysts and investors should look for signs that a bank is thinking carefully about the amount of capital it needs to hold to weather future market distress. In this regard, as with the evolution of VaR modelling, the role of stress testing is critical. Banks need to assess carefully both historical examples of more severe credit problems and possible future scenarios of credit disruption. Therefore, how banks incorporate such stress assessments into their capital allocation process will be an important area for analysts to review and one that Fitch considers in its rating process.

Robust stress testing is particularly relevant during stronger economic times, when the more recent underlying data used to generate the Basel II risk estimates (i.e. PD and LGD) might not appropriately reflect potential risks ahead. During a market boom, some banks might respond to their improving Basel II ratios by repurchasing shares or otherwise lowering their capital base. To the extent that a reduction in the level of a bank's capital is driven principally by an improvement in its Basel II ratios, Fitch will be looking closely at the bank's capital strategy, in particular how stress testing is used to assess the impact of more severe credit problems.

Transparency in the bank's evaluation of stress scenarios and management of capital based on them is critical. Although Fitch recognizes that certain aspects of a bank's capital allocation strategy and process are proprietary, it is important for the bank to communicate the rationale and analysis behind moves to reduce its level of capitalization. Fitch supports the more risk-sensitive Basel II capital requirements and, more generally, the movement by several banks to manage their capital levels based on internal economic risk assessments. At the same time, from a rating perspective, Fitch believes that banks should seek to explain how well their capital base allows them to navigate the full array of risks that can arise over the course of an economic cycle.

Differences across International Markets, Jurisdictions and Models

In comparing the Basel II ratios and Pillar 3 disclosures across banks globally, an understanding of the differences across markets that can affect banks' loss estimates is essential. For example, two banks operating in different countries might have markedly different LGD estimates for the same type of asset. This difference does not necessarily mean that one bank is wrong and the other is right, or that the bank with the higher LGD estimate has a more conservative risk measurement approach than the other. Rather, analysts and investors need to explore the root causes of this difference. For example, different bankruptcy regimes or collateral practices affect a bank's ability to obtain and liquidate collateral on a defaulted exposure. In some countries, the laws lean more or less favourably towards banks when a borrower defaults.

Real estate lending is a good illustration of these issues. For instance, in the U.K., it is often possible for a bank to obtain possession of real estate collateral quite quickly following a borrower default, which allows the bank subsequently to liquidate the collateral and to achieve recovery in a fairly short time. This tends to help preserve the value of the property, since bankrupt property owners generally do not have the resources to properly maintain a property. In contrast, a U.S. bank lending on property in the State of New Jersey, for example, will encounter a very complicated legal process that leans heavily toward the borrower. It can take years for a bank to obtain legal possession of a property once a borrower defaults. Therefore, the cost of carry is higher, and the value of the property may be considerably lower once the bank obtains possession, increasing the bank's LGD.

Differences in market structure or legal practices can result in legitimate differences in a bank's risk estimates and do not necessarily mean that a bank with, for example, a higher LGD estimate is either more conservative in its risk measurement or has a higher risk appetite.

The Basel II capital framework is based on some of the same risk measurement concepts as in the economic capital models that more sophisticated banks use internally. However, Basel II, in its goal of achieving tractability and uniformity, embeds a number of supervisory parameters and simplifying assumptions — for example, regarding portfolio diversification levels — which will inevitably differ from the internal structure of banks' economic capital models.

Much like the evolution of VaR modelling, how the Basel II regulatory measure compares with the bank's management of credit risk on an internal economic basis needs to be examined. In making such a comparison, key areas of departure between the two and how they affect the risk measures should be assessed. It is also important to look for cases in which the Basel II measures are more conservative than, and hence are binding over, the bank's economic model, which might create potential incentives for banks to engage in new forms of regulatory capital arbitrage.

Also important to explore are the bank's assumptions regarding correlation within and across different portfolios, given that these can be a key driver in the amount of capital generated. For example, what is the impact of recognizing the risk-reducing benefits of portfolio diversification on the bank's overall capital levels, and does the size of the reduction seem reasonable? What kinds of empirical work has the bank done to validate these estimates? A related issue to consider is the bank's approach to reflecting potential risks posed by concentrations in risk exposure. For example, what types of processes does the bank use to identify, measure, and aggregate different forms of concentrations across its various portfolios? How well does the bank capture more subtle forms of concentration risk, for example caused by having credit exposures to CDOs of CDOs?

To make this comparison, data and information are critical. Basel II pushes the frontier in the types of risk-related disclosures banks will need to provide around their credit risk-rating systems and measurement of regulatory capital. Some banks currently provide high-quality disclosure about their credit risk exposure and approach to economic capital, which, coupled with the heightened risk transparency under Basel II, hopefully could motivate an increasing number of banks to provide more meaningful information about their economic capital models. Such information will be particularly useful given the valuable insights that can be generated by a comparison between a bank's Basel II and economic capital measures.

Fitch has reviewed the existing level of credit risk-related disclosures across a sample of banks internationally and has found varying degrees of disclosure quality across different markets. Quality can vary quite a bit, even within markets, with a very small number of banks having emerged to date as clear thought leaders in providing robust and insightful risk disclosure. Pillar 3 will certainly provide more information to analysts and investors than ever before.

Looking Ahead

Looking ahead, Fitch will leverage both the enhanced disclosure framework and the greater risk sensitivity of the Basel II capital ratios, which are helpful tools in comparing the broad risk profile of banks. In assessing a bank's capital, one of several factors included in the rating process, Fitch looks to the level of capital relative to the bank's exposure, its approach to capital planning, and the quality of the bank's risk management practices. For example, Fitch's analysis addresses a wide range of issues, including how well the institution is positioned to withstand adverse market events, how its capital planning ties into its overall business strategy (e.g. future acquisition plans or new product development), and the bank's ability to access new capital or grow its capital base. In addition, as banks continue to develop better and more robust internal measures of economic risk, an even greater portion of Fitch's analysis will focus on the rigor and assumptions behind its economic capital modelling and the bank's use of stress testing or scenario analysis to forecast the capital impact of potential risks. All of these factors help to shape Fitch's overall view on the capital strength and, more broadly, the credit quality of the bank.

About the Authors

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